

Sutter Bypass Widening and Rehabilitation Project



Initial Study with Proposed Mitigated Negative Declaration

State Route 20, Sutter County

03-SUT-20-PM 5.0 to 11.3

EA 03-1A920 EFIS 03-0002-0608

Prepared by the
State of California Department of Transportation

June 2016



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General Information about this Document

What's in this document?

The California Department of Transportation (Caltrans), as California Environmental Quality Act (CEQA) lead agency, has prepared this Initial Study/proposed Mitigated Negative Declaration (IS/Proposed MND), which examines the potential environmental impacts of the alternatives being considered for the proposed project located in Sutter County, California. The document tells you why the project is being proposed, how the existing environment could be affected by the project, the potential impacts of the project, and the proposed avoidance, minimization, and/or mitigation measures.

What should you do?

- Please read the document. Additional copies of this document, as well as the related technical studies, are available for review at Caltrans' District 3 offices located at 703 B Street, Marysville, CA 95901 and at the locations listed below.

Sutter County Library (Sutter Branch):

2147 California Street
Sutter, CA 95982

Sutter County Library (Main Branch):

750 Forbes Avenue
Yuba City, CA 95991

- We'd like to hear your thoughts. If you have any comments regarding the proposed project, please send your written comments to Caltrans by the deadline stated below.

Submit comments via postal mail to: Caltrans District 3, Attn: Dustin Miller, North Region Office of Environmental Support, 703 B Street, Marysville, CA 95901

- Submit comments via email to: dustin.miller@dot.ca.gov
- Be sure to submit comments by the deadline: **June 30, 2016**
- Attend the public hearing. A public hearing will be held to present the project and solicit comments on the IS/proposed MND. **The open house will be on June 21, 2016 from 5:00 to 7:00 p.m. at Sutter Union High School, 2665 Acacia Avenue, Sutter, California, 95982.**

What happens next?

After comments are received from the public and reviewing agencies, Caltrans may 1) give environmental approval to the proposed project, 2) conduct additional environmental studies, or 3) abandon the project. If the project is given environmental approval and funding is appropriated, Caltrans could design and construct all or part of the project.

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Mitigated Negative Declaration

June 2016

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Submitted Pursuant to (State) Division 13, California Resource Code

THE STATE OF CALIFORNIA

Department of Transportation

5-26-16

Date of Approval

Sue Bauer

Sue Bauer, Acting Office Chief
North Region Environmental Services - South
(530) 741-4393

Summary and Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) is proposing a Resurfacing, Restoration, and Rehabilitation (3R) project to upgrade State Route (SR) 20 to meet current design standards and extend its service life. The proposed project would consist of pavement rehabilitation and shoulder widening on SR 20 between post miles (PMs) 5.0 and 11.3 in Sutter County. The proposed project would also replace the existing bridge over the Wadsworth Canal. The purpose of the project is to bring this section of SR 20 up to current Caltrans standards.

Determination

This proposed Mitigated Negative Declaration (MND) is included to give notice to interested agencies and the public that it is the Caltrans' intent to adopt a MND for this project. This does not mean that the Caltrans' decision regarding the project is final. This MND is subject to change based on comments received by interested agencies and the public.

Caltrans has prepared an initial study for this project and, pending public review, expects to determine from this study that the proposed project would not have a significant effect on the environment for the following reasons:

- The project would have no effect on aesthetics, cultural resources, land use and planning, mineral resources, population and housing, public services, recreation, and utilities and service systems.
- The project would have a less-than-significant effect on agricultural resources, air quality, geology and soils, hazardous materials, hydrology and water quality, noise, and transportation and traffic.
- With the following mitigation measures incorporated, the proposed project would have less-than-significant effects on biological resources:
 - Permanent impacts on waters of the United States/waters of the State (non-giant garter snake aquatic habitat) would be mitigated by purchasing credits at an U.S. Army Corps of Engineers-approved mitigation bank.
 - Permanent and temporary loss of giant garter snake habitat would be mitigated by purchasing credits at an U.S. Fish and Wildlife Service-approved mitigation bank.
 - Permanent loss of suitable foraging habitat for Swainson's hawk would be mitigated by providing offsite habitat management lands at a 1:1 ratio (habitat preserved: habitat removed) or as required by the California Department of Fish and Wildlife.

Sue Bauer, Acting Office Chief
North Region Environmental Services - South
(530) 741-4393

Date

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List of Abbreviated Terms

3R	Resurfacing, Restoration, and Rehabilitation
AB	Assembly Bill
ACMs	asbestos-containing materials
ADL	aerially deposited lead
ARB	California Air Resources Board
BSA	biological study area
Cal/EPA	California Environmental Protection Agency
Cal/OSHA	California Division of Occupational Safety and Health
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CH ₄	methane
CIH	Certified Industrial Hygienist
CNPS	California Native Plant Society
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
CRPR	California Rare Plant Rank
CWA	Clean Water Act
Delta	Sacramento-San Joaquin River Delta
DSA	Disturbed Soil Area
DTSC	Department of Toxic Substances Control
EBC	East Borrow Canal
ESAs	Environmentally Sensitive Areas
FHWA	Federal Highway Administration
FMMP	Farmland Mapping and Monitoring Program
FPPA	Farmland Protection Policy Act
FRAQMD	Feather River Air Quality Management District
GHG	greenhouse gas
HMA	hot mix asphalt
IS	Initial Study
IS/MND	Initial Study/proposed Mitigated Negative Declaration
LEDPA	least environmentally damaging practicable alternative
LSAA	Lake or Streambed Alteration Agreement
MMRP	mitigation monitoring and reporting program
MND	Mitigated Negative Declaration
MS4	municipal separate storm sewer systems

MSA	Management and Conservation Act
N ₂ O	nitrous oxide
NEPA	National Environmental Policy Act
NES	Natural Environment Study
NESHAPs	National Emissions Standards for Hazardous Air Pollutants
NHTSA	National Highway Traffic Safety Administration
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NSSP	Non-standard Standard Special Provision
OSHA	Occupational Safety and Health Administration
PAHs	polycyclic aromatic hydrocarbons
PCMS	Portable changeable message signs
PMs	post miles
Porter-Cologne Act	California's Porter-Cologne Water Quality Control Act
PS&E	Plans, Specifications, and Estimates
RCRA	Resource Conservation and Recovery Act of 1976
ROW	right-of-way
RSP	rock slope protection
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SHOPP	State Highway Operation and Protection Program
SR	State Route
SWMP	Storm Water Management Plan
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TCE	temporary construction easement
TMDLs	Total Maximum Daily Loads
TMP	transportation management plan
TWW	Treated wood waste
U.S. EPA	United States Environmental Protection Agency
USACE	U.S. Army of Engineers
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WDRs	waste discharge requirements

Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) is proposing a Resurfacing, Restoration, and Rehabilitation (3R) project to upgrade State Route (SR) 20 to meet current design standards and extend its service life. The proposed project would consist of pavement rehabilitation and shoulder widening on SR 20 between post miles (PMs) 5.0 and 11.3 in Sutter County. The proposed project would also replace the existing bridge over the Wadsworth Canal. The purpose of the project is to bring this section of SR 20 up to current Caltrans standards.

The proposed project is scheduled to begin construction in April 2019 and end in December 2020. Construction activities associated with project components would generally occur Monday through Friday. Some nighttime paving and structures work is anticipated in order to meet work window requirements.

Caltrans is the state lead agency for the proposed project. Caltrans has determined that preparation of an Initial Study/Proposed Mitigated Negative Declaration (IS/Proposed MND) would ensure compliance with the California Environmental Quality Act (CEQA) on all environmental issues associated with the proposed project. An MND is proposed because it has been determined that, with implementation of avoidance, minimization and mitigation measures, the proposed project would not result in a significant effect on the environment (see the CEQA checklist provided in Appendix A).

This IS/Proposed MND is being circulated for public and agency review as required by CEQA. Because state agencies will act as responsible or trustee agencies, Caltrans has submitted the IS/Proposed MND to the State Clearinghouse for distribution and a 30-day review. Comments on the IS/Proposed MND will be evaluated, and responses will be prepared to address any substantial evidence that the proposed project may significantly affect the environment. If no such substantial evidence is indicated by the information and analysis presented in the IS/Proposed MND or in the comments received, the MND would be adopted by Caltrans.

1.2 Project Funding

This project is programmed under the State Highway Operation and Protection Program (SHOPP) 201.120 Roadway Rehabilitation Program, using state and federal funds. Project construction capital costs are estimated at \$25 million.

1.3 Lead Agency Name, Address and Contact Person

Lead Agency: California Department of Transportation
Address: 703 B Street, Marysville, CA 95901
Contact Person: Dustin Miller, North Region Office of Environmental Support
(530) 741-4191
dustin.miller@dot.ca.gov

1.4 Project Location

The proposed project occurs along a 6.3-mile segment of SR 20 in Sutter County from PM 5.0 to PM 11.3 (Figure 1). SR 20 is the primary east-west connection through the County. The project location is approximately 1.3 miles east of the Town of Sutter. The western end of the project area starts at West Butte Road (just east of the Sutter Bypass Bridge) and extends eastward to Lytle Road (Figure 2). The project area encompasses both state highway right-of-way (ROW) and private property. Adjacent land uses along SR 20 include orchards (walnut, almond, and olive), fields (row crops, fallow fields, and rice), and private businesses.

The proposed project is located on the Sutter Buttes and Sutter U.S. Geological Survey (USGS) 7.5-minute quadrangles in Sections 14 and 13 in Township 15 North, Range 1 East; and Sections 18, 17, 16, 20, 15, 22, 14, and 23 in Township 15 North, Range 2 East (Mt. Diablo Meridian). The approximate coordinates for the western end of the project area are 39.148218° North, -121.826166° West; the east end coordinates are 39.141705° North, -121.713318° West (WGS84/NAD83 datum).

1.5 Purpose and Need

The purpose of the proposed project is to upgrade the roadway geometrics to current Caltrans standards and extend SR 20's service life. The proposed project is needed because the existing vertical alignment and shoulder widths do not meet current design standards; the existing pavement is exhibiting signs of distress and will further deteriorate without action.

1.6 Project Description

The proposed project consists of widening SR 20 and removing and demolishing the existing Wadsworth Canal Bridge and constructing a new structure along the north side of the existing bridge. A description of project build alternatives is provided below followed by an overview of the primary project components.

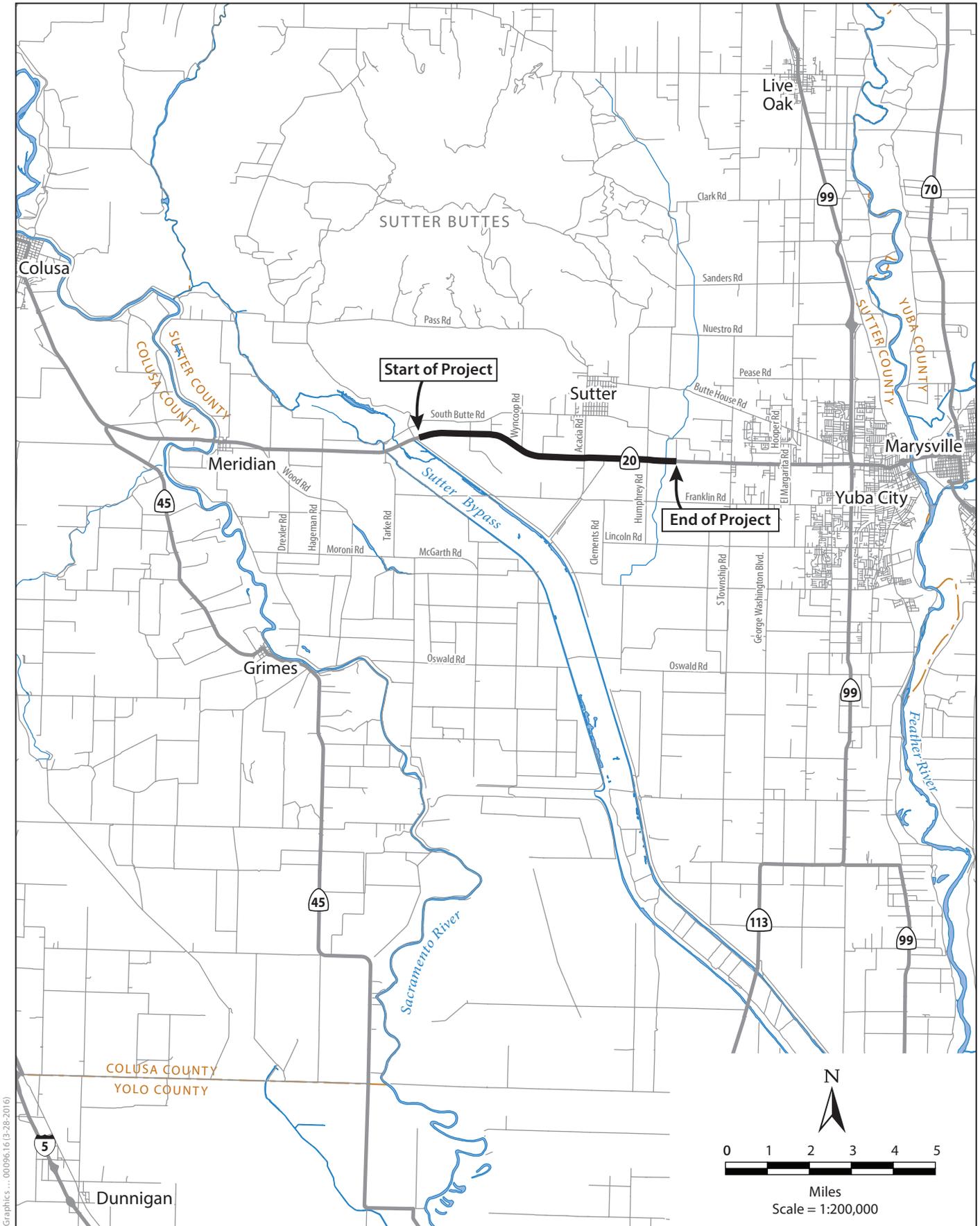
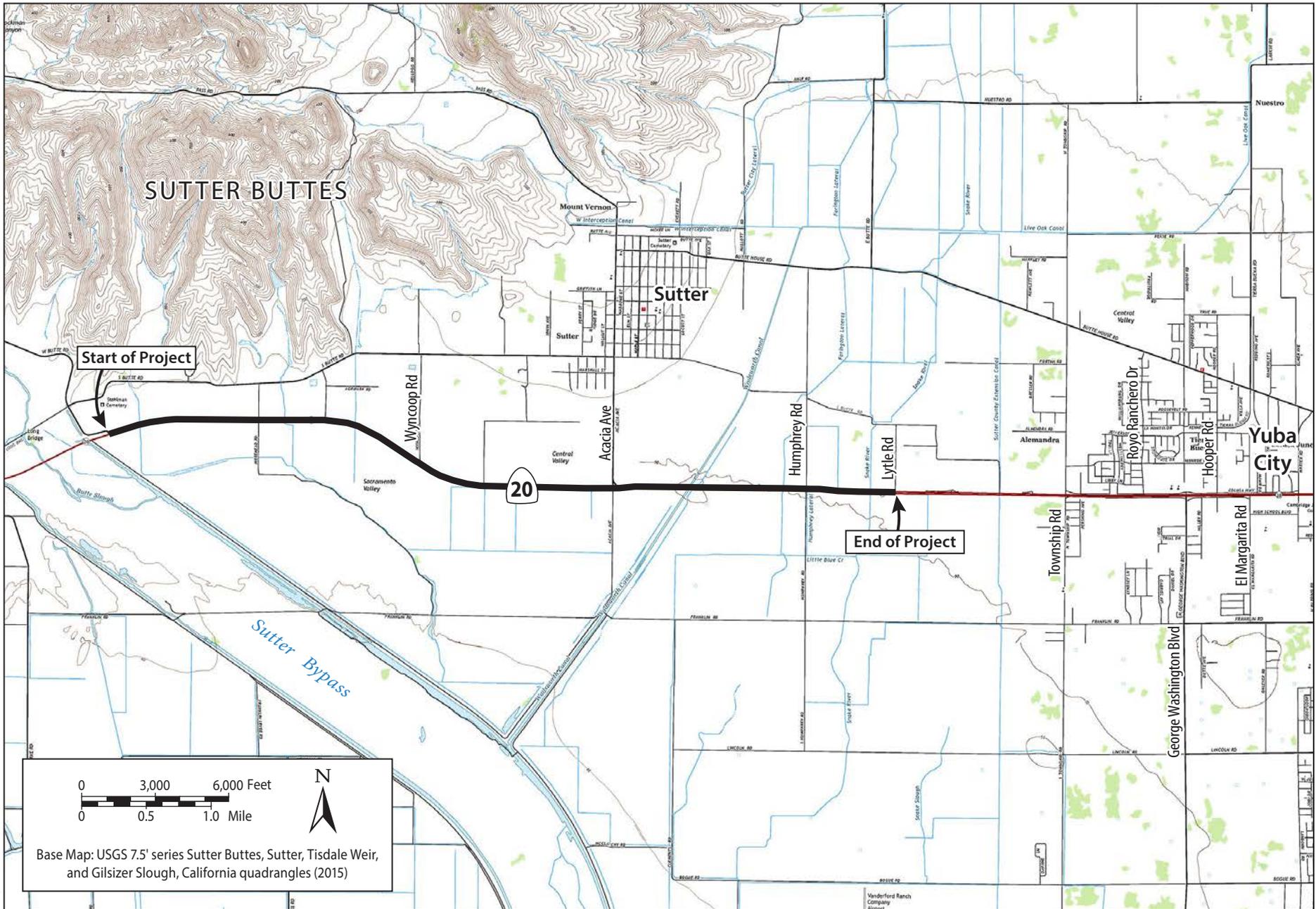


Figure 1
Project Location



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Figure 2
Topographic Map

1.6.1 Build Alternatives

In addition to a “No Project Alternative”, Caltrans identified three build alternatives that would involve widening SR 20 and widening or replacing the bridge over Wadsworth Canal (referred to as “Alternative 1”, “Alternative 2”, and “Alternative 3”). Alternatives 1, 2, and 3 propose to replace or rehabilitate pavement, and widen shoulders along SR 20. Alternatives 1 and 2 involve widening or replacing Wadsworth Canal Bridge in the existing location and Alternative 3 involves replacing the Wadsworth Canal Bridge with a new bridge north of the existing bridge. The existing bridge would be removed upon completion of the new bridge.

The proposed project analyzed in this IS/Proposed MND is Alternative 3 (Alignment B1 with a new bridge constructed north of the existing bridge). Caltrans determined that Alternative 3 is the preferred alternative because the original bridge was built in the 1920s and is considered functionally obsolete. The existing bridge has visible signs of corrosion, rust, and other deficiencies (including being potentially seismically deficient). In addition, widening of the existing bridge associated with Alternative 1 could have greater traffic control implications during construction activities. Alternative 2 was eliminated from further consideration because the alternative would have major impacts to traffic and has poor constructability issues associated with staging of construction and the need for long term one-way controlled traffic.

Each of the alternatives is described below and road widening Alignments A1 and B1 are shown in Appendix B.

1.6.1.1 Alternative 1 (Alignment A1)

Alternative 1 involves widening SR 20 (Alignment A1) and widening the existing Wadsworth Canal Bridge at its current location (replacing the deck in place). As part of this alternative, a new bridge deck would be constructed at a 1.5% cross slope to match the existing edge of deck grades. The existing main bent cap reinforcement would be butt-spliced in the field. Widening of the Wadsworth Canal Bridge under this alternative would not require the installation of new piers.

1.6.1.2 Alternative 2 (Alignment A1)

Alternative 2 involves the widening of SR 20 (Alignment A1) and replacing the existing Wadsworth Canal Bridge in place and along the same alignment. Alternative 2 road widening would follow Alignment A1. As part of this alternative, existing piles at piers 2, 3, and 4 would be removed to 3-feet below the original ground surface, new piles constructed, and a new bridge deck would be constructed at a 2.0% cross slope. Construction would be staged and require alternating closure of eastbound and westbound lanes.

1.6.1.3 Alternative 3 (Alignment B1)

Alternative 3 involves widening SR 20 (Alignment B1) and removing the existing bridge and constructing a new structure along the north side of the existing bridge. The road widening associated with Alternatives 3 is the same as Alternatives 1 and 2 except for a 4,800-foot-long segment. Alternative 3 (Alignment B1 diverges) from Alternatives 1 and 2 (Alignment A1) at a

point approximately 250 feet east of Acacia Avenue (see Appendix B). At this point, Alignment B1 diverges to the north and rejoins the Alignment A1 approximately 4,800 feet to the east.

The new Wadsworth Canal Bridge would be approximately 42 feet wide and 182 feet long. The proposed new bridge would be a slab on piles. The new bridge would have two abutments and four piers (Piers 2, 3, and 4 would be installed within the canal wetted portion of the channel). The existing bridge's concrete piling would be removed 3 feet below the original ground.

1.6.2 Pavement Rehabilitation and Shoulder Widening

As part of the proposed project, Caltrans would rehabilitate the existing pavement and widen the shoulders to an 8 foot standard. Starting at the western end of the project at PM 5.0, the new roadway would tie into the existing road near West Butte Road (just east of the Sutter Bypass Bridge) (Appendix B). As the proposed alignment (Alignment B1) proceeds east, starting at PM 9.4, the proposed new centerline alignment would start moving north of the current roadway. After crossing the Wadsworth Canal Bridge (described below), the new centerline alignment would continue north of the current SR 20 alignment until PM 10.0. After PM 10.0, the new alignment would realign with the current SR 20 alignment until the project ends at Lytle Road near PM 11.3. This project component would involve the following elements.

- Perform dig outs and repairing pavement at locations of severe failure.
- Seal cracks of existing pavement.
- Widen eastbound and westbound shoulders to 8 feet.
- Upgrade dike to Type E safety shape.
- Replace shoulder backing.
- Overlay highway with hot mix asphalt (HMA).
- Grade slopes to 4:1 or flatter, where possible.
- Replace culverts and placing rock slope protection (RSP), as needed.
- Extend reinforced box culverts.
- Relocate utilities and other fixed objects that occur in the work area.

1.6.3 Wadsworth Canal Bridge Replacement

Wadsworth Canal Bridge (Bridge No.18-0003) was built in 1920 and widened in 1959. This project component involves constructing a new bridge structure just north of the current bridge (Alternative 3 described above). The existing bridge would be removed once the new bridge is built. As discussed above, replacement of the Wadsworth Canal Bridge is Caltrans' preferred alternative (part of Alternative 3).

Construction would involve driving piles (impact driven) at the piers and abutments. Prior to any pile driving activities, the work area within the canal would be dewatered and the contractor would determine the method of dewatering. Caltrans anticipates that sheet pile cofferdams

would most likely be used. Caltrans estimates that approximately 400 square feet of area around each pier (Piers 2, 3 and 4) would need to be dewatered prior to installing the piers.

1.6.4 Construction Approach

1.6.4.1 Work Area

The project work area consists of Caltrans existing easement and additional temporary construction easements (TCEs) shown in the layout sheets in Appendix B. All road and bridge construction activities, including equipment staging areas and work area access, would be confined to Caltrans' existing easements and the TCEs as shown in the layout maps.

1.6.4.2 Right of Way Preparation

The project designated work area would be cleared of any obstacles or debris prior to construction. Clearing, cutting, and trimming of vegetation would be minimized whenever possible.

1.6.4.3 Temporary Stream Crossing or Diversion

If water is present in the waterways during construction, dewatering would be required in order to minimize potential impacts on aquatic resources and associated fish and wildlife habitat. Dewatering plans are typically developed during construction submittals. The Caltrans *Project Planning and Design Guide and the Construction Site Best Management Practices Manual*, would be used to develop the Clear Water Diversions (NS-5).

1.6.4.4 Site Restoration

The project work area would be restored by removing any construction debris and grading to original grade and contour according to guidance from the various landowners. The beds and banks of roadside ditches, canals, and irrigation ditches affected during construction would be returned to preconstruction condition and seeded (where necessary) with an appropriate seed mix.

1.7 Permits and Approvals Needed

Table 1 identifies the agencies that Caltrans is or will be coordinating with to obtain permits or approvals for the proposed project.

Table 1. Permits and Approvals Needed

Agency	Permit/Approval	Status
U.S. Army Corps of Engineers	Section 404 authorization for fill of waters of the United States	Permit application will be submitted after environmental document approval
Central Valley Regional Water Quality Control Board	Section 401 Water Quality Certification	Application will be submitted after environmental document approval
State Water Resources Control Board	Section 402 coverage under the NPDES Construction General Permit (Order No. 2009-0009-DWQ)	Part of construction contract
U.S. Fish and Wildlife Services	Endangered Species Act Section 7: Consultation and Incidental Take Statement	Caltrans is in consultation
National Marine Fisheries Service	Endangered Species Act Section 7: Consultation and Issuance of a Letter of Concurrence	Caltrans is in consultation
California Department of Fish and Wildlife	California Fish and Game Code Section 1602: Lake or Streambed Alteration Agreement	Permit application will be submitted after environmental document approval
California Department of Fish and Wildlife	California Fish and Game Code Section 2081: Incidental Take Permit	Caltrans is in consultation

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

Caltrans prepared a variety of technical studies and evaluated the potential effects of the proposed project on environmental factors using the CEQA Initial Study (IS) checklist (contained in Appendix A). Based on the IS checklist, Caltrans determined that the project would have minimal or no effect on aesthetics, air quality, cultural resources, geology and soils, land use and planning, mineral resources, population and housing, public services, recreation, and utilities and service systems. These environmental factors are not discussed further in this chapter.

Caltrans conducted additional studies and determined that the proposed project could have potential significant effects that warrant additional evaluation on agricultural resources, climate change, biological resources, hazardous materials, hydrology and water quality, noise, and transportation and traffic. These environmental factors are further evaluated in this chapter.

2.1 Human Environment

2.1.1 Agriculture and Forest Resources

2.1.1.1 Regulatory Setting

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.

2.1.1.2 Affected Environment

According to the California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP), land within the project area is classified as Farmland of Statewide Importance, Prime Farmland, and Grazing Land. Table 2 below shows the acres of farmland that would be acquired under the proposed project.

Table 2. Farmland Acquisition

FMMP Categories	Impact Acreages
Farmland of Statewide Importance	1.39
Grazing Land	0.48
Other Land	1.73
Prime Farmland	1.77
Urban and Built-up Land	0.65
Total	6.02

2.1.1.3 Environmental Consequences

Implementing the proposed project would involve widening and rehabilitating 6.3 miles of SR 20. The conversion of private land not currently used for transportation purposes to transportation ROW for the proposed project would require easements. Proposed project improvements requiring temporary construction disturbance and temporary and permanent easements would affect lands within the project area that the FMMP maps as Farmland of Statewide Importance, Prime Farmland, and Grazing Land.

Several parcels in the project area are enrolled in Williamson Act contracts. There are two enrolled parcels located within the proposed project alignment (ICF International 2016a). Under the proposed project, approximately 4,600 square feet of land would be acquired from APN 13-270-039 and 30,000 square feet of land would be acquired from APN 13-270-003.

A land evaluation and site assessment was performed because Prime Farmland and Farmland of Statewide Importance would be converted to expand the SR 20 ROW. The scoring of the site in Form AD-1006 finds the acquisition of 6.02 acres of farmland not to be substantial (110 points out of 260 points), largely due to the location of the minor acquisitions on each parcel along SR 20 and the small size of the affected area relative to the rest of the parcel. With acquisition as proposed, the rest of each parcel could continue to be used for agricultural purposes.

The proposed project would not affect any timberlands.

2.1.1.4 CEQA Considerations

The proposed project would result in less than significant impacts to farmlands and Williamson Act properties.

2.1.1.5 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization and/or mitigation measures are required for Farmland or Williamson Act properties.

2.1.2 Transportation/Traffic

2.1.2.1 Affected Environment

The information contained in this section is based on data contained in Caltrans' Transportation Management Plan Data Sheet (California Department of Transportation 2015c). SR 20 is the principal east-west corridor between SR 99 and Interstate 5, located west of the county. It is a two- four- and six-lane highway which extends through Sutter County from Colusa County to Yuba County. It is a designated truck route between PM R0.00 to PM 17.06. Currently, the existing vertical alignment and shoulder widths do not meet Caltrans standards, and the existing pavement is exhibiting signs of distress.

Yuba-Sutter Transit provides bus service in the general vicinity, however none of the nearby bus routes travel along the portion of SR 20 in the project area. Given the rural location of the proposed project, the large distances between destination points in the study area, and the lack of formal facilities such as sidewalks and bicycle lanes, bicycle and pedestrian travel is not a common mode of transportation.

2.1.2.2 Environmental Consequences

The proposed project would include resurfacing, restoration and rehabilitation of a 6.3-mile segment of SR 20 in unincorporated Sutter County. The proposed project would widen shoulders and replace the bridge over the Wadsworth Canal to bring this section of SR 20 up to current Caltrans standards. The project would not add any additional capacity to the roadway.

During the construction phase, short-term closures of one lane of the existing bridge and roadway may be required, but would not preclude travel along SR 20 for extended periods. Delays at one-way traffic control sections would not exceed maximum allowable delays for traffic conditions based on Caltrans standards. Caltrans will implement a transportation management plan (TMP) during construction. The TMP will include a public outreach campaign and portable changeable message signs to alert local residents and travelers of any lane or shoulder closures, in addition to other TMP measures as listed in the project description above and in measures described below.

2.1.2.3 CEQA Considerations

The proposed project would result in less than significant impacts on transportation and traffic.

2.1.2.4 Avoidance, Minimization, and/or Mitigation Measures

No mitigation is required. However, as part of project construction, Caltrans will prepare and, in conjunction with the construction contractor, implement a transportation management plan to avoid and minimize potential impacts on traffic. The final TMP may include the following elements:

- On SR 20, one paved traffic lane shall be open for use by public traffic with one-way traffic control using flaggers. Lane and shoulder closures will be allowed during daytime hours on weekdays, but may be restricted during peak commute hours.

- Whenever one-way traffic control is maintained, traffic may be stopped for short periods, after which accumulated traffic shall pass through before another closure is made.
- For construction between PM 10.8/11.3 (Humphrey Road to Lytle Road)), one lane in each direction of travel must remain open at all times. No lane closures will be allowed during peak hours on weekdays.
- K-rail shall be secured in place prior to allowing traffic on the bridge when bridge rail has been replaced.
- When closures occur inside or near an intersection, flaggers will need to be deployed to control all legs of the intersection.
- No lane closures or other traffic restrictions will occur on designated legal holidays and the day preceding designated legal holidays; and when construction operations are not actively in progress.
- Access to cross streets shall be maintained during construction.
- Coordinating with projects adjacent to or within the limits of this project will be required to avoid conflicts.
- Public outreach will be provided for the construction phase of this project.
- Work at this location may include the assistance of construction zone enhanced enforcement program but not a full time presence.
- Portable changeable message signs (PCMS) will be used during construction for each lane or shoulder closure.
- Detailed lane closure charts will be developed for the final TMP prior to Plans, Specifications, and Estimates (PS&E).

2.2 Physical Environment

2.2.1 Hydrology and Water Quality

2.2.1.1 Regulatory Setting

Federal

Clean Water Act

In 1972, Congress amended the federal Water Pollution Control Act, making the addition of pollutants to waters of the United States from any point source¹ 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 CWA. Congress has amended the act several times. In the 1987 amendments, Congress directed dischargers of stormwater from municipal

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

and industrial/construction point sources to comply with the NPDES permit program. The following are important CWA 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 United States 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 NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the United States. RWQCBs administer this permitting program in California. Section 402(p) requires permits for discharges of stormwater 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 United States. This permit program is administered by USACE.

The goal of the CWA is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”

USACE 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 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 USACE’s Standard Permits. There are two types of Standard Permits: Individual Permits and Letters of Permission. For Standard Permits, the USACE decision to approve is based on compliance with EPA’s Section 404 (b)(1) Guidelines (40 CFR § 230), and whether the permit approval is in the public interest. The Guidelines were developed by EPA in conjunction with USACE and allow the discharge of dredged or fill material into the aquatic system (waters of the United States) only if no practicable alternative exists that would have less adverse effects. The Guidelines state that USACE may not issue a permit if there is a least environmentally damaging practicable alternative to the proposed discharge that would have lesser effects to waters of the United States and not cause 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 effluent² standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause “significant degradation” to waters of the United States. In addition, every permit from the USACE, even if not subject to the Guidelines, must meet general requirements. See 33 CFR Part 320.4.

² The EPA defines *effluent* as “wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall.”

State

Porter-Cologne Water Quality Control Act

California's Porter-Cologne Water Quality Control Act (Porter-Cologne Act), enacted in 1969, provides the legal basis for water quality regulation in 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. The act predates the CWA and regulates discharges to waters of the state. Waters of the state include more than just waters of the United States, such as groundwater and surface waters not considered waters of the United States. Additionally, the Porter-Cologne Act prohibits discharges of "waste" as defined and this definition is broader than the CWA 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 CWA.

The State Water Board and RWQCBs are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA, and for regulating discharges to ensure compliance with the water quality standards. Details about water quality standards in a project area are included in the applicable RWQCB Basin Plan. In California, the RWQCBs designate beneficial uses for all water body segments and then set the 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 Board identifies waters failing to meet standards for specific pollutants. These waters are then state-listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and that the standards cannot be met through point source or non-point source controls (NPDES permits or WDRs), the CWA requires 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 Board administers water rights, sets water pollution control policy, issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, TMDLs, and NPDES permits. RWQCBs 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 Program

Municipal Separate Storm Sewer Systems

Section 402(p) of the CWA requires issuance of NPDES permits for five categories of stormwater discharges, including 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 stormwater, that is designed or used for collecting or conveying stormwater." The State Water Board has identified Caltrans as an

owner/operator of an MS4 under federal regulations. Caltrans' MS4 Permit covers all Caltrans rights-of-way, properties, facilities, and activities in the state. The State Water Board or the RWQCB issues NPDES permits for 5 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 stormwater and non-stormwater discharges; and
3. Caltrans' stormwater discharges must meet water quality standards through implementation of permanent and temporary (construction) BMPs, to the maximum extent practicable, and other measures the State Water Board determines necessary to meet the water quality standards.

To comply with the permit, Caltrans developed the statewide Storm Water Management Plan (SWMP) to address stormwater pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within Caltrans for implementing stormwater management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The SWMP describes the minimum procedures and practices Caltrans uses to reduce pollutants in stormwater and non-stormwater discharges. It outlines procedures and responsibilities for protecting water quality, including selection and implementation of BMPs. Further, in recent years, hydromodification control requirements and measures to encourage low impact development have been included as a component of new development permit requirements. The proposed project will be programmed to follow the guidelines and procedures outlined in the latest SWMP to address stormwater runoff.

Construction General Permit

Construction General Permit (Order No. 2009-009-DWQ), adopted on September 2, 2009, became effective on July 1, 2010. The Construction General Permit was amended by 2010-0014-DWQ and 2012-0006-DWQ on February 14, 2011 and July 17, 2012, respectively. The permit regulates stormwater 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 stormwater discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least 1 acre must comply with the provisions of the Construction General Permit. Operators of regulated construction sites are required to develop Storm Water Pollution Prevention Plans (SWPPPs); 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 and whether the receiving water has been designated by the SWRCB as sediment-sensitive. SWPPP requirements vary according to the risk level. For example, a Risk Level 3 (highest risk) project would require compulsory stormwater runoff pH and turbidity monitoring and certain BMPs, and in some cases, 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 SWPPP. In accordance with Caltrans' Standard Specifications, a Water Pollution Control Program rather than a SWPPP is necessary for projects with a DSA of less than 1 acre.

Section 401 Permitting

Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to a water of the United States 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 a 401 Certification are CWA Section 404 permits issued by USACE. The 401 Certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before USACE issues a Section 404 permit.

In some cases, the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may issue a set of requirements known as 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. WDRs can be issued to address both permanent and temporary discharges of a project.

2.2.1.2 Affected Environment

The affected environment and subsequent analysis for hydrology and water quality is based on the following reports.

- *Long Form – Storm Water Data Report, 03-1A920K*. (California Department of Transportation undated)
- *Water Quality Assessment, 03-1A920* (2015a California Department of Transportation 2016d)
- *Preliminary Hydraulic Report, Wadsworth Canal Bridge* (California Department of Transportation 2013)
- *Floodplain Hydraulics Study, Sut-20, 03-1A920* (California Department of Transportation 2015b)

The project area is within the Lower Feather (Hydrologic Unit Code 18020106) hydrologic unit. It drains to the Sacramento River at its southern end.

Within the project area, erosion from stormwater runoff is the dominant natural erosion process. Based on Natural Resources Conservation Service soil survey data, the susceptibility of the project area soils to sheet and rill erosion is generally slight.

2.2.1.3 Environmental Consequences

This project would result in an increase of impervious area and therefore could increase the volume and velocity of stormwater runoff to downstream receiving water bodies. In addition, pollutant loading could also increase.

Potential Water Quality Impacts

During construction, potential water quality impacts include sediment-laden discharge from DSAs and pollutant-laden discharge from storage or work areas. Temporary impacts could also result from construction near or within water bodies. Permanent impacts on water quality could result from the addition of impervious area; this additional impervious area prevents runoff from infiltrating into the ground, resulting in increased runoff. The additional runoff has the potential to transport an increased amount of sediment and pollutants to waterways and water resources and create increased scour in drainage ways.

Suspended Particulates (Turbidity)

Sources of sediment that could result in increases in turbidity in receiving waters include uncovered or improperly covered active and inactive stockpiles, unstabilized slopes and construction staging areas, and construction equipment not properly cleaned. Concentrated runoff resulting from addition of impervious area could result in the direct discharge of sediment-laden flow from the roadway to receiving water bodies.

Oil, Grease, and Chemical Pollutants

Heavy metals associated with vehicle tire and brake wear, oil and grease, and exhaust emissions are the primary pollutants associated with transportation corridors. Generally, highway stormwater runoff has the following pollutants: total suspended solids, nitrate nitrogen, total Kjeldahl nitrogen, phosphorus, ortho-phosphate, copper, lead, and zinc. The pollutants are dispersed from tree leaves, combustion products from fossil fuels, and the wearing of brake pads and tires. The project could also result in increased deposition of particulates due to increased traffic loads throughout the corridor.

Circulation or Drainage Pattern Changes

The proposed project could result in the modification of existing ditches, modification or relocation of existing longitudinal drainage structures, extension or relocation of existing cross culverts, and construction of new drainage structures such as cross drains, ditches and swales.

The goal of the project drainage design would be to maintain existing drainage patterns. Existing culvert diameters, slopes, and elevations would be determined using as-built record drawings, survey data, field observation, or maintenance records. The project drainage systems would be designed to route flows to and from the permanent stormwater treatment BMPs.

The additional impervious area created by the project may also result in impacts, including increases in flow and peak flow velocity and volume on receiving water bodies. The increase in

impervious areas from the project would result in additional runoff to downstream and off-site drainage systems and cross culverts. To address any increases in runoff resulting from increases in impervious areas and to prevent potential velocity increases, sediment control or design pollution prevention BMPs and other measures would be implemented as part of the project. For example, ditches or swales would be placed to convey roadway runoff to existing crossings or creeks. To prevent the concentration of flows and promote sheet flow, permanent fiber rolls would be placed along slope contours. To construct the project, some slopes within the project limits would be modified. Concentrated flows would be managed by rounding and shaping slopes and would be collected in new or modified stabilized drains or channels. Additional design pollution prevention BMPs and proposed treatment BMPs are discussed further below.

Accelerated Erosion and Sedimentation

The increase in impervious area could result in the modification of receiving water bodies by increasing flow volumes and peak flow rates (hydromodification). These hydromodification effects could cause increased bed and bank erosion, loss of habitat, increased sediment transport and deposition, and increased flooding. To prevent downstream scour and erosion, various measures such as erosion control and runoff detention BMPs would be implemented, as required by the Construction General Permit. Flared-end sections with rock slope protection would be placed at culvert outfalls to avoid or minimize erosion of slopes or ditches. To stabilize slopes, such measures as erosion control seeding and mulching, erosion control blankets, and compost may be employed, depending on the design prepared by the Qualified SWPPP Developer that prepares the project SWPPP.

Construction Activities

Earth-moving and other construction activities could cause minor accelerated runoff and soil erosion and subsequent sediment delivery to the drainage systems along the project corridor during construction, which could temporarily affect receiving water quality. During construction, temporary drainage facilities may be required to redirect runoff from work areas. Unless erosion and sediment control and runoff management BMPs are properly implemented, sediment-laden flow could result from runoff from DSAs, and could enter storm drainage facilities or directly discharge into receiving water bodies, increasing turbidity and decreasing the clarity and beneficial uses of the receiving water body.

Fueling or maintenance of construction vehicles would occur within the project site during construction, so there would be a risk of accidental spills or releases of fuels, oils, or other potentially toxic materials. An accidental release of these materials could pose a threat to water quality if contaminants enter storm drains, open channels, or surface water receiving bodies. The magnitude of the impact from an accidental release would depend on the amount and type of material spilled.

2.2.1.4 CEQA Considerations

The proposed project would result in less-than-significant impacts on hydrology and water quality.

2.2.1.5 Avoidance, Minimization, and/or Mitigation Measures

No mitigation is required. However, Caltrans will implement the following standard measures and related permit conditions as part of the project to avoid and minimize effects related to hydrology and water quality.

Required Temporary Best Management Practices

The design features to address water quality impacts are a condition of Caltrans' MS4 permit, Construction General Permit, and other regulatory agency requirements. Potential temporary impacts to water quality can be avoided or minimized by implementing standard BMPs, which will be consistent with the practices required under the Construction General Permit and Caltrans MS4 Permit and are intended to achieve compliance with the requirements of the permits. Based on the *Long Form – Storm Water Data Report* (California Department of Transportation undated), the proposed project is a Risk Level 2 project under the Construction General Permit; therefore, the SWPPP will specify minimum erosion and sediment control BMPs and monitoring of turbidity and pH at stormwater discharge points. Compliance with the requirements of these permits, the SWPPP, and adherence to the conditions, would reduce or avoid potentially significant construction-related impacts.

Required Permanent Pollution Prevention Design Measures

The project would involve more than 1 acre of added impervious area, and therefore appropriate treatment BMPs would need to be implemented for areas within Caltrans' ROW. The Caltrans MS4 Permit contains provisions to reduce, to the maximum extent practicable, pollutant loadings from the facility once construction is complete. The permit stipulates that permanent measures that control pollutant discharges must be considered and implemented for all new or reconstructed facilities. Permanent control measures located within Caltrans' ROW reduce pollutants in stormwater runoff from the roadway. These measures reduce the suspended particulate loads, and thus pollutants associated with the particles, from entering waterways. The measures required by the permit would be incorporated into the final engineering design or landscape design of the project and would take into account expected runoff from the roadway. In addition, the permit also stipulates that an operation and maintenance program be implemented for permanent control measures. This category of water quality control measures can be identified as including both design pollution prevention BMPs and treatment BMPs.

2.2.2 Hazards and Hazardous Materials

2.2.2.1 Regulatory Setting

Federal

The primary federal laws regulating to 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 CERCLA, often referred to as "Superfund," is to identify and clean up abandoned contaminated sites so that public health and

welfare are not compromised. RCRA provides for “cradle to grave” regulation of hazardous waste generated by operating entities. Other federal laws include the following.

- Community Environmental Response Facilitation Act of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act
- Atomic Energy Act
- Toxic Substances Control Act
- Federal Insecticide, Fungicide, and Rodenticide Act

In addition to the acts listed above, EO 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.

State

California regulates hazardous materials, waste, and substances under the authority of the California Health and Safety Code and is authorized by the federal government to implement RCRA in the state. California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, clean-up, and emergency planning of hazardous waste. The Porter-Cologne Act also restricts disposal of wastes and requires clean-up of wastes that are below hazardous waste concentrations but could affect groundwater and surface water quality. California regulations that address waste management and prevention and clean-up of 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 hazardous materials that may affect human health and the environment. Proper management and disposal of hazardous material is vital if it is found, disturbed, or generated during project construction.

2.2.2.2 Affected Environment

The affected environment and subsequent analysis for hazards and hazardous materials is based on the analysis documented in the Hazardous Waste Initial Site Assessment Memorandum (California Department of Transportation 2015a). The hazardous waste investigation was limited to a records review.

Aerially Deposited Lead

Aerially deposited lead (ADL) can be found in the surface and near-surface soils along nearly all roadways, including those in the proposed project area, because of the historical use of tetraethyl lead in motor vehicle fuels. Areas of primary concern are soils along routes that have had high

vehicle emissions from large traffic volumes or congestion during the period when leaded gasoline was in use (generally prior to 1986). Typically, ADL is found in shoulder areas and has high solubility when subjected to the low pH conditions of waste characterization tests. Shoulder soils along urban and heavily travelled rural highways are commonly above the soluble threshold limit concentration criteria. Therefore, it is possible that ADL exists within the State ROW due to historical use of leaded gasoline.

Yellow Traffic Stripes

Caltrans studies have determined that yellow/white thermoplastic striping and painted markings, such as those used within the proposed project area, may contain elevated concentrations of lead and chromium, depending on the age of the striping (manufactured before 2005) and painted markings (manufactured before 1997). Disturbing either yellow or white pavement markings by grinding, sandblasting, or heating can expose workers to lead and/or chromium.

Treated Wood Waste

Treated wood waste (TWW) can occur as posts along metal beam guard railings, beam barrier, piles, or roadside signs. These wood products are typically treated with preserving chemicals that may be hazardous (carcinogenic) and include but are not limited to arsenic, chromium, copper, creosote, and pentachlorophenol. The Department of Toxic Substances Control (DTSC) requires that TWW either be disposed as a hazardous waste, or if not tested, to assume that TWW is a hazardous waste.

Asbestos Containing Materials

The National Emissions Standards for Hazardous Air Pollutants (NESHAPs) (40 CFR 61[M]) and Federal Occupational Safety and Health Administration (OSHA) classify asbestos-containing materials (ACMs) as any materials or products that contain more than 1 percent asbestos. Nonfriable ACMs are classified by the NESHAPs as either Category I or II material, including materials sometimes found in bridges, rail shims, pipes, pipe coverings, expansion joint facings, and certain cement products.

Regulated ACMs, which are a hazardous waste when friable, are classified as any materials that contain more than 1 percent asbestos by dry weight and are any of the following.

- Friable (can be crumbled, pulverized, or reduced to powder by hand pressure);
- A Category I material that has become friable;
- A Category I material that has been subjected to sanding, grinding, cutting, or abrading; or
- A Category II nonfriable material with a high probability of becoming crumbled, pulverized, or reduced to a powder during demolition or renovation activities.

Activities that disturb materials containing any amount of asbestos are subject to certain requirements of the California Division of Occupational Safety and Health (Cal/OSHA) asbestos standard found in 8 CCR 1529. Typically, removal or disturbance of more than 100 square feet of materials containing more than 1 percent asbestos must be performed by a registered asbestos

abatement contractor, but associated waste labeling is not required if the materials contain 1% or less asbestos. When the asbestos content of materials exceeds 1%, virtually all requirements of the standard become effective.

Materials containing more than 1% asbestos are also subject to NESHAPs. Regulated ACMs (friable ACMs and nonfriable ACMs that will become friable during demolition operations) must be removed from structures before they are demolished. Certain nonfriable ACMs and materials containing 1% or less asbestos may remain in highway structures, such as guardrail and bridges, during demolition; however, waste handling/disposal issues and Cal/OSHA work requirements may make this cost-prohibitive. With respect to potential worker exposure, notification, and registration requirements, Cal/OSHA defines *ACMs* as construction materials that contain more than 1% asbestos (8 CCR 341.6).

The Wadsworth Canal Bridge was built in 1920 and widened in 1959. As-Built plans show expansion joints within the structure, shims in the metal bridge railing, and two 3.5 inch pipes attached to the girder between bents. Existing drainage concrete boxes and pipe culverts could also have ACMs.

2.2.2.3 Environmental Consequences

Humans and the environment could be exposed to hazardous conditions from the accidental release of hazardous materials during construction activities. Construction would involve the use of heavy equipment, involving small quantities of hazardous materials (e.g., petroleum and other chemicals used to operate and maintain construction equipment) that may result in hazardous conditions in the project area.

There is the potential for contamination associated with traffic or roadway maintenance through disturbing soils potentially contaminated with ADL, lead or chromium release through the removal of yellow traffic striping, TWW, and/or ACM, all of which could threaten the public, including worker health and safety.

2.2.2.4 CEQA Considerations

The proposed project would result in less-than-significant impacts related to hazards and hazardous materials.

2.2.2.5 Avoidance, Minimization, and/or Mitigation Measures

No mitigation is required. However, Caltrans will implement the following standard procedures as part of the project to avoid and minimize effects related to hazardous materials.

Develop and Implement Plans to Address Worker Health and Safety

As necessary, and as required by Caltrans and federal and state regulations, plans such as a health and safety plan, BMPs, and/or an injury and illness prevention plan will be prepared and implemented to address worker safety when working with potentially hazardous materials, including ADL, potential lead or chromium in traffic stripes, TWW, or ACM.

Perform Soil Testing and Dispose of Soils Contaminated with ADL Appropriately

Soil testing for ADL contamination will be conducted in the project area along SR 20 prior to construction work.

No excess soil is allowed to leave the project limits without first being tested for ADL. An ADL survey, sampling and testing is required prior to PS&E. Soils in the project limits identified as having hazardous levels of ADL will be disposed of or reused according to federal and state regulations. Soils within the ROW that contain hazardous waste concentrations of ADL may be reused under the authority of variances issued by the California Department of Toxic Substances Control. These variances include stockpiling, transporting, and reusing soils with concentrations of lead below maximum allowable levels in the project ROW. Stockpiling, transporting and reusing of soil will also be conducted following Caltrans' standard special provisions. As noted in California Code of Regulations Title 8 Section 1532.1, "Lead"; the specific SSP will be provided accordingly with the ADL survey findings and conclusions.

Conduct Sampling, Testing, Removal, Storage, Transportation, and Disposal of Yellow/White Traffic Striping along Roadway

As required by Caltrans' standard special provisions, the construction contractor will sample and test yellow/white traffic striping scheduled for removal to determine whether lead or chromium is present. The construction contractor will also implement a project specific lead compliance plan prepared by a Certified Industrial Hygienist (CIH) as required by Cal/OSHA

All aspects of the project associated with removal, storage, transportation, and disposal will be in strict accordance with appropriate regulations of the California Health and Safety Code. The stripes will be disposed of at a Class 1 disposal facility. These grindings (which consist of the roadway material and the yellow color traffic stripes) will be removed and disposed of in accordance with Standard Special Provision 15-1.03B (Residue Containing High Lead Concentration Paints) (http://www.dot.ca.gov/hq/env/haz/hw_sp.htm) which requires a Lead Compliance Plan.

Non-hazardous levels of lead are known to exist in the white traffic striping. As such, these grindings will be removed and disposed of in accordance with Standard Special Provision 15-2.02C(2) (Remove Traffic Stripes and Pavement Markings Containing Lead) to remove traffic stripes and pavement markings containing lead when the average lead concentrations are less than 1,000 mg/kg total lead and 5 mg/L soluble lead.

The responsibility of implementing this measure will be outlined in the contract between Caltrans and the construction contractor. Implementing this measure will minimize potential effects from these hazardous materials.

Treatment and Disposal of Treated Wood Waste

Current regulations allow for disposal of untested TWW in either a Class I hazardous waste landfill, or a composite-lined portion of a solid waste landfill unit that meets all requirements applicable to disposal of municipal solid waste and that is regulated by WDRs issued for

discharges of designated waste or TWW. TWW will be disposed of in accordance with Standard Special Provision 14-11.09 (Treated Wood Waste).

Conduct Asbestos Containing Materials Survey

The barrier rail shims (sheet packing) are to be treated as Category II, nonfriable asbestos-containing material (expected maximum concentration of 80% chrysotile, no friable in good condition). In addition, the expansion joints and pipes are also presumed to contain asbestos. Existing drainage concrete boxes and pipe culverts under the highway that will be widened or replaced will require an inspection and survey for ACM.

In order to avoid costly construction delays, an asbestos survey needs to be executed at least 5 to 6 months prior to PS&E.

The following provisions will be included in the construction contract:

- Non-standard Standard Special Provision (NSSP) 14-11.11 for Sampling and Removal of Asbestos Containing Materials – Asbestos Pipes is required.
- NSSP 4-9.02 for Air Quality – NESHAP Notification is required. Used for structural demolition.

The NESHAP regulation is enforced by U.S. EPA and, in California, by the Air Quality Control Boards (sometimes called Air Pollution Control Districts). In accordance with the County Air Quality Management District regulations (Rule 9.9), written notification to the District is required at least ten working days prior to commencement of any demolition/renovation activity (whether asbestos is present or not).

2.2.3 Noise

2.2.3.1 Regulatory Setting

CEQA requires a strictly baseline versus build analysis to assess whether a proposed project will result in a noise impact. If a proposed project is determined to cause a significant noise impact under CEQA, mitigation measures must be incorporated into the project unless those measures are not feasible.

Construction noise is regulated by Caltrans Standard Specifications Section 14-8.02, “Noise Control.” These requirements state, “*Do not exceed 86 dBA L_{max} at 50 feet from the job site activities from 9:00 p.m. to 6:00 a.m. Equip an internal combustion engine with the manufacturer-recommended muffler. Do not operate an internal combustion engine on the job site without the appropriate muffler.*”

Currently, Sutter County does not have a noise ordinance contained in its Code. The General Plan standards regulate noise for transportation noise sources, but not for construction. Therefore, the determination of impacts is based on the Caltrans Standard Specifications described above.

2.2.3.2 Affected Environment

The affected environment and subsequent analysis for noise is based on the Traffic Noise Analysis Memorandum (California Department of Transportation 2016e) prepared for the proposed project. The land uses within the project area consist mostly of agriculture with scattered rural residences. The nearest sensitive receptor is approximately 250 feet from the project area.

2.2.3.3 Environmental Consequences

The project would not result in operational or traffic noise impacts. During construction of the project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Construction activities include demolition of existing structures, building of new structures, roadway rehabilitation activities such as repaving, and implementation of detours.

Table 3 below summarizes noise levels produced by construction equipment that is commonly used on roadway construction projects. Construction equipment is expected to generate noise levels ranging from 70 to 90 dBA at a distance of 50 feet. Noise produced by construction equipment would drop off at a rate of about 6 dBA per doubling of distance.

Table 3. Construction Equipment Noise

Equipment	Maximum Noise Level (dBA at 50 feet)
Compressor (air)	80
Concrete Saw	90
Dump Truck	84
Jackhammer	85
Concrete Pump	82
Excavator	85
Impact Pile Driver	95-101

Source: Federal Transit Administration 2006.

In addition, widening the bridge over Wadsworth Canal may require pile driving. Pile driving can generate noise levels that reach 101 dBA Lmax at 50 feet. The nearest sensitive receptors are approximately 250 feet from the project area. These receptors may be subject to short-term noise levels reaching 87 dBA Lmax or higher generated by pile driving activities. Typical pile driving is done over a short period of time with a break in between each pile driving event. Pile driving would take place during daytime hours.

No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Caltrans Standard Specifications Section 14-8.02 and applicable local noise standards. Construction noise would be short term, intermittent, and overshadowed by local traffic noise.

2.2.3.4 CEQA Considerations

The proposed project would result in less-than-significant impacts related to noise.

2.2.3.5 Avoidance, Minimization, and/or Mitigation Measures

No mitigation is required. Construction will be conducted in accordance with Caltrans Standard Specifications Section 14-8.02 and applicable local noise standards. Although not required, implementing the following measures will minimize the temporary noise impacts from construction.

- Residents in the project area should be notified prior to the start of nighttime construction
- If feasible, nighttime construction should be limited to the portion of the project site furthest from residents.
- Limit operation of pile driver, jackhammer, concrete saw, pneumatic tools and demolition equipment to daytime hours.
- Prohibit unnecessary idling of internal combustion engines.

2.3 Biological Environment

The affected environment and subsequent analysis for biological resources is based on the Biological Assessment (California Department of Transportation 2016c), Natural Environment Study (NES) (ICF International 2016b), and the Aquatic Resources Delineation Report (ICF International 2016c) prepared for the proposed project. Potential biological resource issues associated with the proposed project were identified through review of existing information and field surveys conducted within the environmental study limit (also referred to as the biological study area [BSA]). In addition, the following studies and surveys were conducted to document biological resources in the BSA (shown in Appendix E) and identify potential impacts associated with the proposed project:

- General habitat evaluation to determine whether suitable habitat exists for special-status plant and animal species.

- Botanical field surveys to map land cover types, including natural communities, and survey for special-status plant species.
- Delineation of waters of the United States and waters of the State.
- Surveys for nesting migratory birds.
- An assessment of the Wadsworth Canal Bridge for bat roosting habitat.

Table 4 lists the surveys that were conducted to support this IS/Proposed MND analysis and the survey dates. Detailed survey methods can be found in the NES and Aquatic Resources Delineation Report.

Table 4. Biological Surveys and Dates

Survey Type	Survey Dates
Natural community mapping and botanical surveys	March 8, 9, 23, and 31, and May 3, 2016
Habitat-based assessment for special-status animal species	March 8, 9, and 29, and April 7, 2016
Aquatic resources delineation (waters of the United States and waters of the State)	March 8, 9, 23, and 31, 2016
Surveys for nesting migratory birds	March 18 and April 25, 2016
Wadsworth Canal Bridge bat roosting habitat assessment, acoustic surveys, and night-roosting surveys	March 8 and 29 and April 4, 5, and 6, 2016

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. 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.

The term *land cover type* is used in this document to refer to natural communities and developed or disturbed areas. There are 16 land cover types in the BSA that are listed in Table 5 and shown in Appendix E.

Table 5. Land Cover Types in the Biological Study Area

Land Cover Type	Acreage in the BSA
Cottonwood-willow woodland	2.13
Nonnative woodland	1.67
Scrub-shrub wetland*	0.53
Himalayan blackberry thicket	0.95
Emergent wetland*	2.13
Seasonal wetland*	2.26
Baltic rush meadow	1.81
Nonnative annual grassland	21.48
Canal*	1.90
Irrigation ditch*	0.66
Roadside ditch*	1.64
Orchard	0.02
Rice	1.80
Row Crop/Fallow	0.59
Ruderal areas	50.60
Developed areas	47.87
Total	138.04

Notes:

*Indicates that the feature is a potential Waters of the United States/waters of the State.

A detailed description of land cover types and the associated wildlife and fish usage is provided in the NES (ICF International 2016b). A detailed description of wetland communities and non-wetland waters is provided in the Aquatic Resources Delineation Report (ICF International 2016c). Wetland communities were the only sensitive natural communities documented in the BSA. The proposed project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community (other than wetland communities, described below) identified in local or regional plans, policies, or regulations, or by California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS). Although scattered individual riparian trees and shrubs occur in the BSA, the project would not adversely affect a substantial amount of riparian habitat.

2.3.2 Waters of the United States/Waters of the State

2.3.2.1 Regulatory Setting

Federal

Waters of the United States (including wetlands) 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 (CWA) (33 United States Code [USC] 1344) is the primary law regulating wetlands and surface waters. One purpose of the CWA is to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States 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 CWA, 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 CWA.

Section 404 of the CWA 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 of Engineers (USACE) with oversight by the United States Environmental Protection Agency (U.S. EPA).

USACE issues two types of 404 permits: Standard and General 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. There are two types of Standard permits: Individual permits and Letters of Permission.

Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of USACE's Standard permits. For Standard permits, the USACE decision to approve is based on compliance with U.S. EPA's Section 404(b)(1) Guidelines (U.S. EPA 40 Code of Federal Regulations [CFR] Part 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines were developed by the U.S. EPA in conjunction with USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the United States) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that USACE 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 (EO 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this EO states that a federal agency, such as the Federal Highway Administration (FHWA) 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.

State

At the state level, wetlands and waters are regulated primarily by CDFW, the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (RWQCBs).

Sections 1600–1607 of the California Fish and Game Code (CFGC) 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 CDFW before beginning construction. If CDFW determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement (LSAA) will be required. CDFW 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 USACE may or

may not be included in the area covered by a Streambed Alteration Agreement obtained from CDFW.

The RWQCBs were established under the Porter-Cologne Water Quality Control Act to oversee water quality. The RWQCB also issues water quality certifications for impacts to wetlands and waters in compliance with Section 401 of the CWA. Please see the Hydrology and Water Quality section for additional details.

2.3.2.2 Affected Environment

Table 5 identifies the acreages of waters of the United States/waters of the State that were documented in the BSA. A description of these features and their associated habitat uses and functions are provided below.

Scrub-Shrub Wetland

Scrub-shrub wetlands are wetlands dominated by woody vegetation less than 20 feet tall. Scrub-shrub wetlands in the BSA are dominated by sandbar willow (*Salix exigua*) and arroyo willow (*Salix lasiolepis*). These wetlands are adjacent to the emergent wetland located at the west end of the BSA and occur with seasonal wetlands east of Southridge Boulevard. The vegetation in scrub-shrub wetlands is dependent on long-term sources of water, and in the BSA the primary source of water appears to be irrigation runoff. Scrub-shrub wetlands are considered waters of the United States.

Emergent Wetland

Emergent wetland is located at the west end of the BSA in the basin between SR 20 and West Butte Road. The central portion of the wetland is inundated for long periods and lacks emergent vegetation. The dominant vegetation on the wetland margins includes common bulrush (*Schoenoplectus acutus*), Baltic rush (*Juncus balticus*), and Italian ryegrass (*Festuca perennis*). Most of the wetland perimeter is dominated by dense thickets of Himalayan blackberry (*Rubus armeniacus*) and sandbar willow

Seasonal Wetland

Seasonal wetlands are located in the ROW along the north side of SR 20. The dominant plant species are Italian ryegrass, Mediterranean barley (*Hordeum marinum* subsp. *gussoneanum*), and Baltic rush. Seasonal wetlands are dependent on cool-season rains and are dry most of the year. Seasonal wetlands are considered waters of the United States.

Canal

Eight canals are present in the BSA. The East Borrow Canal (EBC) of the Sutter Bypass is immediately west of the western limit of the BSA. Wadsworth Canal is an excavated channel that was created to convey winter flood flows and summer irrigation runoff south to the Sutter Bypass and has an adequate connection with the EBC of the Sutter Bypass. Humphrey Lateral conveys irrigation water and does not have an adequate connection with the EBC of the Sutter

Bypass. The beds of these canals are unvegetated, and the banks are vegetated with fig trees (*Ficus carica*), willows (*Salix* spp.), and herbaceous ruderal and grassland species.

Snake River and Little Blue Creek are the only other named streams in the BSA. These two streams, which historically drained the southeastern slopes of the Sutter Buttes, have been channelized and now serve primarily for irrigation drainage, and are categorized as canals. Three additional unnamed streams cross the western side of the BSA that historically conveyed flows from the south side of the Sutter Buttes to the Sutter Basin. These additional streams have also been channelized and converted to drainage canals. The beds of these streams are vegetated with emergent (common bulrush) or floating (mosquito fern [*Azolla filiculoides*]) species, and the banks are vegetated with ruderal species.

Irrigation Ditch

Irrigation ditches convey water to and from croplands adjacent to the BSA. Ditches that support rice fields have flowing water for long periods during the year. Ditches that support other crop types (e.g., alfalfa, grains) flow intermittently. Because of recent changes in agricultural practices in response to the current prolonged drought (i.e., conversion of rice crops to other crops, installation of drip irrigation in orchards), some of the drainage ditches in the BSA no longer appear to be functional and do not convey irrigation tailwater. The network of ditches that conveys irrigation water from the Feather River south to the Sutter Bypass would be considered waters of the United States because the ditches provide a hydrologic connection between other waters of the United States. Abandoned ditches that no longer convey water flows do not appear to be waters of the United States.

The beds of these ditches are generally vegetated with emergent wetland species. Common bulrush is the dominant species in most of the ditches in the BSA. The banks are vegetated with ruderal species.

Roadside Ditch

Roadside ditches constructed to drain runoff from the pavement are present along sections of SR 20. In many of these ditches, water is present only for short periods following rainfall. Consequently, the vegetation is composed of ruderal upland species. However, roadside ditches adjacent to irrigated cropland also receive water via overflow or seepage. These ditches support stands of common bulrush or Baltic rush. Roadside ditches were mapped as potential other waters of the United States in the Aquatic Resources Delineation Report but the USACE may determine that these features are not considered jurisdictional as part of the verification process (ICF International 2016c). In many cases, roadside ditches are generally not considered waters of the United States when they do not replace existing natural drainages, connect a natural drainage to a downstream tributary, intersect groundwater, or support wetland vegetation.

2.3.2.3 Environmental Consequences

The proposed project would result in the potential permanent impacts on 1.13 acres and temporary impacts on 0.74 acre of waters of the United States/waters of the State (see Table 6).

Table 6. Impacts on Waters of the United States/Waters of the State

Feature Type	Impacts	
	Permanent (acres)	Temporary (acres)
Seasonal wetland	0.13	0.09
Emergent wetland	0.40	0.03
Scrub-Shrub wetland	0.00	0.00
Subtotal Wetlands	0.53	0.12
Canal	0.14	0.56
Irrigation Ditch	0.04	0.05
Roadside Ditch	0.43	0.01
Subtotal Other Waters	0.60	0.62
Total	1.13	0.74

All of the wetlands and other waters of the United States identified in the BSA are also considered waters of the State. Potential impacts on wetland communities (emergent wetland, and seasonal wetland) and other waters of the United States (canal, irrigation ditch, and roadside ditch) would occur as a result of highway widening, culvert installation, bridge replacement (associated with the Wadsworth Canal), dewatering activities, and use of staging areas within the designated work area. Scrub-shrub wetlands would not be affected by the proposed project. The Aquatic Resources Delineation Report has not been submitted to the USACE and therefore acreages of impacts should be considered preliminary and would be further refined as part of the future permitting phase of the project.

Impacts on wetlands were considered to be temporary if fill would be removed following completion of construction and the temporarily disturbed portions of wetlands would be restored. Temporary impacts on wetlands would also occur during access for project construction. Additional indirect temporary impacts caused by sedimentation or modification of hydrology could occur in portions of wetlands that lie outside the designed work area. In addition, indirect impacts on water quality, such as increased turbidity and chemical runoff, may also result from road construction activities within adjacent wetlands and downstream portions of other waters that are outside the designated work area.

Except for the permanent fill material that would be placed into other waters of the United States associated with culvert extension/installation and the Wadsworth Canal expansion activities, all impacts on canals, irrigation ditches, and roadside ditches are considered temporary because these features will be restored to preconstruction conditions for water conveyance purposes.

Caltrans will implement the following measures to avoid and minimize effects on waters of the United States/waters of the State:

- Install fencing and/or flagging to protect sensitive biological resources

- Conduct mandatory environmental awareness training for construction personnel
- Retain a qualified biologist to conduct monitoring during construction in sensitive habitats
- Protect water quality and minimize sedimentation in and sediment-laden runoff to wetlands and other waters

In addition, Caltrans will offset to potential effects by implementing a measure to compensate for impacts on waters of the United States/waters of the State (non-giant garter snake aquatic habitat).

2.3.2.4 CEQA Considerations

The proposed project would result in less-than-significant impacts on waters of the United States/waters of the State with the implementation of the avoidance, minimization and mitigation measures described below.

2.3.2.5 Avoidance, Minimization, and/or Mitigation Measures

Install Fencing and/or Flagging to Protect Sensitive Biological Resources

Prior to construction, Caltrans' contractor will install high-visibility orange construction fencing and/or flagging, as appropriate, along the perimeter of the work area adjacent to Environmentally Sensitive Areas (ESAs) (e.g., wetlands, other waters, special-status species habitat, and active bird nests). Where specific buffer distances are required for sensitive biological resources (e.g., special-status species habitats and active bird nests), they will be specified under the corresponding measures identified below. Caltrans will ensure that the final construction plans show the locations where fencing will be installed. The plans will also define the fencing installation procedure. Caltrans will also ensure that the fencing is maintained throughout the duration of the construction period. If the fencing is removed, damaged, or otherwise compromised during the construction period, construction activities will cease until the fencing is repaired or replaced. The project's special provisions package will provide clear language regarding acceptable fencing material and prohibited construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within ESAs.

Conduct Mandatory Environmental Awareness Training for Construction Personnel

Before any ground breaking disturbance occurs, including grading and tree removal, a consulting biologist will conduct a mandatory contractor/worker environmental awareness training for construction personnel. The awareness training will be provided to all construction personnel (contractors and subcontractors) to brief them on the need to avoid effects on sensitive biological resources (e.g., wetlands, special-status species, and nesting birds) adjacent to the work area and the penalties for not complying with applicable state and federal laws and permit requirements. The biologist will inform all construction personnel about the life history and habitat requirements of special-status species with potential for occurrence onsite, the importance of maintaining habitat, and the terms and conditions of the biological opinion or other authorizing

documents. Proof of this instruction will be submitted to Caltrans, and other agencies (e.g., CDFW, USFWS, and National Marine Fisheries Service [NMFS]), as appropriate.

The environmental training will also cover general restrictions and guidelines that must be followed by all construction personnel to reduce or avoid effects on sensitive biological resources during project construction. General restrictions and guidelines that must be followed by construction personnel are listed below.

- Project-related vehicles will observe the posted speed limit on hard-surfaced roads and a 20 mile-per-hour speed limit on unpaved roads or access areas in the work area during travel within the project limits.
- Project-related vehicles and construction equipment will restrict off-road travel to the work area.
- Vegetation clearing and construction operations will be limited to the minimum necessary in areas of temporary access work areas and staging.
- All food-related trash will be disposed of in closed containers and removed from the work area at least once a week during the construction period. Construction personnel will not feed or otherwise attract wildlife to the project work area.
- No pets or firearms will be allowed in the project work area.
- To prevent possible resource damage from hazardous materials such as motor oil or gasoline, construction personnel will not service vehicles or construction equipment outside designated staging areas and TCE's.
- The training will also include identifying the BMPs written into construction specifications for avoiding and minimizing the introduction and spread of invasive plants (see measure to “*Avoid and minimize the spread of invasive plant species during project construction and restore temporarily disturbed grassland*”) and the rationale behind their implementation during project construction.

Retain a Qualified Biologist to Conduct Monitoring during Construction in Sensitive Habitats

The consulting biologist will monitor all construction activities that involve ground disturbance (e.g., vegetation removal, grading, excavation, bridge construction) within or adjacent to ESAs (e.g., wetlands, special-status species habitat, and active bird nests). The purpose of the monitoring is to ensure that measures identified in this IS/Proposed MND are properly implemented to avoid and minimize effects on sensitive biological resources and to ensure that the project complies with all applicable permit requirements and agency conditions of approval. The biologist will ensure that fencing around ESAs remains in place during construction and that no construction personnel, equipment, or runoff/sediment from the construction area enters ESAs. A final monitoring report will be prepared in compliance with the Biological Opinion and other permit requirements and submitted to the required agencies.

Protect Water Quality and Minimize Sedimentation in and Sediment-Laden Runoff to Wetlands and Other Waters

Caltrans will comply with all construction site BMPs specified in the SWPPP and any other permit conditions to minimize the introduction of construction-related contaminants and mobilization of sediment in wetlands and other waters in and adjacent to the designated work area. These BMPs will address soil stabilization, sediment control, wind erosion control, vehicle tracking control, non-storm water management, and waste management practices. The BMPs will be based on the best conventional and best available technology.

The proposed project is subject to storm water quality regulations established under NPDES, described in Section 402 of the federal CWA. In California, the NPDES program requires that any construction activity disturbing 1 or more acres comply with the statewide General Permit, as authorized by the State Water Board. The General Permit requires elimination or minimization of non-storm water discharges from construction sites and development and implementation of a SWPPP for the site. The primary elements of the SWPPP include the following.

- Description of site characteristics—including runoff and streamflow characteristics and soil erosion hazard—and construction procedures.
- Guidelines for proper application of erosion and sediment control BMPs.
- Description of measures to prevent and control toxic materials spills.
- Description of construction site housekeeping practices.

In addition to these primary elements, the SWPPP will specify that the extent of soil and vegetative disturbance will be minimized by control fencing or other means and that the extent of soil disturbed at any given time will be minimized. The SWPPP must be retained at the construction site. Caltrans will perform routine inspections of the construction area to verify that the BMPs are properly implemented and maintained.

The BMPs will include, but are not limited to, the following.

- Conduct all earthwork or foundation activities involving wetlands and other waters in the dry season.
- Use only equipment in good working order and free of dripping or leaking engine fluids when working in and around drainages and wetlands. Perform all vehicle maintenance at least 300 feet from all drainages and wetlands. Conduct any necessary equipment washing where the water cannot flow into drainages or wetlands.
- Prohibit the following types of materials from being rinsed or washed into the streets, shoulder areas, or gutters: concrete, solvents and adhesives, thinners, paints, fuels, sawdust, dirt, gasoline, asphalt and concrete saw slurry, and heavily chlorinated water.
- Prevent discharge of turbid water to the Sutter Bypass and tributary drainages during any construction activities by filtering the discharge first using a filter bag, diverting the water to

a settling tank or infiltration areas, and/or treating the water in a manner to ensure compliance with water quality requirements prior to discharging water to waterways.

- Prevent discharge of concrete to aquatic habitat as concrete is being poured, as required by the NPDES permit.
- Dispose of any surplus concrete rubble, asphalt, or other rubble from construction at a local landfill.
- Prepare and implement an erosion and sediment control plan for the proposed project. The plan will include the provisions and protocols listed below. The SWPPP for the project will detail the applications and type of measures and the allowable exposure of unprotected soils.

Caltrans will also obtain a 401 water quality certification from the Central Valley RWQCB and LSAA from CDFW that may contain additional BMPs and water quality measures to ensure the protection of water quality.

Compensate for Impacts on Waters of the United States/waters of the State (Non-Giant Garter Snake Aquatic Habitat)

To compensate for permanent project impacts on waters of the United States, including wetlands that do not provide suitable aquatic habitat for giant garter snake, Caltrans will purchase credits at a USACE-approved mitigation bank to ensure no net loss of wetland habitat functions and values. The minimum wetland compensation ratio for wetlands that are not considered suitable giant garter snake habitat will be 1:1 (1 acre of wetland habitat credit for every 1 acre of impact) to ensure no net loss of wetland habitat functions and values. As described under the measure to “*Compensate for permanent and temporary loss of giant garter snake habitat*”, Caltrans will compensate for the permanent and temporary loss of habitat through the purchase of mitigation credits at an USFWS and CDFW-approved conservation bank. In some cases, Caltrans may determine that onsite restoration of temporarily disturbed waters of the United States (that do not provide habitat for giant garter snake) may be appropriate. The final acreage of impact and compensation will be determined as part of the permitting phase of the proposed project.

Caltrans will also implement the conditions and requirements of state and federal permits that will be obtained for the proposed project.

2.3.3 Plant Species

2.3.3.1 Regulatory Setting

The USFWS and CDFW have regulatory responsibility for the protection of special-status plant species. “Special-status” species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are afforded varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA). Please see the Threatened and Endangered Species Section in this document for detailed information regarding these species. This section of the

document discusses all the other special-status plant species, including CDFW species of special concern, USFWS candidate species, and California Native Plant Society (CNPS) rare and endangered plants.

The regulatory requirements for FESA can be found at United States Code 16 (USC), Section 1531, et seq. See also 50 CFR Part 402. The regulatory requirements for CESA can be found at California Fish and Game Code, Section 2050, et seq. Caltrans projects are also subject to the Native Plant Protection Act, found at California Fish and Game Code, Section 1900–1913, and the California Environmental Quality Act (CEQA), CA Public Resources Code, Sections 2100–21177.

2.3.3.2 Affected Environment

Nine special-status plant species were identified as occurring in the BSA vicinity based on a review of existing information (ICF International 2016b). Only one of these special-status plants has been recorded within the BSA (Woolly rose-mallow [*Hibiscus lasiocarpus* var. *occidentalis*], a CNPS List 1B.2 species). Woolly rose-mallow was observed in 1984 in the Sutter Bypass on the north side of SR 20 (CNDDDB occurrence number 60). This species was not observed during spring surveys because it is identifiable during summer months (July – August). Two of the species, heartscale (*Atriplex cordulata* var. *cordulata*) and recurved larkspur (*Delphinium recurvatum*), would not be expected to occur in the BSA because alkali habitat for these species is not present. In addition, Colusa layia (*Layia septentrionalis*) would not be expected to occur because habitat for the species does not occur in the BSA. No early blooming special-status plants were observed during the 2016 spring floristic surveys conducted for the project and no special-status species have been document directly in the work area.

2.3.3.3 Environmental Consequences

The proposed project has the potential to effect late blooming special-status plants (e.g., woolly rose-mallow) that would not have been identifiable during the spring floristic surveys. As stated above, woolly rose-mallow has been documented in the BSA (as described previously) and could occur along waterways and emergent wetlands in the BSA. Additional surveys will be conducted in summer to determine if late-blooming special-status plants occur in the BSA and could be substantially affected by the proposed project.

2.3.3.4 CEQA Considerations

The proposed project would result in less-than-significant impacts on special-status plant species with the implementation of the avoidance, minimization and mitigation measures described below.

2.3.3.5 Avoidance, Minimization, and/or Mitigation Measures

In addition to the spring survey that was conducted in the BSA, Caltrans will conduct a summer survey, evaluate any populations found during the summer survey, and determine if the project would have a substantial effect the species (if any are located). If the botanists determine that the project would have a substantial effect on the population and the population cannot be avoided,

Caltrans will coordinate with CDFW and identify appropriate measures to mitigate for effects. In addition, Caltrans will implement (if determined to be appropriate) the following measures previously described above:

- Install fencing and/or flagging to protect sensitive biological resources
- Conduct mandatory environmental awareness training for construction personnel
- Retain a qualified biologist to conduct monitoring during construction in sensitive habitats

2.3.4 Animal Species

2.3.4.1 Regulatory Setting

Many state and federal laws regulate impacts on wildlife. The USFWS, National Oceanic and Atmospheric Administration (NOAA) Fisheries (also known as NMFS) and CDFW 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 Acts. Species listed or proposed for listing as threatened or endangered are discussed in the following section. All other special-status animal species are discussed here, including CDFW fully protected species and species of special concern, and USFWS or NMFS candidate species.

Federal laws and regulations pertaining to wildlife include the following:

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

State laws and regulations pertaining to wildlife include the following:

- California Environmental Quality Act
- Sections 1600–1603 of the California Fish and Game Code
- Section 4150 and 4152 of the California Fish and Game Code

2.3.4.2 Affected Environment

After a review of species distribution and habitat requirements data and the field surveys, it was determined that the following non-listed wildlife species have the potential to occur in the BSA (ICF International 2016b): western pond turtle (*Actinemys marmorata*), pallid bat (*Antrozous pallidus*), western red bat (*Lasiurus blossevillii*), roosting colonies of non-special-status bats, and CV fall- and late fall-run Chinook salmon (see descriptions below).

Western Pond Turtle

Western pond turtle is a California species of special concern. There is one record for western pond turtle that is approximately 5 miles from the BSA (California Department of Fish and

Wildlife 2016a). The emergent wetlands, canals, and irrigation ditches in the BSA provide suitable aquatic habitat for western pond turtle. The Sutter Bypass also provides suitable aquatic habitat for western pond turtle. Low quality upland habitat (nonnative annual grassland) is adjacent to the aquatic habitat.

Pallid Bat, Western Red Bat, and Roosting Colonies of Non-Special Status Bats

An assessment for roosting habitat, a day survey for evidence of roosting bats, acoustic surveys, and a survey for night-roosting bats were conducted at the bridge structure over Wadsworth Canal. The bridge does not provide day roosting habitat in the form of long, linear expansion joints. Smaller openings and the cavernous nature of the bridge may provide day-roosting habitat, although no bats were observed roosting on the bridge during daytime surveys. Sheltered night roost habitat is available in the open boxes formed by the concrete beams on the underside of the bridge, where there is protection from the wind, and the cavern-like spaces formed by the angle of the earthen slopes, abutments, and the bridge deck overhead. Evidence of moderate bat use is present at the bridge (small piles of guano on the ground, guano on the bridge beams, urine staining). Bat species observed night roosting on the bridge were big brown bat (*Eptesicus fuscus*) and Mexican free-tailed bat (*Tadarida brasiliensis*). The acoustic surveys detected additional species, including one special-status bat (western red bat). Although no special-status bats were observed roosting on the bridge, use of the bridge by special-status bats cannot be excluded without additional surveys at other times of the year.

The Sutter Bypass Bridge may provide suitable day and night-roosting habitat for bats, but it was not assessed because no work is proposed on this bridge. Concrete box culverts in the BSA may also provide suitable night-roosting habitat for bats. All accessible box culverts were viewed from their outside edges and those whose interior could be viewed did not appear to have any crevice habitat for day roosting but could provide night-roosting habitat. There are no buildings in the BSA that have been identified for removal and therefore, no buildings were assessed for bat roosting habitat.

There are no CNDDDB records for pallid bat or western red bat within 5 miles of the BSA but there is one record for pallid bat at Sutter Buttes and there are several records for western red bat in the vicinity of the town of Colusa, within 10 miles of the BSA (California Department of Fish and Wildlife 2016a). In addition to the Wadsworth Canal Bridge and concrete box culverts, trees in cottonwood-willow woodland (particularly cottonwoods [*Populus fremontii*] and valley oaks [*Quercus lobata*]), large trees in nonnative woodland, and other large trees in the BSA provide suitable roosting habitat for pallid bat and western red bat. Although orchard trees provide suitable roosting habitat for bats, the orchard trees in the BSA are relatively young and small, and are currently unlikely to support roosting bats, but may provide suitable habitat by the time the proposed project is constructed.

Migratory Birds

Several special-status migratory birds, including northern harrier (*Circus cyaneus*) white-tailed kite (*Elanus leucurus*), loggerhead shrike (*Lanius ludovicianus*), the Modesto population of song sparrow (*Melospiza melodia*), and non-special-status migratory birds, including raptors, have the potential to nest in trees, shrubs, and ground vegetation in the BSA. Additionally, the bridge

over Wadsworth Canal and concrete box culverts in the BSA provide suitable nesting substrate for cliff swallow (*Petrochelidon pyrrhonota*), barn swallow (*Hirundo rustica*), and black phoebe (*Sayornis nigricans*). The occupied nests and eggs of birds are protected by CFGC Sections 3503 and 3503.5 and the MBTA.

Several non-special-status migratory birds, including red-tailed hawk (*Buteo jamaicensis*), killdeer, mourning dove (*Zenaidura macroura*), and Anna's hummingbird (*Calypte anna*) could nest on the ground or in shrubs or trees in and adjacent to the BSA. These typically common species are locally and regionally abundant. The breeding season for most birds is generally from February 1 to August 31.

Cliff swallows and barn swallows are species that frequently build mud nests on the undersides of artificial structures such as bridges. Swallows winter in South America and return to California to breed in February. Swallows nest from April to August and migrate south in September and October (Zeiner et al. 1990). Black phoebes also build mud nests on near or over water on cliff faces, on walls of old buildings, under bridges, under eaves, and on other natural and artificial sheltered locations near water. Black phoebes breed from March to August (Zeiner et al. 1990).

A survey for migratory birds was conducted on March 18, 2016. Migratory birds observed in and adjacent to the BSA were recorded during this survey, and during habitat-based surveys that were conducted on March 8, 9, and 29, and April 7, 2016. A hawk nest was observed between Southridge Boulevard and Wyncoop Road near PM 7.4. The nest is within a group of five valley oak trees. A hawk was observed in the nest on March 8, 2016. No activity was observed at the nest during the March 18, 2016, nesting bird survey. On March 29, 2016, a red-tailed hawk was observed flying to the group of valley oaks and then sitting in one of the trees until a turkey vulture (*Cathartes aura*) approached. The red-tailed hawk flew from the tree towards the vulture and then slowly flew off to the north, presumably to forage. Several pairs of killdeer were displaying behaviors consistent with having eggs nearby during the March 18, 2016, nesting bird survey. Several old nest structures are present in the BSA but active nesting was not observed during the March 18, 2016, nesting bird survey.

Active cliff swallow and black phoebe nests were observed on the Wadsworth Canal Bridge and swallow nests were observed on several of the concrete box culverts. Suitable nesting habitat for migratory birds is present in all land cover types within the BSA.

Central Valley Fall- and Late Fall-Run Chinook Salmon

The CV fall- and late fall-run Chinook salmon ESU is a federal species of concern (69 FR 19975; April 15, 2004). The CV fall-run and late fall-run Chinook salmon ESU includes all naturally spawning populations of fall-run and late fall-run Chinook salmon in the Sacramento and San Joaquin River basins and their tributaries east of the Carquinez Strait in California (64 FR 50394). Critical habitat for CV fall- and late fall-run Chinook salmon has not been designated. The CV fall- and late fall-run Chinook salmon ESU is not listed under CESA, but is considered a California species of special concern. CDFW classifies the current status of CV fall-run Chinook salmon as Moderate Concern (i.e., the species is under no immediate threat of extinction but populations are in long-term decline or are naturally small and isolated, and

warrant frequent status re-assessment) and CV late fall-run Chinook salmon as High Concern (considered to be under severe threat of extinction, but extinction is less imminent than for other more imperiled species) (Moyle et al. 2015). Like winter- and spring-run Chinook salmon, fall- and late fall-run Chinook salmon is an important commercial fish species and, therefore, is managed under the Magnuson-Stevens Fishery Management and Conservation Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267) and the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 (Public Law 109-479).

Focused surveys for CV fall- and late fall-run Chinook salmon in the Sutter Bypass in the vicinity of the BSA and Wadsworth Canal were not conducted. However, it has been determined that Butte Creek supports a spawning population of CV fall-run Chinook salmon (Azat 2015) and that the Sutter Bypass supports rearing and migration of Butte Creek juveniles. In addition, the Sutter Bypass serves as a migratory corridor for fall- and late fall-run Chinook salmon juveniles produced in the upper Sacramento River and tributaries when Sacramento River flows overtop the weirs leading to the bypass.

Wadsworth Canal and the channels draining to it do not provide suitable spawning habitat for fall- or late fall-run Chinook salmon; however, juveniles may use Wadsworth Canal for non-natal rearing in winter and spring when temperatures are suitable because it has an adequate hydrologic connection to the EBC and lacks any physical barriers downstream of SR 20. Snake River, Little Blue Creek, and the three unnamed streams downstream of the SR 20 crossing do not provide suitable habitat for CV fall- and late fall-run Chinook salmon primarily because they lack an adequate hydrologic connection to the Sutter Bypass (i.e., these drainages are located on the land side of the levees bordering Wadsworth Canal and the Sutter Bypass, and their flow is pumped to the Sutter Bypass).

2.3.4.3 Environmental Consequences

Western Pond Turtle

Construction of the proposed project would result in direct permanent and temporary impacts on suitable aquatic and upland habitat for western pond turtle. Permanent and temporary impacts on aquatic and upland habitat for western pond turtle could result when construction occurs in and along the basin between SR 20 and West Butte Road, seasonal streams, canals, irrigation ditches, and wetland ditches in the BSA. In-water work in suitable aquatic habitat could cause entrapment of western pond turtles, resulting in injury to or mortality of turtles. Ground-disturbing activities in suitable upland habitat could also cause injury or mortality of eggs or turtles. Construction noise and activity could disturb turtles or cause them to avoid the area. A potential indirect effect of the proposed project would be a degradation of aquatic and upland habitat adjacent to the widened roadway. It is anticipated that temporarily disturbed or undisturbed habitat adjacent to the widened roadway would be degraded from weedy plant species invading these areas, and from garbage and other contaminants associated with the roadway entering these areas. Additionally, some new areas of right-of way would be subject to maintenance activities, such as treatment with herbicides, and would become degraded over time. To avoid and minimize potential effects on western pond turtle, Caltrans will implement the following measures described above for “Waters of the United States/Waters of the State”:

- Install fencing and/or flagging to protect sensitive biological resources
- Conduct mandatory environmental awareness training for construction personnel
- Retain a qualified biologist to conduct monitoring during construction in sensitive habitats
- Protect water quality and minimize sedimentation in and sediment laden runoff to wetlands and other waters

In addition to these measures, Caltrans will also implement the following avoidance and minimization measures to further avoid effects on the species (described below):

- Conduct preconstruction surveys for western pond turtle and monitor initial in-water work
- Avoid and minimize the spread of invasive plant species during project construction and restore temporarily disturbed grassland

Pallid Bat, Western Red Bat, and Roosting Colonies of Non-Special Status Bats

The proposed project could potentially affect special-status bats (pallid bat and western bat) and roosting colonies of non-special-status bats. CDFW requires that substantial roost colonies of non-special-status bats (such as Mexican free-tailed bat) be protected from disturbance, especially during the breeding season.

Construction of the proposed project would occur during the maternity season of bats (April 1 through September 15). Because Wadsworth Canal provides suitable habitat for special-status fish and giant garter snake, bridge replacement would occur June through October.

Replacement of the bridge would result in the removal of occupied night-roosting habitat for bats. Although no special-status bats were observed roosting on the bridge, use of the bridge by special-status bats may occur. When a night roost is eliminated, the energetic cost to the bats of commuting to the surrounding foraging area may be greatly increased, potentially making this area unusable for foraging (H.T. Harvey & Associates 2004:21).

The Wadsworth Canal replacement bridge could provide suitable day and night-roosting habitat for bats, which would replace the night roosting habitat and potentially increase the amount of day roosting habitat in the BSA

To reduce potential effects on special-status bats, Caltrans will implement the following avoidance and minimization measures described above for “Waters of the United States/Waters of the State”:

- Install fencing and/or flagging to protect sensitive biological resources
- Conduct mandatory environmental awareness training for construction personnel
- Retain a qualified biologist to conduct monitoring during construction in sensitive habitats

In addition to these measures, Caltrans will also implement the following avoidance and minimization measures to further avoid effects on the species (described below):

- To the extent possible and where appropriate, conduct culvert extensions and bridge replacement work during the day to avoid disturbance of night-roosting bats
- Identify suitable roosting habitat for bats and implement avoidance and protective measures
- Provide bat roosting boxes on the Wadsworth Canal replacement Bridge

Migratory Birds

As discussed above, several special-status and non-special status migratory birds could nest on the ground or in shrubs or trees in and adjacent to the BSA. Tree removal and trimming is expected to occur for construction of the proposed project. Clearing of nonnative annual grassland, seasonal wetland, and other ground vegetation, where ground nesting birds may be present, may also occur. Additionally, Wadsworth Canal Bridge, which had active cliff swallow and black phoebe nests on it, would be removed and replaced. Because Wadsworth Canal provides suitable habitat for special-status fish and giant garter snake, work on the bridge would occur between June and October, which is during the nesting period for swallows and phoebes. Extension of box culverts could also disturb swallows, if nesting on the structures. Construction activities during the nesting season of migratory birds (generally February 1 through August 31) could result in the possible injury to or mortality of nesting birds. Removal or destruction of nests or construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment.

To reduce potential effects on migratory birds, Caltrans will implement the following avoidance and minimization measures (described below):

- Remove vegetation during the non-breeding season and conduct preconstruction surveys for nesting migratory birds
- Implement measures to deter swallow and black phoebe nesting prior to the nesting season

Non-Listed Special-Status Fish Species

The proposed project has the potential to affect non-listed special-status fish (CV fall- and late fall-run Chinook salmon and their habitat. Potential project impacts on non-listed special-status fish habitat include both short-term and long-term effects. Short-term effects include temporary construction-related effects on aquatic habitat that may last from a few hours to days (e.g., suspended sediment and turbidity, construction noise). Long-term effects include hydromodification- and water quality-related effects on non-listed special-status fish and aquatic habitat associated with an increase in impervious surfaces and leaching of polycyclic aromatic hydrocarbons (PAHs). Short- and long-term effects on fish were evaluated qualitatively based on general knowledge of the impact mechanisms and the anticipated response of special-status fish to construction actions and changes in water quality.

Project impacts on non-listed special-status fish and their habitat include potential disturbance and direct injury, degradation of water quality, stranding of fish in dewatered areas, and changes to hydrology and water quality from increases in impervious surfaces. These impacts are discussed in detail in the NES (ICF International 2016b).

To reduce potential effects on non-listed, special-status fish species, Caltrans will implement the measure to “Protect water quality and minimize sedimentation in wetlands and sediment laden runoff to wetlands and other waters” (described above for “Waters of the United States/Waters of the State”). In addition to this measure, Caltrans will also implement the measure “Dewater or implement other measures to minimize underwater sound pressure while driving piles with an impact hammer” (described below).

2.3.4.4 CEQA Considerations

The proposed project would result in less-than-significant impacts on non-listed animal species with the implementation of the avoidance, minimization and mitigation measures described below.

2.3.4.5 Avoidance, Minimization, and/or Mitigation Measures

Conduct Preconstruction Surveys for Western Pond Turtle and Monitor Initial In-Water Work

To avoid potential injury or mortality of western pond turtles, Caltrans will retain a qualified biologist (i.e., one who is approved by Caltrans and is also CDFW-approved to capture and relocate turtles) to conduct a preconstruction survey for western pond turtles within 24 hours of the start of construction. The biologist will survey the aquatic habitat and adjacent upland habitat within the construction area. If in-water work does not start immediately, the biologist will return to the construction site immediately prior to the start of in-water work to conduct another preconstruction survey. If a turtle becomes trapped during initial in-water work, the biologist will relocate the individual to suitable aquatic habitat upstream or downstream of the construction area. For the remainder of construction, the biologist will remain on-call in case a turtle is discovered. The construction crew will be instructed to notify the crew foreman if a turtle is found trapped within the construction area. The foreman will contact the biologist and work in the area where the turtle is trapped will stop until the biologist arrives and removes and relocates the turtle. The biologist will report their activities to Caltrans and CDFW within 1 day of relocating any turtle.

Avoid and Minimize the Spread of Invasive Plant Species during Project Construction and Restore Temporarily Disturbed Grassland

Caltrans or its contractor will be responsible for avoiding and minimizing the introduction of new invasive plants and the spread of invasive plants previously documented in the BSA. Two or more of the BMPs listed below will be written into the construction specifications and implemented during project construction.

- Retain all fill material onsite to prevent the spread of invasive plants to uninfested areas.
- Use a weed-free source for project materials (e.g., straw wattles for erosion control that are weed-free or contain less than 1% weed seed).
- Prevent invasive plant contamination of project materials during transport and when stockpiling (e.g., by covering soil stockpiles with a heavy-duty, contractor-grade tarpaulin).

- Use sterile wheatgrass seed and native plant stock during revegetation.

The goal for implementation of two or more of these BMPs is to minimize the disturbance and transport of soil and vegetation to the greatest extent feasible to complete the work. Detailed information about implementing these BMPs can be found in Cal-IPC's *Preventing the Spread of Invasive Plants: Best Management Practices for Transportation and Utility Corridors* (California Invasive Plant Council 2012).

Additionally, upon project completion, Caltrans will restore all temporarily disturbed grassland to pre-project or better conditions.

Remove Vegetation during the Non-Breeding Season and Conduct Preconstruction Surveys for Nesting Migratory Birds

To the maximum extent feasible, vegetation removal (trees, shrubs, and ground vegetation) will occur during the non-breeding season for most migratory birds (generally between October 1 and January 31). This timing is highly preferable because if an active nest is found during preconstruction surveys (described below) in a tree (or other vegetation) that would be removed by project construction, the tree (or other vegetation) cannot be removed until the end of the nesting season, which could delay construction. If vegetation cannot be removed between October and January, or if ground cover re-establishes in areas where vegetation has been removed, the affected area must be surveyed for nesting birds, as discussed below.

If construction activities are expected to begin during the nesting season for birds (generally February 1 through September 30), Caltrans will retain a qualified wildlife biologist with knowledge of the relevant species to conduct nesting surveys before the start of construction. A minimum of two separate surveys will be conducted for migratory birds, including raptors. Surveys will include a search of ground vegetation, and all trees and shrubs that provide suitable nesting habitat in the project area. In addition, a 500-foot radius around the project area will be surveyed for nesting raptors. If possible, the first survey should occur during the height of the breeding season (March 1 to June 1) and the final survey will occur within 1 week of the start of construction. If no active nests are detected during these surveys, no additional measures are required.

If an active nest is found in the survey area, a no-disturbance buffer area will be established around the nest site to avoid disturbance or destruction of the nest until the end of the breeding season (September 30) or until after a qualified wildlife biologist determines that the young have fledged and moved out of the project area (this timing varies by species). The extent of each buffer areas will be determined by the biologist in coordination with USFWS and CDFW and will depend on the level of noise or construction disturbance, line-of-sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. Suitable buffer distances may vary between species.

Implement Measures to Deter Swallow and Black Phoebe Nesting Prior to the Nesting Season

To avoid impacts on swallows and black phoebes nesting on the Wadsworth Canal Bridge and concrete box culverts, Caltrans will implement the following measures prior to the start of the nesting period.

- Caltrans will have a qualified wildlife biologist inspect Wadsworth Canal Bridge and concrete box culverts during the swallows' non-breeding season (September 1 through February 28). If nests are found and are abandoned, they may be removed. To avoid damaging active nests on these structures, nests must be removed before the breeding season begins (March 1).
- After nests are removed, a qualified contractor will cover the undersides of the bridge and box culverts with suitable material to prevent nesting. Installation of the material will occur before March 1 and will be monitored by a qualified biologist throughout the breeding season (typically several times a week). The material will be anchored so that swallows cannot attach their nests to the bridge.
- As an alternative to covering the underside of a bridge and box culverts, Caltrans will have a qualified biologist remove nests as the birds construct them and before any eggs are laid. Visits to the site would need to occur daily throughout the breeding season (March 1 through August 31) as swallows can complete a nest in a 24-hour period.
- If covering of the bridge and box culverts does not occur by March 1 and swallows colonize the bridge or concrete box culverts, disturbance or removal of the structures will not occur before August 31 or until a qualified biologist has determined that the young have fledged and all nest use has been completed.

If appropriate steps are taken to prevent swallows from constructing new nests as described above, work can proceed at any time of the year.

To the Extent Possible and Where Appropriate, Conduct Culvert Extensions and Bridge Replacement Work during the Day to Avoid Disturbance of Night-Roosting Bats

To avoid disturbance, injury, or mortality of bats utilizing the Wadsworth Canal Bridge for night roosting, Caltrans will conduct all work on these structures during the day (to the extent possible and where appropriate). If this is not possible, portable lights will be used to illuminate the roosting areas prior to and after sunset to deter bats from roosting during night/s when work will occur.

Identify Suitable Roosting Habitat for Bats and Implement Avoidance and Protective Measures

Trees

If tree removal or trimming cannot be conducted between September 15 and October 30, qualified biologists will examine trees for suitable bat-roosting habitat before tree removal or

trimming. High-quality habitat features (e.g., large tree cavities, basal hollows, loose or peeling bark, larger snags, palm trees with intact thatch) will be identified and the area around these features searched for bats and bat signs (e.g., guano, culled insect parts, staining). Riparian woodland, orchards, and stands of mature broadleaf trees are considered potential habitat for solitary foliage-roosting bat species. Because signs of bat use are not easily found, and trees cannot be completely surveyed for bat roosts, the protective measures listed below will be implemented for trees containing high-quality habitat features.

- Removal or disturbance of trees providing bat roosting habitat will be avoided between April 1 and September 15 (the maternity period) to avoid effects on pregnant females and active maternity roosts (whether colonial or solitary).
- Removal of trees providing bat roosting habitat will be conducted between September 15 and October 30, which corresponds to a time period when bats have not yet entered torpor or would be caring for nonvolant young.
- Trees will be removed in pieces rather than felling an entire tree.
- If a maternity roost is found, whether solitary or colonial, that roost will remain undisturbed until September 15 or until a qualified biologist has determined the roost is no longer active.
- If avoidance of non-maternity roost trees is not possible, and tree removal or trimming must occur between October 30 and August 31, qualified biologists will monitor tree trimming/removal of the habitat. If possible, tree trimming or removal should occur in the late afternoon or evening when it is closer to the time that bats would normally arouse. Prior to trimming or removal of trees providing suitable roosting habitat, each tree will be shaken gently and several minutes should pass before felling trees or removing limbs to allow bats time to arouse and leave the tree. Biologists should search downed vegetation for dead and injured bats. The presence of dead or injured bats that are species of special concern will be reported to CDFW. The biologist will prepare a biological monitoring report, which will be provided to Caltrans and CDFW.

Structures

Qualified biologists will conduct an initial daytime survey of existing structures (i.e., concrete box culverts and Wadsworth Canal Bridge) to assess them for potential bat roosting habitat, and to look for bats and bat sign. The biologists will examine both the inside and outside of the structures for potential roosting habitat, as well as routes of entry to the structures. Depending on the results of the habitat assessment, the following steps will be taken as described below.

If the structures can be adequately assessed and no habitat or limited habitat for roosting bats is present and no signs of bat use are present, a preconstruction survey of the structures by qualified biologists will be conducted within 24 hours of disturbance.

If moderate or high potential habitat is present and bats or bat sign are observed, or if exclusion measures are not installed as described above, or the structures provide suitable habitat but could not be adequately assessed, the following protective measures will be implemented.

- Follow-up surveys will be conducted to determine if bats are still present. If species identification is required by CDFW, surveys using night vision goggles and active acoustic monitoring using full spectrum bat detectors will be used. A survey plan (number, timing, and type of surveys) will be determined in coordination with CDFW.
- Based on the timing of demolition, the extent of bat sign or occupied habitat, and the species present (if determined), the qualified biologists will work with the project proponent and CDFW to develop a plan to discourage or exclude bat use prior to demolition. The plan may include installing exclusion measures or using light or other means to deter bats from using the structure to roost.
- A preconstruction survey of the interior and exterior of the structures will be conducted within 24 hours of demolition.

Depending on the species of bats present, size of the bat roost, and timing of the demolition, additional protective measures may be necessary. Provide Bat Roosting Boxes on the Wadsworth Canal Replacement Bridge

Caltrans will construct a minimum of two bat roosting boxes on the Wadsworth Canal Bridge to provide replacement roosting habitat for bats. The boxes will be constructed out of plywood and will follow Caltrans design specifications. The bat boxes will be monitored for use at least twice per year for a minimum of 2 years, or as required by CDFW. After the second year of monitoring, Caltrans will periodically inspect the boxes and replace them if they become damaged or unusable. If it is determined from further survey work that special-status bats utilize the bridge for roosting, CDFW may have additional requirements for replacement habitat and monitoring the replacement habitat for bat use.

Dewater or Implement Other Measures to Minimize Underwater Sound Pressure while Driving Piles with an Impact Hammer

Caltrans will require the contractor to implement the following measures, developed in coordination with project design engineers, to minimize the exposure of special-status fish species to potentially harmful underwater sounds while driving piles with an impact hammer.

- If feasible, piles will be driven inside a dewatered cofferdam if an impact hammer is used.
- Piles driven with an impact hammer to construct a new bridge over Wadsworth Canal will be restricted to the required work window (as specified in the permits).
- If feasible, the contractor will vibrate all piles to the maximum depth possible before using an impact hammer.
- During impact driving, the contractor will limit the number of strikes per day to the minimum necessary to complete the work.

2.3.5 Threatened and Endangered Species

2.3.5.1 Regulatory Setting

The primary federal law protecting threatened and endangered species is FESA: 16 United States Code (USC) Section 1531, et seq. See also 50 CFR Part 402. This act and subsequent 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 FHWA are required to consult with the USFWS and NMFS 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 FESA 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 CESA, CFGC Section 2050, et seq. CESA 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. CDFW is the agency responsible for implementing CESA. Section 2081 of the CFGC 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." CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFW. Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species.

2.3.5.2 Affected Environment

Giant Garter Snake

Giant garter snake is federally and state listed as threatened. Historically, giant garter snake was found throughout the Central Valley from Butte County in the north to Kern County in the south. Currently, giant garter snake is only known to occur in nine discrete populations in the Sacramento and San Joaquin Valleys in Butte, Colusa, Fresno, Glenn, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter, and Yolo Counties (U.S. Fish and Wildlife Service 2015:8–10).

Focused surveys for giant garter snake were not conducted for the proposed project. There are 6 records for giant garter snake within 5 miles of the BSA (California Department of Fish and Wildlife 2016a). The closest record is for two snakes observed in 2011 in Wadsworth Canal,

approximately 0.6 mile from the BSA. Suitable aquatic habitat for giant garter snake is present in and adjacent to (i.e., within 200 feet) of the BSA at the following locations (Appendix E).

- Sutter Bypass
- Basin between SR 20 and West Butte Road
- Irrigation ditch and emergent wetland at PM 6.3
- Canal between PM 6.5 and PM 6.6
- Canal at PM 7.0
- Wadsworth Canal (PM 9.8)
- Irrigation ditch at PM 10.5 (Little Blue Creek)
- Humphrey Lateral Canal (PM 10.7 to PM 10.9)
- Snake River (PM 11.2)

Roadside ditches, irrigation ditches, and other areas of emergent wetland in the BSA (i.e., irrigation ditches at PMs 5.3 and PM 8.1–8.2 and emergent wetland at PM 6.8 and PM 7.8–7.9) do not provide suitable aquatic habitat for giant garter snake because of limited duration of water and lack of prey. Low to moderate quality upland habitat (emergent wetland and nonnative annual grassland) is adjacent to all of the aquatic habitats listed above.

Swainson's Hawk

Swainson's hawk is a state-listed threatened species. Swainson's hawks forage in grasslands, grazed pastures, alfalfa and other hay crops, and in certain grain and row croplands. Vineyards, orchards, rice, and cotton crops are generally unsuitable for foraging because of the density of the vegetation (California Department of Fish and Game 1992:41).

Focused surveys for Swainson's hawk were not conducted for the proposed project. There is one record from 2004 for a Swainson's hawk nest within the BSA (California Department of Fish and Wildlife 2016a). Five additional records exist for Swainson's hawk nests within 5 miles of the BSA. A Swainson's hawk was observed foraging north of SR 20 and west of Morehead Road just outside of the BSA during the March 29, 2016, field visit. A pair of Swainson's hawks was also observed near Acacia Avenue and an individual was observed just north of Wadsworth Canal during nesting migratory bird surveys on April 25, 2016. Swainson's hawks could nest in the cottonwood-willow riparian woodland, nonnative woodland, and individual trees in the BSA and could forage in seasonal wetland, nonnative grassland, row crop/fallow lands, and ruderal areas throughout the BSA.

Tricolored Blackbird

Tricolored blackbird (*Agelaius tricolor*) is a candidate for listing under the CESA and a California species of special concern. Tricolored blackbird is a highly colonial species that is largely endemic to California. Tricolored blackbird breeding colony sites require open, accessible water; a protected nesting substrate, including either flooded, thorny, or spiny

vegetation; and a suitable foraging space providing adequate insect prey within a few miles of the nesting colony. Tricolored blackbird breeding colonies occur in freshwater marshes dominated by tules and cattails, in Himalayan blackberry, and in silage and grain fields (Beedy and Hamilton 1997:3–4).

Focused surveys for tricolored blackbird were not conducted but no tricolored blackbirds were observed during nesting migratory bird surveys. There is one record for a historical tricolored blackbird nesting colony approximately 5 miles from the BSA. This record is from 1935 and the nesting habitat may no longer be present. The only areas of potentially suitable nesting habitat in or adjacent to the BSA are the Himalayan blackberry thickets at the west and east ends of the BSA and along the Snake River (Appendix E). One the east and west ends, the patches of blackberry are relatively narrow (10 to 20 feet wide) but may be large enough to support a nesting colonies. The blackberry thicket along Snake River is larger and provides suitable nesting habitat. Tricolored blackbirds could forage in the seasonal wetlands, nonnative annual grassland, row crop/fallow lands, and ruderal areas in the BSA.

Central Valley Steelhead

The California CV steelhead DPS is federally listed as threatened (63 FR 13347; March 19, 1998) (71 FR 834; January 5, 2006). NMFS reaffirmed its threatened status on August 15, 2011 (National Marine Fisheries Service 2011). The CV steelhead DPS includes all naturally spawned populations of steelhead in the Sacramento and San Joaquin Rivers and their tributaries, excluding steelhead from San Francisco and San Pablo Bays and their tributaries. Artificially-propagated fish from Coleman National Fish Hatchery and Feather River Fish Hatchery are included in the DPS (National Marine Fisheries Service 2006). Critical habitat for CV steelhead has been designated, and includes the Sutter Bypass (70 FR 52488; September 2, 2005). CV steelhead is not listed under CESA.

Focused surveys for CV steelhead in the Sutter Bypass in the vicinity of the BSA and in Wadsworth Canal were not conducted. However, Butte Creek steelhead are known to use the Sutter Bypass as seasonal rearing habitat and as a migration corridor to and from spawning habitat in upper Butte Creek (U.S. Fish and Wildlife Service 2000). Because of its hydrologic connection with the Sacramento River, the Sutter Bypass is also used by Sacramento River steelhead adults and juveniles for migration when Sacramento River flows overtop the Tisdale, Colusa, or Moulton Weirs during flood events. Juvenile steelhead may use Wadsworth Canal for non-natal seasonal rearing in winter and spring when temperatures are suitable because the canal has an adequate hydrologic connection to the EBC and Sutter Bypass, and lacks any physical barriers downstream of SR 20.

Wadsworth Canal and the channels draining to it do not provide suitable spawning habitat, and it is assumed that the canal and EBC do not provide suitable rearing habitat for juveniles in summer because of poor habitat conditions (e.g., excessive water temperatures and presence of introduced, predatory fish species). Snake River, Little Blue Creek, and the three unnamed streams downstream of the SR 20 crossing do not provide suitable habitat for steelhead primarily because they lack an adequate hydrologic connection to the Sutter Bypass (i.e., these drainages are located on the land side of the levees bordering Wadsworth Canal and the Sutter Bypass, and their flow is pumped to the Sutter Bypass).

Sacramento River Winter-Run Chinook Salmon

The Sacramento River winter-run Chinook salmon ESU is listed as endangered under FESA (59 FR 440; January 4, 1994). The ESU includes all naturally spawned populations of winter-run Chinook salmon in the Sacramento River and its tributaries, as well as artificially-propagated fish from the Livingston Stone National Fish Hatchery (70 FR 37160–37204; June 28, 2005). NMFS designated critical habitat for Sacramento River winter-run Chinook salmon on June 16, 1993 (58 FR 33212–33219); however, the Sutter Bypass is not included in the designation of critical habitat for Sacramento River winter-run Chinook salmon. The Sacramento River winter-run Chinook salmon ESU was listed as endangered under CESA in September 1989.

Focused surveys for winter-run Chinook salmon in the Sutter Bypass in the vicinity of the BSA and in Wadsworth Canal were not conducted. Although Butte Creek does not support a spawning population of Sacramento River winter-run Chinook salmon, the Sutter Bypass serves as a migratory corridor for juveniles migrating to the ocean when Sacramento River flows overtop the weirs leading to the bypass (U.S. Fish and Wildlife Service 2000).

Wadsworth Canal and the channels draining to it do not provide suitable spawning habitat for winter-run Chinook salmon; however, juvenile winter-run Chinook salmon may use Wadsworth Canal for non-natal rearing when the Sutter Bypass is inundated because the canal has an adequate connection to the EBC and Sutter Bypass, and lacks any physical barriers downstream of SR 20. Snake River, Little Blue Creek, and the three unnamed streams downstream of the SR 20 crossing do not provide suitable habitat for winter-run Chinook salmon primarily because they lack an adequate hydrologic connection to the Sutter Bypass (i.e., these drainages are located on the land side of the levees bordering Wadsworth Canal and the Sutter Bypass, and their flow is pumped to the Sutter Bypass).

Central Valley Spring-Run Chinook Salmon

The CV spring-run Chinook salmon ESU is federally listed as threatened (70 FR 37160; June 28, 2005). The ESU includes naturally-spawned populations in the Sacramento River and its tributaries, including the Feather and Yuba Rivers, and artificially-propagated fish from the Feather River Fish Hatchery. NMFS designated critical habitat for this ESU on September 2, 2005 (70 FR 52488). The Sutter Bypass is included in the designation of critical habitat for CV spring-run Chinook salmon. The CV spring-run Chinook salmon ESU was listed as threatened under CESA in February 1999.

Focused surveys for CV spring-run Chinook salmon in the Sutter Bypass in the vicinity of the BSA and Wadsworth Canal were not conducted. However, it has been determined that Butte Creek supports a spawning population of CV spring-run Chinook salmon, and that the Sutter Bypass is an important rearing area for Butte Creek juveniles (U.S. Fish and Wildlife Service 2000). In addition, the Sutter Bypass serves as a migratory corridor for Sacramento River juveniles migrating to the ocean when Sacramento River flows overtop the weirs leading to the bypass.

Wadsworth Canal and the channels draining to it do not provide suitable spawning habitat for spring-run Chinook salmon; however, juveniles may use Wadsworth Canal for non-natal rearing in winter and spring when temperatures are suitable because it has an adequate hydrologic connection to the EBC and lacks any physical barriers downstream of SR 20. Snake River, Little Blue Creek, and the three unnamed streams downstream of the SR 20 crossing do not provide suitable habitat for CV spring-run Chinook salmon primarily because they lack an adequate hydrologic connection to the Sutter Bypass (i.e., these drainages are located on the land side of the levees bordering Wadsworth Canal and the Sutter Bypass, and their flow is pumped to the Sutter Bypass).

2.3.5.3 Environmental Consequences

Giant Garter Snake

Direct Impacts

Impacts on giant garter snake habitat would be generally the same under all three alternatives. Due to a difference of opinion, USFWS and CDFW determined different levels of effects on suitable aquatic and upland habitat for giant garter snake (Tables 7 and 8).

Table 7. Impacts on Giant Garter Snake Habitat (USFWS)

Habitat	Aquatic Habitat		Upland Habitat	
	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)
Sutter Bypass	0	0	0	0
Basin between SR 20 and West Butte Road	0	0	0	0
Wetland ditch and irrigation ditch at PM 6.3	0	0.053	0	0.125
Canal between PM 6.5 and PM 6.6	0	0.357	0.012	0.065
Canal at PM 7.0	0	0	0.011	0.050
Irrigation ditch at PM 8.6-9.0	0	0	0	0
Wadsworth Canal	0	0.196	0.131	0.876
Irrigation ditch at PM 10.5 (Little Blue Creek)	0	0.030	0.020	0.109
Humphrey Lateral Canal	0	0	0.379	0.240
Snake River	0	0.033	0	0.108
Total	0	0.669	0.553	1.573

Table 8. Impacts on Giant Garter Snake Habitat (CDFW)

Habitat	Aquatic Habitat		Upland Habitat	
	Permanent (acres)	Temporary (acres)	Permanent (acres)	Temporary (acres)
Sutter Bypass	0	0	0	0
Basin between SR 20 and West Butte Road	0	0	0	0
Wetland ditch and irrigation ditch at PM 6.3	0.003	0.063	0.061	0.130
Canal between PM 6.5 and PM 6.6	0.011	0.028	0.095	0.120
Canal at PM 7.0	0.010	0.012	0.112	0.321
Irrigation ditch at PM 8.6-9.0	0	0	0.542	0.627
Wadsworth Canal	0	0.196	0.168	1.092
Irrigation ditch at PM 10.5 (Little Blue Creek)	0.014	0.016	0.145	0.172
Humphrey Lateral Canal	0	0	0.739	0.240
Snake River	0.010	0.103	0.028	0.48
Total	0.048	0.418	1.89	3.182

Caltrans is assuming that removal of existing piers and replacement of new piers will result in no net loss of aquatic habitat at Wadsworth Canal. USFWS has determined that there would be no permanent impacts on giant garter snake aquatic habitat from the proposed project. Temporary impacts on suitable aquatic habitat would result from water diversion, vegetation clearing, work associated with culvert extensions, and bridge widening or replacement. Temporary impacts on aquatic habitat would occur at all of the locations listed above except for Sutter Bypass, the basin between SR 20 and West Butte Road, the irrigation ditch and emergent wetland at PM 6.3, and Snake River. CDFW has determined that there would be permanent impacts on aquatic habitat for giant garter snake from culvert extensions.

Permanent effects on upland habitat would occur when suitable habitat is converted or replaced with structures or pavement. Permanent effects on upland habitat would occur at all of the locations listed above except for Sutter Bypass, the basin between SR 20 and West Butte Road, the irrigation ditch and emergent wetland at PM 6.3, and Snake River. Temporary impacts from construction activities associated with road widening would occur at all of the locations listed above except for Sutter Bypass and the basin between SR 20 and West Butte Road.

Construction activities in suitable habitat could result in the injury, mortality, or disturbance of giant garter snakes, which requires consultation with USFWS and CDFW. All construction activities within suitable giant garter snake habitat would be limited based on restrictions outlined in the USFWS Biological Opinion and CDFW Incidental Take Permit (ITP). Culvert extension, dewatering, pile driving, and other in-water work could injure, kill, or disturb snakes. Ground-disturbing activities in suitable upland habitat could result in the collapsing of burrows or compaction of other refuge habitat, resulting in entrapment, injury, or mortality of snakes. Holes and trenches left overnight could also entrap snakes. The implementation of measures described below would reduce the potential for impacts on giant garter snake.

Indirect Impacts

Potential indirect effects on giant garter snake and its habitat as a result of the proposed project that were considered were 1) degradation of aquatic and upland habitat adjacent to the widened roadway and 2) changes in habitat suitability as a result of habitat modification. It is anticipated that temporarily disturbed or undisturbed habitat adjacent to the widened roadway would be degraded from weedy plant species invading these areas, and from garbage and other contaminants associated with the roadway entering these areas. Additionally, some new areas of right-of way would be subject to maintenance activities, such as treatment with herbicides, and would become degraded over time.

The proposed project would not result in indirect effects on habitat suitability through changes in the length of inundation or other habitat modifications that would make the habitat less suitable for giant garter snake. Canals, ditches, and other aquatic habitat in and adjacent to the BSA would be operated in the same manner as they were prior to construction.

To reduce potential effects on giant garter snake, Caltrans will implement conditions of the USWS Biological Opinion and CDFW ITP (neither have been received yet) and the following avoidance and minimization measures described previously under “Waters of the United States/Waters of the State” and “Animal Species”:

- Install fencing and/or flagging to protect sensitive biological resources
- Conduct mandatory environmental awareness training for construction personnel
- Retain a qualified biologist to conduct monitoring during construction in sensitive habitats
- Protect water quality and minimize sedimentation in and sediment laden runoff to wetlands and other waters
- Avoid and minimize the spread of invasive plant species during project construction and restore temporarily disturbed grassland

In addition to these measures, Caltrans will also implement a measure to “Avoid and minimize construction effects on giant garter snake” (described below). Caltrans will also implement a measure to “Compensate for permanent and temporary loss of giant garter snake habitat” (described below). This measure would offset the permanent loss of habitat and restore temporarily affected areas that provide suitable habitat for giant garter snake.

Swainson’s Hawk

Swainson’s hawk is a state-listed threatened species. Construction activities would occur during the Swainson’s hawk nesting season (March through August) and could result in the disturbance of Swainson’s hawk. Construction disturbance (noise and/or activity) during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Removal of suitable nest trees in the BSA may reduce the amount of available nesting habitat for Swainson’s hawk and a temporal loss of nesting habitat would continue until replacement trees are mature. Construction of the proposed project would also result in direct permanent and temporary impacts on suitable foraging habitat for Swainson’s hawk (consisting

of seasonal wetland, nonnative grassland, row crop/fallow lands, and ruderal areas). Table 9 summarizes estimated permanent and temporary impacts on suitable nesting and foraging habitat for these species. This table does not include the loss of suitable individual nest trees in the BSA.

Table 9. Impacts on Swainson’s Hawk Habitat

Habitat Type	Impact Acreages	
	Permanent (acres)	Temporary (acres)
Nesting		
Cottonwood-willow woodland	0.36	0
Nonnative woodland	1.00	0.05
Total	1.36	0.05
Foraging		
Seasonal wetland	0.13	0.05
Nonnative annual grassland	5.62	2.15
Row crop/fallow	0	0
Ruderal	15.05	0.92
Total	20.80	3.12

To reduce potential effects on Swainson’s hawk, Caltrans will implement conditions of the CDFW ITP (if this species is covered by the permit) and the following avoidance and minimization measures described previously under “Waters of the United States/Waters of the State” and “Animal Species”:

- Install fencing and/or flagging to protect sensitive biological resources
- Conduct mandatory environmental awareness training for construction personnel
- Retain a qualified biologist to conduct monitoring during construction in sensitive habitats
- Avoid and minimize the spread of invasive plant species during project construction and restore temporarily disturbed grassland
- Remove vegetation during the non-breeding season and conduct preconstruction surveys for nesting migratory birds

In addition to these measures, Caltrans will also implement avoidance and minimization measure to “Conduct focused surveys for nesting Swainson’s hawk prior to construction and implement protective measures during construction” (described below).

If determined to be necessary, Caltrans will also implement a measure to “Compensate for the permanent loss of foraging habitat for Swainson’s hawk” (described below). This compensation measure would offset the permanent loss of areas that provide suitable foraging habitat for Swainson’s hawk.

Tricolored Blackbird

Construction activities would occur during the tricolored blackbird nesting season (late February to early August) and could result in the disturbance of tricolored blackbird. Construction disturbance (noise and/or activity) during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Construction of the proposed project would result in direct permanent and temporary impacts on suitable nesting (Himalayan

blackberry thicket) and foraging habitat (nonnative annual grassland, row crop/fallow lands, and ruderal areas) for tricolored blackbird (see Table 10).

Table 10. Impacts on Tricolored Blackbird Foraging Habitat by Alternative

Habitat Type	Acreage of Impact	
	Permanent (acres)	Temporary (acres)
Nesting		
Himalayan blackberry thicket	0.05	0
Foraging		
Seasonal wetland	0.13	0.05
Nonnative annual grassland	5.62	2.15
Row crop/fallow	0	0
Ruderal	15.05	0.92
Total	20.80	3.12

To reduce potential effects on tricolored blackbird, Caltrans will implement following avoidance and minimization measures described previously under “Waters of the United States/Waters of the State” and “Animal Species”:

- Install fencing and/or flagging to protect sensitive biological resources
- Conduct mandatory environmental awareness training for construction personnel
- Retain a qualified biologist to conduct monitoring during construction in sensitive habitats
- Compensate for impacts on waters of the United States (non-giant garter snake aquatic habitat)
- Avoid and minimize the spread of invasive plant species during project construction and restore temporarily disturbed grassland
- Remove vegetation during the non-breeding season and conduct preconstruction surveys for nesting migratory birds

Because the amount of suitable nesting habitat that would be permanently removed is very small (0.05 acre), no compensation is proposed for this loss. Compensation for the permanent loss of foraging habitat for Swainson’s hawk if required, will also benefit tricolored blackbird.

2.3.5.4 Listed Fish Species

The potential impacts on listed fish (CV steelhead, Sacramento River winter-run Chinook salmon, and CV spring-run Chinook salmon) species would be similar to those described above for non-listed fish species. Potential impacts would be considered significant. To reduce potential effects on listed fish species, Caltrans will implement timing restrictions for in-water work to the required work window (as specified in the permits). Caltrans will also implement any avoidance and minimization measures identified in the USFWS and/or NMFS Biological Opinion (not received yet) and the following avoidance and minimization measures described previously under “Waters of the United States/Waters of the State” and “Animal Species”:

- Protect water quality and minimize sedimentation in and sediment laden runoff to wetlands and other waters
- Dewater or implement other measures to minimize underwater sound pressure while driving piles with an impact hammer

2.3.5.5 CEQA Considerations

The proposed project would result in less than significant impacts on threatened and endangered species with the implementation of the avoidance, minimization and mitigation measures described below.

2.3.5.6 Avoidance, Minimization, and/or Mitigation Measures

Avoid and Minimize Construction Effects on Giant Garter Snake

Caltrans and/or its construction contractor will implement the following measures to avoid, minimize, and compensate for effects on giant garter snake and its habitat.

- All construction activity in giant garter snake aquatic and upland habitat (i.e., within 200 feet of aquatic habitat) will be conducted during the snake's active period (between May 1 and October 1). During this timeframe, potential for injury and mortality are lessened because snakes are actively moving and avoiding danger. In the event that all construction activities in giant garter snake habitat cannot be conducted between May 1 and October 1, all ground disturbing activities in suitable habitat will be initiated prior to September 15.
- Twenty-four hours prior to the commencement of construction activities, suitable habitat within the project area will be surveyed for giant garter snake by a USFWS- and CDFW-approved biologist. The biologist will provide USFWS and CDFW with a written report that adequately documents the survey efforts within 24 hours of commencement of construction activities. Suitable habitat within the project area will be re-inspected by the USFWS- and CDFW-approved biologist whenever a lapse in construction activity of 2 weeks or greater has occurred.
- During construction operations, stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas and all operations will be confined to the minimal area necessary
- A USFWS- and CDFW-approved biologist will inspect and monitor all construction-related activities within suitable habitat to minimize take of giant garter snake and unnecessary destruction of its habitat. If one or more giant garter snakes are encountered during construction activities, the biologist will notify USFWS and CDFW immediately to determine the appropriate procedures for removal and relocation of the snake. A report will be submitted to USFWS and CDFW, including date(s), location(s), habitat description, and any corrective measures taken to protect the snake, within 1 business day. The biologist will be required to report any take of listed species to the USFWS and CDFW immediately by telephone and by electronic mail or written letter within 1 working day of the incident.

- Project-related vehicles will observe a 20-mile-per-hour speed limit within construction areas, except on existing paved roads where they will adhere to the posted speed limits.
- Aquatic habitat for the snake will be dewatered, and remain dry and absent of aquatic prey for 15 days prior to the initiation of any construction activities. If complete dewatering is not possible, USFWS and CDFW will be contacted to determine what additional measures may be necessary to minimize effects to the snake.
- Prior to October 1 and after aquatic habitat has been dewatered, high visibility fencing will be erected around the habitats of the snake to identify and protect these areas from encroachment of personnel and equipment. These ESAs will be avoided by all construction personnel. The fencing will be inspected by the contractor before the start of each work day and maintained by the contractor until completion of the project. Fencing will be established in the uplands immediately adjacent to aquatic snake habitat and extending up to 200 feet from construction activities. Snake exclusionary fencing will be buried at least 6 inches below the ground to prevent snakes from attempting to burrow or move under the fence.
- BMPs will be implemented to minimize the potential for erosion and sedimentation into nearby water bodies.
- After completion of construction activities, Caltrans or its contractor will remove any temporary fill and construction debris and, wherever feasible, restore disturbed areas to pre-project conditions. Restoration work will include activities such as revegetating the banks and active channels of aquatic habitat with an appropriate mix of native species that occur in the project region.
- A photo documentation report showing pre- and post-project area conditions will be submitted to USFWS and CDFW 1 month after restoration is completed.

Compensate for Permanent and Temporary Loss of Giant Garter Snake Habitat

Caltrans will compensate for the permanent and temporary losses of suitable habitat for giant garter snake by preserving the required acreages of habitat for giant garter snake (as dictated by the USFWS BO and CDFW ITP) through purchase of mitigation credits at a USFWS and CDFW-approved conservation bank. The habitat at the conservation bank will be protected in perpetuity for giant garter snake. Prior to the start of construction, Caltrans will purchase giant garter snake preservation credits from the approved conservation bank for the compensation acreages required by USFWS and CDFW. The transaction will take place through a purchase and sale agreement, and funds must be transferred within 30 days, and before any construction activities are initiated. Caltrans will provide USFWS and CDFW with copies of the credit sale agreement and fund transfer.

Conduct Focused Surveys for Nesting Swainson's Hawk Prior to Construction and Implement Protective Measures during Construction

Because construction is anticipated to begin in the middle of the Swainson's hawk nesting period, Caltrans will conduct surveys for nesting Swainson's hawks in the spring of 2018 (i.e., 1 year before construction) to provide information in preparation for construction (i.e., locations of nests, hawks' responses to disturbance, sizes of buffer areas, anticipated impacts on project

schedule). Surveys will also be conducted in the spring of the year of construction (2019) to determine if there are active nests in the current year. Information collected during the 2018 surveys will help to focus the 2019 surveys. Prior to the start of surveys, Caltrans will review the most recent version of the CNDDDB and contact CDFW for information on any active (i.e., within the last 5 years) nest sites within 10 miles of the BSA.

Focused surveys for Swainson's hawk will be conducted in the project area and in a buffer area of up to 0.5 mile radius around the project area. The size of the buffer area surveyed will be based on the type of habitat present and line of sight from the construction area to surrounding suitable breeding habitat. Buffer areas containing unsuitable nesting habitat and/or with an obstructed line of sight to the project area will not be surveyed. Survey methodology will follow the Swainson's Hawk Technical Advisory Committee's methodology (Swainson's Hawk Technical Advisory Committee 2000). A minimum of six surveys will be conducted during the appropriate timeframes discussed in the methodology. If needed, biologists will coordinate with CDFW regarding the extent and number of surveys. Surveys would generally be conducted from February to July. Survey methods and results will be reported to CDFW.

Compensate for the Permanent Loss of Foraging Habitat for Swainson's Hawk

Caltrans will mitigate for the permanent removal of suitable foraging habitat (seasonal wetland, nonnative grassland, and row crop/fallow areas) for Swainson's hawks by providing offsite habitat management lands at a 1:1 ratio (habitat preserved: habitat removed) or as required by CDFW. If acceptable to CDFW, Caltrans may also be able to purchase mitigation credits for Swainson's hawk foraging habitat from a CDFW-approved mitigation or conservation bank. Information on the nearest nest will be collected during Swainson's hawk surveys, discussed above, for consultation with CDFW on the required mitigation ratio. If no active nests are found during this survey, a search of the CNDDDB will be conducted, and CDFW will be contacted to determine the nearest active nest.

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 (GHG) emissions, particularly those generated from the production and use of fossil fuels.

Although climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with GHG emissions generated by human activity, including carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (1, 1, 1, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the United States, the main source of GHG 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 GHG-emitting sources. The dominant GHG emitted is CO₂, 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 GHG 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 GHG emissions from transportation sources: 1) improving the transportation system and operational efficiencies, 2) reducing travel activity, 3) transitioning to lower GHG-emitting fuels, and 4) improving vehicle technologies and efficiency. To be most effective all four strategies should be pursued cooperatively.⁴

2.4.1 Regulatory Setting

2.4.1.1 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 GHG emissions and climate change.

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

EO S-3-05 (June 1, 2005), with the goal of reducing California’s GHG emissions to: 1) year 2000 levels by 2010, 2) year 1990 levels by the 2020, and 3) 80% below year 1990 levels by 2050. In 2006, this goal was further reinforced with the passage of AB 32.

AB 32, Núñez and Pavley, The Global Warming Solutions Act of 2006, which sets the same overall GHG emissions reduction goals as outlined in EO S-3-05, while further mandating that ARB create a scoping plan and implement rules to achieve “real, quantifiable, cost-effective reductions of greenhouse gases.”

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

EO S-01-07 (January 18, 2007) set forth the low carbon fuel standard for California. Under this EO, the carbon intensity of California’s transportation fuels is to be reduced by at least 10% by the year 2020.

³ http://climatechange.transportation.org/ghg_mitigation/

⁴ http://www.fhwa.dot.gov/environment/climate_change/mitigation/

Senate Bill (SB) 97 Chapter 185, 2007, Greenhouse Gas Emissions, required the Governor's Office of Planning and Research to develop recommended amendments to the CEQA Guidelines for addressing GHG emissions. The amendments became effective on March 18, 2010.

SB 375, Chapter 728, 2008, Sustainable Communities and Climate Protection, requires ARB to set regional emissions reduction targets from passenger vehicles. The Metropolitan Planning Organization for each region must then develop a Sustainable Communities Strategy that integrates transportation, land use, and housing policies to plan for the achievement of the emissions target for their region.

SB 391, Chapter 585, 2009 California Transportation Plan, which requires the State's long-range transportation plan to meet California's climate change goals under AB 32.

2.4.1.2 Federal

Although climate change and GHG reduction are a concern at the federal level, currently no regulations or legislation have been enacted that specifically address GHG emissions reductions and climate change at the project level. Neither EPA nor FHWA has issued explicit guidance or methods to conduct project-level GHG analysis.⁵ FHWA 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 FHWA 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.

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

EO 13514 (October 5, 2009) is focused on reducing greenhouse gases internally in federal agency missions, programs and operations, but also direct 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.

⁵ To date, no national standards have been established regarding mobile source GHGs, nor has EPA established any ambient standards, criteria, or thresholds for GHGs resulting from mobile sources.

EPA's authority to regulate GHG emissions stems from the U.S. Supreme Court decision in *Massachusetts v. EPA* (2007). The Supreme Court ruled that GHGs 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, EPA finalized an endangerment finding in December 2009. Based on scientific evidence it found that six GHGs constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing Act and EPA's assessment of the scientific evidence that form the basis for EPA's regulatory actions. EPA, in conjunction with the National Highway Traffic Safety Administration (NHTSA) issued the first of a series of GHG emission standards for new cars and light-duty vehicles in April 2010.⁶

EPA and NHTSA are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever GHG regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle GHG 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 2012–2016. The standards implemented by this program are expected to reduce GHG emissions by an estimated 960 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, EPA and NHTSA issued a joint Final Rulemaking to extend the National Program for fuel economy standards to model year 2017–2025 passenger vehicles. Over the lifetime of the model year 2017–2025 standards this program is projected to save approximately 2 billion metric tons of GHG emissions and 4 billion barrels of oil.

The complementary EPA and NHTSA 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 GHG emissions and domestic oil use significantly. This program responds to President Barack Obama's 2010 request to jointly establish GHG emissions and fuel efficiency standards for the medium- and heavy-duty highway vehicle sector. The agencies estimate that the combined standards will reduce CO₂ emissions by about 270 million metric tons and save about 530 million barrels of oil over the life of model year 2014–2018 heavy-duty vehicles.

2.4.2 Environmental Consequences

An individual project does not generate enough GHG 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 GHG.⁷ In assessing cumulative impacts, it must be

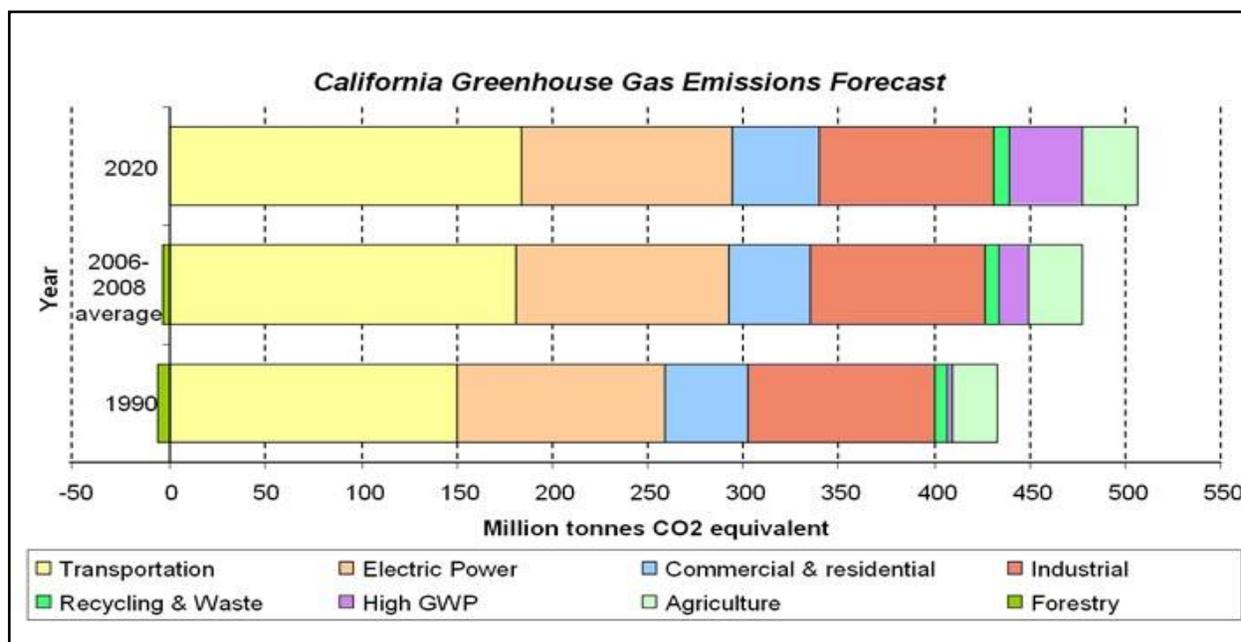
⁶ <http://www.c2es.org/federal/executive/epa/greenhouse-gas-regulation-faq>

⁷ This approach is supported by the Association of Environmental Professionals: *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

determined if a project’s incremental effect is “cumulatively considerable” (CEQA Guidelines § 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.

The AB 32 Scoping Plan mandated by AB 32 includes the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the Draft Scoping Plan, the ARB released the GHG inventory for California, which is indicated in Figure 3 (forecast last updated October 28, 2010). 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 GHG inventory for 2006, 2007, and 2008.

Caltrans and its parent agency, the Transportation Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California’s GHG emissions are from the burning of fossil fuels and 40 percent of all human-made GHG emissions are from transportation, Caltrans has created and is implementing the Climate Action Program at Caltrans that was published in December 2006.⁸



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

Figure 3. California Greenhouse Gas Forecast

CEQA Guide, April 2011) and the U.S. Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

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

2.4.2.1 Potential for Generation of Greenhouse Gas Contaminant Emissions

Operational Emissions

The proposed project will improve safety along this section of road and will have no impact on traffic flow. These improvements will not impact long-term GHG emissions. Since this project will have a neutral effect on GHG emissions, it will not disrupt the current downward trend in GHG emissions. Therefore, this project will not interfere with the strategies of Caltrans' Climate Action Program

Construction Emissions

Construction GHG 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. The Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model (Version 7.1.5.1) was used to estimate CO₂ emissions from construction activities. The Road Construction Emissions Model does not include emission factors for CH₄ or N₂O for off-road diesel equipment or on-road gasoline vehicles. Emissions of CH₄ and N₂O from diesel-powered equipment were determined by scaling the CO₂ emissions estimate for diesel equipment by the ratio of CH₄/CO₂ (0.000056) and N₂O/CO₂ (0.000025) (Climate Registry 2015). Emissions of CH₄, N₂O, and other trace GHGs were determined by dividing the CO₂ emissions estimate for gasoline vehicles by 0.95. This statistic is based on U.S. EPA's assessment that CH₄, N₂O, and other trace GHGs account for 1% to 5% of on-road emissions (U.S. Environmental Protection Agency 2015).

Table 11 summarizes estimated GHG emissions generated by onsite construction equipment over the 12-month construction period. These emissions would 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 GHG emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events.

Table 11. Total GHG Emissions from Construction of Project (metric tons)

Construction Year Activities	Diesel Equipment			Gasoline Vehicles		CO ₂ e ^b
	CO ₂	CH ₄	N ₂ O	CO ₂	Other ^a	
Grubbing/Land Clearing	39	0.0	0.0	5	0	45
Grading/Excavation	1,251	0.1	0.0	31	2	1,295
Drainage/Utilities/Sub-Grade	258	0.0	0.0	27	1	289
Paving	42	0.0	0.0	12	1	55
Total	1,590	0.1	0.0	76	4	1,683

^a Includes CH₄, N₂O, and other trace GHGs emissions emitted by typical passenger vehicles (U.S. Environmental Protection Agency 2015).

^b Refers to carbon dioxide equivalent (CO₂e), which accounts for the relative warming capacity of each gas (CO₂ has a global warming potential [GWP] of 1 by definition). CO₂e was calculated based on the Road Construction Emissions Model outputs for CO₂, CH₄, and N₂O and the GWPs from the Intergovernmental Panel on Climate Change's Forth Assessment Report (which are 25 for CH₄ and 298 for N₂O).

As discussed above, the safety improvements will have no impact on traffic flow or long-term GHG emissions. Construction of the project would generate 1,683 metric tons of carbon dioxide equivalent (CO_{2e}) over the 12-month construction period. Currently, neither Caltrans nor the Feather River Air Quality Management District (FRAQMD) have adopted GHG significance thresholds that apply to construction projects. Therefore, it is Caltrans determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a determination regarding significance of the project's direct impact and its contribution on the cumulative scale to climate change. However, Caltrans will implement minimization measures to help reduce the potential effects of the project.

2.4.3 CEQA Considerations

The proposed project would result in less-than-significant impacts related to climate change.

2.4.4 Avoidance, Minimization, and/or Mitigation Measures

No mitigation is required. However, Caltrans will implement minimization measures to reduce construction emissions including maintenance of construction equipment and vehicles, and scheduling and routing of construction traffic to reduce engine emissions.

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The following agency staff and consultants contributed to the preparation or review of this Initial Study/Proposed Mitigated Negative Declaration.

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Appendix A CEQA Checklist

Appendix A Initial Study Checklist

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

<input type="checkbox"/>	Aesthetics	<input checked="" type="checkbox"/>	Agriculture and Forestry	<input type="checkbox"/>	Air Quality
<input checked="" type="checkbox"/>	Biological Resources	<input type="checkbox"/>	Cultural Resources	<input type="checkbox"/>	Geology/Soils
<input type="checkbox"/>	Greenhouse Gas Emissions	<input checked="" type="checkbox"/>	Hazards and Hazardous Materials	<input checked="" type="checkbox"/>	Hydrology/Water Quality
<input type="checkbox"/>	Land Use/Planning	<input type="checkbox"/>	Mineral Resources	<input type="checkbox"/>	Noise
<input type="checkbox"/>	Population/Housing	<input type="checkbox"/>	Public Services	<input type="checkbox"/>	Recreation
<input checked="" type="checkbox"/>	Transportation/Traffic	<input type="checkbox"/>	Utilities/Service Systems	<input type="checkbox"/>	Mandatory Findings of Significance

Determination

On the basis of this initial evaluation:

<input type="checkbox"/>	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
<input checked="" type="checkbox"/>	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
<input type="checkbox"/>	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
<input type="checkbox"/>	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
<input type="checkbox"/>	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required

Signature: <i>Sue Bauer</i>	Date: <i>5-26-16</i>
Printed Name: <i>SUE BAUER</i>	For:

Impacts Checklist

The following impacts checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. The California Environmental Quality Act (CEQA) impact levels include “potentially significant impact,” “less than significant impact with mitigation,” “less than significant impact,” and “no impact.” A brief explanation of each CEQA checklist determination follows each resource topic. Chapter 2 provides a more detailed discussion of the checklist items marked as “less than significant impact” or “less than significant impact with mitigation.”

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>“No impact” determinations in this section are based on review of the project area and the results in the Community Impact Assessment (ICF International 2016a). There are no scenic vistas or scenic resources in the project area. The proposed project involves only minor changes in the existing roadway and would not degrade the existing rural character of the area. There would be temporary visual impacts resulting from construction (i.e., construction equipment, a new bridge), however, there would be no long-term impact on visual character. The project would not introduce new sources of light or glare.</p>				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

“No impact” and “Less than Significant” determinations in this section are based on the Community Impact Assessment (ICF International 2016a). No forest resources are located in the project area or adjacent to the proposed project. A more detailed discussion of topics checked “less than significant” may be found in Chapter 2.

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:

a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

“No impact” and “Less than Significant” determinations in this section are based on the Climate Change and MSAT Report (California Department of Transportation 2016b).

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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 Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The significance determinations in this section are based on the Natural Environment Study (ICF International 2015b), aquatic resources delineation report (ICF International 2016c), and Caltrans' Biological Assessment prepared for the proposed project (California Department of Transportation 2016c. A more detailed discussion of topics checked "less than significant" and "less than significant with mitigation" may be found in Chapter 2.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES: Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>“No Impact” determinations in this section are based on the Historic Property Survey Report (California Department of Transportation 2016b). Two cultural resources are located near the project area. These include the Wadsworth Canal (P-51-000140) and the Sutter Bypass Levee (CA-SUT-147H). The Wadsworth Canal was previously evaluated by the USACE for the National Register of Historic Places (NRHP) and determined not to be eligible for listing. Additionally, work on the Sutter Bypass Levee is limited to staging and minor shoulder widening on existing fill prism and would have no potential to effect it. As a result, it is outside the area of potential effect (APE). No other resources, archaeological or built-environment, are within the project area.</p>				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

“No Impact” and “Less than Significant Impact” determinations in this section are based on regional geologic mapping (Saucedo and Wagner 1992), Natural Resources Conservation Service Web Soil Survey data (Natural Resources Conservation Service 2016), and a site reconnaissance.

Parts of the western 2/3 of the ESL, where basin soils occur, are underlain by the following soil map units that appear to be expansive, as defined by the Uniform Building Code: Oswald clay, 0 to 2 percent slopes, Capay silty clay, 0 to 2 percent slopes, and Subuco clay, 0 to 2 percent slopes. Such soils are subject to shrinking and swelling caused by seasonal changes in moisture content. If not properly engineered, project facilities such as pavement could be damaged or present a hazard to motorists. However, because measures to engineer the project improvements are required by the California Building Code, the potential impact would be less than significant.

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?
- b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

An assessment of the greenhouse gas emissions and climate change is included in the body of this environmental document following the checklist. While Caltrans has included 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.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

“No Impact” and “Less than Significant Impact” determinations in this section are based on the Hazardous Waste Initial Site Assessment (California Department of Transportation 2015a and a review of the Department of Toxic Substances Control (DTSC) and SWRCB hazardous materials sites databases (Department of Toxic Substances Control 2016, State Water Resources Control Board 2016). A more detailed discussion of topics checked “less than significant impact” may be found in Chapter 2.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
IX. HYDROLOGY AND WATER QUALITY: Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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“No impact” and “Less than Significant Impact” determinations in this section are based on the Floodplain Hydraulic Study (California Department of Transportation 2015b), Preliminary Hydraulic Report for Wadsworth Canal Bridge (California Department of Transportation 2013), Long Form - Storm Water Data Report (Caltrans undated), and Water Quality Assessment for 03-1A920 (California Department of Transportation 2016d), Natural Resources Conservation Service Web Soil Survey data (Natural Resources Conservation Service 2016), and a site reconnaissance field visit.

X. LAND USE AND PLANNING: Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Physically divide an established community? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Conflict with any applicable habitat conservation plan or natural community conservation plan? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

“No Impact” determinations in this section are based on the Community Impact Assessment (ICF International 2016a).

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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

“No Impact” determinations in this section are based on the Community Impact Assessment (ICF International 2016a).

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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
“No impact” and “less than significant impact” determinations in this section are based on the Traffic Noise Analysis Memorandum (Caltrans 2016e). A more detailed discussion of topics checked “less than significant impact” may be found in Chapter 2.				

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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

“No Impact” determinations in this section are based on the Community Impact Assessment (ICF International 2016a). The proposed project would not create additional capacity on SR 20. Travel times, accessibility, and capacity would remain the same and not contribute to population growth in the area. The project is intended to bring this section of SR 20 up to current Caltrans standards and would not displace people or existing housing.

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

“No Impact” determinations in this section are based on the Community Impact Assessment (ICF International 2016a). The project does not include impacts associated with the provision of new or altered governmental facilities.

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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

“No Impact” determinations in this section are based on the Community Impact Assessment (ICF International 2016a). There are no parks or recreational facilities in the project vicinity, other than the Sutter Bypass. Access to the bypass would be maintained during construction.

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? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Result in inadequate emergency access? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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“No impact” and “less than significant” determinations in this section are based on the Transportation Management Plan Data Sheet (Caltrans December 2015c). A more detailed discussion of the topic may be found in Chapter 2.

XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:

- | | | | | |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 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? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Be served by a landfill with sufficient permitted capacity to accommodate the project’s solid waste disposal needs? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) Comply with federal, state, and local statutes and regulations related to solid waste? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Project does not include impacts associated with wastewater or potable water conveyance or treatment facilities. Stormwater determinations in this section are based on the Hydrology and Hydraulic Memorandum (WRECO 2015a). Project would not create a new source of solid waste.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

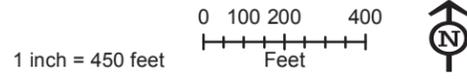
Appendix B Layout Sheets

Sutter Bypass
Widening and Rehabilitation Project
May 2016
Sheet 1



Legend

- Environmental Study Limit
- State Highway Postmile
- Alternative 1 and 2 (Alignment A1)**
- Alignment A
- Caltrans Right of Way
- Temporary Construction Easement
- Alternative 3 (Alignment B1)**
- Alignment B
- Caltrans Right of Way
- Temporary Construction Easement



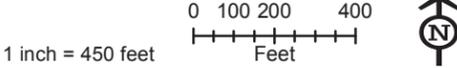
Base Data Sources: NHD (2014); ESRI (2014);
Caltrans (2015)
Imagery Source: ESRI/NAIP 2014

Sutter Bypass
 Widening and Rehabilitation Project
 May 2016
 Sheet 2



Legend

-  Environmental Study Limit
-  State Highway Postmile
- Alternative 1 and 2 (Alignment A1)**
-  Alignment A
-  Caltrans Right of Way
-  Temporary Construction Easement
- Alternative 3 (Alignment B1)**
-  Alignment B
-  Caltrans Right of Way
-  Temporary Construction Easement

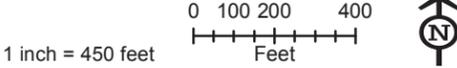


Base Data Sources: NHD (2014); ESRI (2014);
 Caltrans (2015)
 Imagery Source: ESRI/NAIP 2014

Sutter Bypass
 Widening and Rehabilitation Project
 May 2016
 Sheet 3

Legend

-  Environmental Study Limit
-  State Highway Postmile
- Alternative 1 and 2 (Alignment A1)**
-  Alignment A
-  Caltrans Right of Way
-  Temporary Construction Easement
- Alternative 3 (Alignment B1)**
-  Alignment B
-  Caltrans Right of Way
-  Temporary Construction Easement

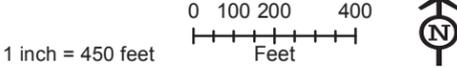
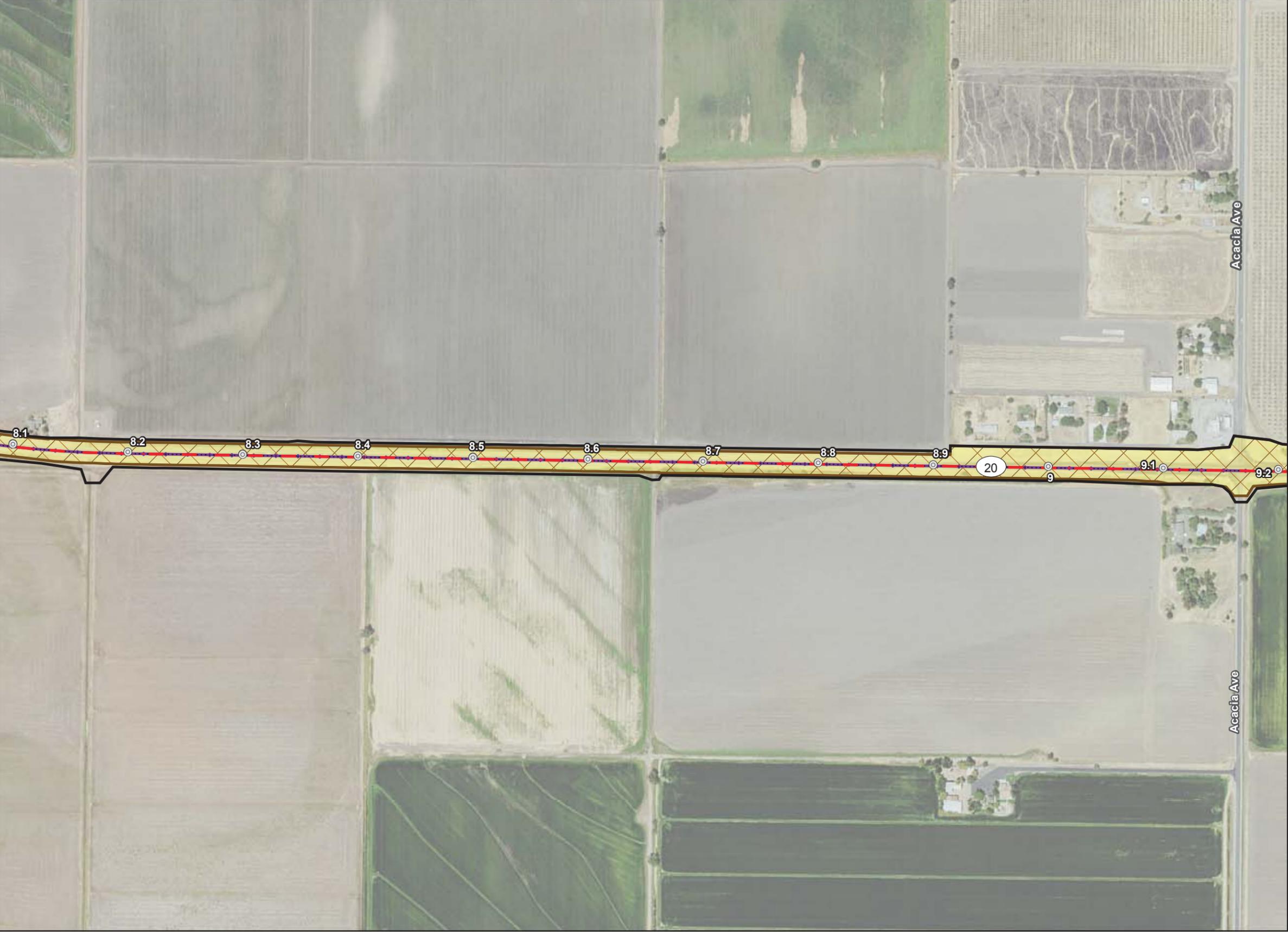


Base Data Sources: NHD (2014); ESRI (2014);
 Caltrans (2015)
 Imagery Source: ESRI/NAIP 2014

Sutter Bypass
 Widening and Rehabilitation Project
 May 2016
 Sheet 4

Legend

-  Environmental Study Limit
-  State Highway Postmile
- Alternative 1 and 2 (Alignment A1)**
-  Alignment A
-  Caltrans Right of Way
-  Temporary Construction Easement
- Alternative 3 (Alignment B1)**
-  Alignment B
-  Caltrans Right of Way
-  Temporary Construction Easement



Base Data Sources: NHD (2014); ESRI (2014);
 Caltrans (2015)
 Imagery Source: ESRI/NAIP 2014

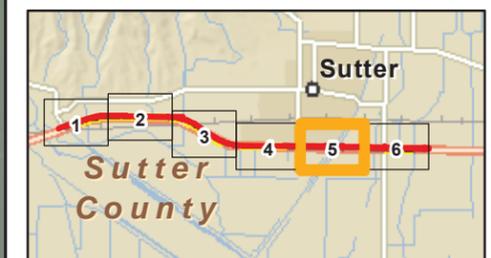
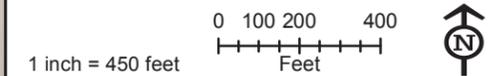
Legend

-  Environmental Study Limit
-  State Highway Postmile
- Alternative 1 and 2 (Alignment A1)**
-  Alignment A
-  Caltrans Right of Way
-  Temporary Construction Easement
- Alternative 3 (Alignment B1)**
-  Alignment B
-  Caltrans Right of Way
-  Temporary Construction Easement



Alignment A1 and
Alignment B1 Split
Here - 237+08.92

Alignment A1 and
Alignment B1 Split Here
- 285+42.02/285+40.89

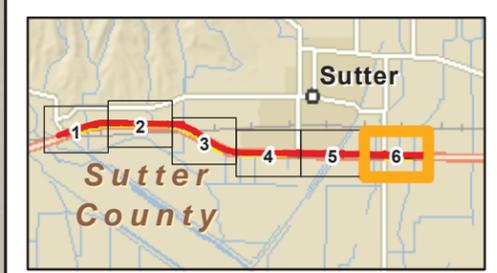
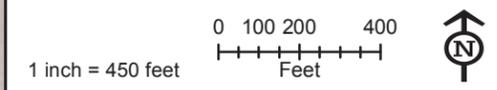


Base Data Sources: NHD (2014); ESRI (2014);
Caltrans (2015)
Imagery Source: ESRI/NAIP 2014



Legend

- Environmental Study Limit
- State Highway Postmile
- Alternative 1 and 2 (Alignment A1)**
- Alignment A
- Caltrans Right of Way
- Temporary Construction Easement
- Alternative 3 (Alignment B1)**
- Alignment B
- Caltrans Right of Way
- Temporary Construction Easement



Base Data Sources: NHD (2014); ESRI (2014);
 Caltrans (2015)
 Imagery Source: ESRI/NAIP 2014

Appendix C Title VI Statement

DEPARTMENT OF TRANSPORTATION

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March 2013

**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 the California Department of Transportation, Office of Business and Economic Opportunity, 1823 14th Street, MS-79, Sacramento, CA 95811. Telephone: (916) 324-0449, TTY: 711, or via Fax: (916) 324-1949.

A handwritten signature in blue ink, appearing to read "Malcolm Dougherty".

MALCOLM DOUGHERTY
Director

Appendix D Avoidance, Minimization, and Mitigation Summary

Appendix D Avoidance, Minimization and/or Mitigation Summary

This appendix contains the avoidance, minimization, and mitigation measures that have been identified in the Initial Study/Proposed Mitigated Negative Declaration (IS/Proposed MND) to mitigate for potentially significant impacts. The IS/Proposed MND describes several project-related impacts on biological resources (described in the document under “Biological Environment”) that would be considered significant but can be mitigated to a less-than-significant level through the implementation of avoidance, minimization, and/or mitigation. The IS/Proposed MND did not identify any other significant impacts on environmental factors (as shown in the CEQA Checklist, Appendix A).

A summary of the biological resources avoidance and minimization, and/or mitigation measures identified in the IS/Proposed MND is provided below for natural communities, animal species, and threatened and endangered species.

D.1 Waters of the United States/Waters of the State

The proposed project would result in the potential permanent impacts on 1.13 acres and temporary impacts on 0.74 acre of waters of the United States/waters of the State. Wetlands and non-wetland waters provide important habitat for resident and migratory species, as well as water quality benefits, and have been in decline nationwide.

D.1.1 Avoidance and Minimization Measures

The following measures would be implemented by Caltrans to avoid and minimize temporary effects on wetlands and non-wetland waters:

Install Fencing and/or Flagging to Protect Sensitive Biological Resources

Prior to construction, Caltrans’ contractor will install high-visibility orange construction fencing and/or flagging, as appropriate, along the perimeter of the work area adjacent to Environmentally Sensitive Areas (ESAs) (e.g., wetlands, other waters, special-status species habitat, and active bird nests). Where specific buffer distances are required for sensitive biological resources (e.g., special-status species habitats and active bird nests), they will be specified under the corresponding measures identified below. Caltrans will ensure that the final construction plans show the locations where fencing will be installed. The plans will also define the fencing installation procedure. Caltrans will also ensure that the fencing is maintained throughout the duration of the construction period. If the fencing is removed, damaged, or otherwise compromised during the construction period, construction activities will cease until the fencing is repaired or replaced. The project’s special provisions package will provide clear language regarding acceptable fencing material and prohibited construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within ESAs.

Conduct Mandatory Environmental Awareness Training for Construction Personnel

Before any ground breaking disturbance occurs, including grading and tree removal, a consulting biologist will conduct a mandatory contractor/worker environmental awareness training for construction personnel. The awareness training will be provided to all construction personnel (contractors and subcontractors) to brief them on the need to avoid effects on sensitive biological resources (e.g., wetlands, special-status species, and nesting birds) adjacent to the work area and the penalties for not complying with applicable state and federal laws and permit requirements. The biologist will inform all construction personnel about the life history and habitat requirements of special-status species with potential for occurrence onsite, the importance of maintaining habitat, and the terms and conditions of the biological opinion or other authorizing documents. Proof of this instruction will be submitted to Caltrans, and other agencies (e.g., CDFW, USFWS, and National Marine Fisheries Service [NMFS]), as appropriate.

The environmental training will also cover general restrictions and guidelines that must be followed by all construction personnel to reduce or avoid effects on sensitive biological resources during project construction. General restrictions and guidelines that must be followed by construction personnel are listed below.

- Project-related vehicles will observe the posted speed limit on hard-surfaced roads and a 20 mile-per-hour speed limit on unpaved roads or access areas in the work area during travel within the project limits.
- Project-related vehicles and construction equipment will restrict off-road travel to the work area.
- Vegetation clearing and construction operations will be limited to the minimum necessary in areas of temporary access work areas and staging.
- All food-related trash will be disposed of in closed containers and removed from the work area at least once a week during the construction period. Construction personnel will not feed or otherwise attract wildlife to the project work area.
- No pets or firearms will be allowed in the project work area.
- To prevent possible resource damage from hazardous materials such as motor oil or gasoline, construction personnel will not service vehicles or construction equipment outside designated staging areas and TCE's.
- The training will also include identifying the BMPs written into construction specifications for avoiding and minimizing the introduction and spread of invasive plants (see measure to “*Avoid and minimize the spread of invasive plant species during project construction and restore temporarily disturbed grassland*”) and the rationale behind their implementation during project construction.

Retain a Qualified Biologist to Conduct Monitoring during Construction in Sensitive Habitats

The consulting biologist will monitor all construction activities that involve ground disturbance (e.g., vegetation removal, grading, excavation, bridge construction) within or adjacent to ESAs (e.g., wetlands, special-status species habitat, and active bird nests). The purpose of the monitoring is to ensure that measures identified in this IS/Proposed MND are properly implemented to avoid and minimize effects on sensitive biological resources and to ensure that the project complies with all applicable permit requirements and agency conditions of approval. The biologist will ensure that fencing around ESAs remains in place during construction and that no construction personnel, equipment, or runoff/sediment from the construction area enters ESAs. A final monitoring report will be prepared in compliance with the Biological Opinion and other permit requirements and submitted to the required agencies.

Protect Water Quality and Minimize Sedimentation in and Sediment-Laden Runoff to Wetlands and Other Waters

Caltrans will comply with all construction site BMPs specified in the SWPPP and any other permit conditions to minimize the introduction of construction-related contaminants and mobilization of sediment in wetlands and other waters in and adjacent to the designated work area. These BMPs will address soil stabilization, sediment control, wind erosion control, vehicle tracking control, non-storm water management, and waste management practices. The BMPs will be based on the best conventional and best available technology.

The proposed project is subject to storm water quality regulations established under NPDES, described in Section 402 of the federal CWA. In California, the NPDES program requires that any construction activity disturbing 1 or more acres comply with the statewide General Permit, as authorized by the State Water Board. The General Permit requires elimination or minimization of non-storm water discharges from construction sites and development and implementation of a SWPPP for the site. The primary elements of the SWPPP include the following.

- Description of site characteristics—including runoff and streamflow characteristics and soil erosion hazard—and construction procedures.
- Guidelines for proper application of erosion and sediment control BMPs.
- Description of measures to prevent and control toxic materials spills.
- Description of construction site housekeeping practices.

In addition to these primary elements, the SWPPP will specify that the extent of soil and vegetative disturbance will be minimized by control fencing or other means and that the extent of soil disturbed at any given time will be minimized. The SWPPP must be retained at the construction site. Caltrans will perform routine inspections of the construction area to verify that the BMPs are properly implemented and maintained.

The BMPs will include, but are not limited to, the following.

- Conduct all earthwork or foundation activities involving wetlands and other waters in the dry season.
- Use only equipment in good working order and free of dripping or leaking engine fluids when working in and around drainages and wetlands. Perform all vehicle maintenance at least 300 feet from all drainages and wetlands. Conduct any necessary equipment washing where the water cannot flow into drainages or wetlands.
- Prohibit the following types of materials from being rinsed or washed into the streets, shoulder areas, or gutters: concrete, solvents and adhesives, thinners, paints, fuels, sawdust, dirt, gasoline, asphalt and concrete saw slurry, and heavily chlorinated water.
- Prevent discharge of turbid water to the Sutter Bypass and tributary drainages during any construction activities by filtering the discharge first using a filter bag, diverting the water to a settling tank or infiltration areas, and/or treating the water in a manner to ensure compliance with water quality requirements prior to discharging water to waterways.
- Prevent discharge of concrete to aquatic habitat as concrete is being poured, as required by the NPDES permit.
- Dispose of any surplus concrete rubble, asphalt, or other rubble from construction at a local landfill.
- Prepare and implement an erosion and sediment control plan for the proposed project. The plan will include the provisions and protocols listed below. The SWPPP for the project will detail the applications and type of measures and the allowable exposure of unprotected soils.

Caltrans will also obtain a 401 water quality certification from the Central Valley RWQCB and LSAA from CDFW that may contain additional BMPs and water quality measures to ensure the protection of water quality.

Mitigation Measures

To mitigated for permanent impacts on 1.13 acres of waters of the United States/waters of the State (seasonal wetland, emergent wetland, canal, irrigation ditch, and roadside ditch), Caltrans will compensate for the permanent loss of these features. Implementation of the following measure would reduce significant impacts to a less significant level:

Compensate for Impacts on Waters of the United States/waters of the State (Non-Giant Garter Snake Aquatic Habitat)

To compensate for permanent project impacts on waters of the United States, including wetlands that do not provide suitable aquatic habitat for giant garter snake, Caltrans will purchase credits at a USACE-approved mitigation bank to ensure no net loss of wetland habitat functions and values. The minimum wetland compensation ratio for wetlands that are not considered suitable giant garter snake habitat will be 1:1 (1 acre of wetland habitat credit for every 1 acre of impact) to ensure no net loss of wetland habitat functions and values. As described under the measure to

“Compensate for permanent and temporary loss of giant garter snake habitat”, Caltrans will compensate for the permanent and temporary loss of habitat through the purchase of mitigation credits at an USFWS and CDFW-approved conservation bank. In some cases, Caltrans may determine that onsite restoration of temporarily disturbed waters of the United States (that do not provide habitat for giant garter snake) may be appropriate. The final acreage of impact and compensation will be determined as part of the permitting phase of the proposed project.

Caltrans will also implement the conditions and requirements of state and federal permits that will be obtained for the proposed project.

D.2 Animal Species

The proposed project could result in a variety of direct and indirect impacts on non-listed special-status wildlife and fish species, including western pond turtle, pallid bat, western red bat, and roosting colonies of non-special-status bats, and Central Valley fall- and late fall-run Chinook salmon. These species are protected under a variety of state and federal regulations and substantial effects on the species are considered significant under CEQA.

D.2.1 Avoidance and Minimization Measures

In addition to some of the avoidance and minimization measures listed above under “Natural Communities”, the following measures would also be implemented by Caltrans to avoid and minimize temporary effects on non-listed special-status species:

Conduct Preconstruction Surveys for Western Pond Turtle and Monitor Initial In-Water Work

To avoid potential injury or mortality of western pond turtles, Caltrans will retain a qualified biologist (i.e., one who is approved by Caltrans and is also CDFW-approved to capture and relocate turtles) to conduct a preconstruction survey for western pond turtles within 24 hours of the start of construction. The biologist will survey the aquatic habitat and adjacent upland habitat within the construction area. If in-water work does not start immediately, the biologist will return to the construction site immediately prior to the start of in-water work to conduct another preconstruction survey. If a turtle becomes trapped during initial in-water work, the biologist will relocate the individual to suitable aquatic habitat upstream or downstream of the construction area. For the remainder of construction, the biologist will remain on-call in case a turtle is discovered. The construction crew will be instructed to notify the crew foreman if a turtle is found trapped within the construction area. The foreman will contact the biologist and work in the area where the turtle is trapped will stop until the biologist arrives and removes and relocates the turtle. The biologist will report their activities to Caltrans and CDFW within 1 day of relocating any turtle.

Avoid and Minimize the Spread of Invasive Plant Species during Project Construction and Restore Temporarily Disturbed Grassland

Caltrans or its contractor will be responsible for avoiding and minimizing the introduction of new invasive plants and the spread of invasive plants previously documented in the BSA. Two or more of the BMPs listed below will be written into the construction specifications and implemented during project construction.

- Retain all fill material onsite to prevent the spread of invasive plants to uninfested areas.
- Use a weed-free source for project materials (e.g., straw wattles for erosion control that are weed-free or contain less than 1% weed seed).
- Prevent invasive plant contamination of project materials during transport and when stockpiling (e.g., by covering soil stockpiles with a heavy-duty, contractor-grade tarpaulin).
- Use sterile wheatgrass seed and native plant stock during revegetation.

The goal for implementation of two or more of these BMPs is to minimize the disturbance and transport of soil and vegetation to the greatest extent feasible to complete the work. Detailed information about implementing these BMPs can be found in Cal-IPC's *Preventing the Spread of Invasive Plants: Best Management Practices for Transportation and Utility Corridors* (California Invasive Plant Council 2012).

Additionally, upon project completion, Caltrans will restore all temporarily disturbed grassland to pre-project or better conditions.

Remove Vegetation during the Non-Breeding Season and Conduct Preconstruction Surveys for Nesting Migratory Birds

To the maximum extent feasible, vegetation removal (trees, shrubs, and ground vegetation) will occur during the non-breeding season for most migratory birds (generally between October 1 and January 31). This timing is highly preferable because if an active nest is found during preconstruction surveys (described below) in a tree (or other vegetation) that would be removed by project construction, the tree (or other vegetation) cannot be removed until the end of the nesting season, which could delay construction. If vegetation cannot be removed between October and January, or if ground cover re-establishes in areas where vegetation has been removed, the affected area must be surveyed for nesting birds, as discussed below.

If construction activities are expected to begin during the nesting season for birds (generally February 1 through September 30), Caltrans will retain a qualified wildlife biologist with knowledge of the relevant species to conduct nesting surveys before the start of construction. A minimum of two separate surveys will be conducted for migratory birds, including raptors. Surveys will include a search of ground vegetation, and all trees and shrubs that provide suitable nesting habitat in the project area. In addition, a 500-foot radius around the project area will be surveyed for nesting raptors. If possible, the first survey should occur during the height of the breeding season (March 1 to June 1) and the final survey will occur within 1 week of the start of

construction. If no active nests are detected during these surveys, no additional measures are required.

If an active nest is found in the survey area, a no-disturbance buffer area will be established around the nest site to avoid disturbance or destruction of the nest until the end of the breeding season (September 30) or until after a qualified wildlife biologist determines that the young have fledged and moved out of the project area (this timing varies by species). The extent of each buffer areas will be determined by the biologist in coordination with USFWS and CDFW and will depend on the level of noise or construction disturbance, line-of-sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. Suitable buffer distances may vary between species.

Implement Measures to Deter Swallow and Black Phoebe Nesting Prior to the Nesting Season

To avoid impacts on swallows and black phoebes nesting on the Wadsworth Canal Bridge and concrete box culverts, Caltrans will implement the following measures prior to the start of the nesting period.

- Caltrans will have a qualified wildlife biologist inspect Wadsworth Canal Bridge and concrete box culverts during the swallows' non-breeding season (September 1 through February 28). If nests are found and are abandoned, they may be removed. To avoid damaging active nests on these structures, nests must be removed before the breeding season begins (March 1).
- After nests are removed, a qualified contractor will cover the undersides of the bridge and box culverts with suitable material to prevent nesting. Installation of the material will occur before March 1 and will be monitored by a qualified biologist throughout the breeding season (typically several times a week). The material will be anchored so that swallows cannot attach their nests to the bridge.
- As an alternative to covering the underside of a bridge and box culverts, Caltrans will have a qualified biologist remove nests as the birds construct them and before any eggs are laid. Visits to the site would need to occur daily throughout the breeding season (March 1 through August 31) as swallows can complete a nest in a 24-hour period.
- If covering of the bridge and box culverts does not occur by March 1 and swallows colonize the bridge or concrete box culverts, disturbance or removal of the structures will not occur before August 31 or until a qualified biologist has determined that the young have fledged and all nest use has been completed.

If appropriate steps are taken to prevent swallows from constructing new nests as described above, work can proceed at any time of the year.

To the Extent Possible and Where Appropriate, Conduct Culvert Extensions and Bridge Replacement Work during the Day to Avoid Disturbance of Night-Roosting Bats

To avoid disturbance, injury, or mortality of bats utilizing the Wadsworth Canal Bridge for night roosting, Caltrans will conduct all work on these structures during the day (to the extent possible and where appropriate). If this is not possible, portable lights will be used to illuminate the roosting areas prior to and after sunset to deter bats from roosting during night/s when work will occur.

Identify Suitable Roosting Habitat for Bats and Implement Avoidance and Protective Measures

Trees

If tree removal or trimming cannot be conducted between September 15 and October 30, qualified biologists will examine trees for suitable bat-roosting habitat before tree removal or trimming. High-quality habitat features (e.g., large tree cavities, basal hollows, loose or peeling bark, larger snags, palm trees with intact thatch) will be identified and the area around these features searched for bats and bat signs (e.g., guano, culled insect parts, staining). Riparian woodland, orchards, and stands of mature broadleaf trees are considered potential habitat for solitary foliage-roosting bat species. Because signs of bat use are not easily found, and trees cannot be completely surveyed for bat roosts, the protective measures listed below will be implemented for trees containing high-quality habitat features.

- Removal or disturbance of trees providing bat roosting habitat will be avoided between April 1 and September 15 (the maternity period) to avoid effects on pregnant females and active maternity roosts (whether colonial or solitary).
- Removal of trees providing bat roosting habitat will be conducted between September 15 and October 30, which corresponds to a time period when bats have not yet entered torpor or would be caring for nonvolant young.
- Trees will be removed in pieces rather than felling an entire tree.
- If a maternity roost is found, whether solitary or colonial, that roost will remain undisturbed until September 15 or until a qualified biologist has determined the roost is no longer active.
- If avoidance of non-maternity roost trees is not possible, and tree removal or trimming must occur between October 30 and August 31, qualified biologists will monitor tree trimming/removal of the habitat. If possible, tree trimming or removal should occur in the late afternoon or evening when it is closer to the time that bats would normally arouse. Prior to trimming or removal of trees providing suitable roosting habitat, each tree will be shaken gently and several minutes should pass before felling trees or removing limbs to allow bats time to arouse and leave the tree. Biologists should search downed vegetation for dead and injured bats. The presence of dead or injured bats that are species of special concern will be reported to CDFW. The biologist will prepare a biological monitoring report, which will be provided to Caltrans and CDFW.

Structures

Qualified biologists will conduct an initial daytime survey of existing structures (i.e., concrete box culverts and Wadsworth Canal Bridge) to assess them for potential bat roosting habitat, and to look for bats and bat sign. The biologists will examine both the inside and outside of the structures for potential roosting habitat, as well as routes of entry to the structures. Depending on the results of the habitat assessment, the following steps will be taken as described below.

If the structures can be adequately assessed and no habitat or limited habitat for roosting bats is present and no signs of bat use are present, a preconstruction survey of the structures by qualified biologists will be conducted within 24 hours of disturbance.

If moderate or high potential habitat is present and bats or bat sign are observed, or if exclusion measures are not installed as described above, or the structures provide suitable habitat but could not be adequately assessed, the following protective measures will be implemented.

- Follow-up surveys will be conducted to determine if bats are still present. If species identification is required by CDFW, surveys using night vision goggles and active acoustic monitoring using full spectrum bat detectors will be used. A survey plan (number, timing, and type of surveys) will be determined in coordination with CDFW.
- Based on the timing of demolition, the extent of bat sign or occupied habitat, and the species present (if determined), the qualified biologists will work with the project proponent and CDFW to develop a plan to discourage or exclude bat use prior to demolition. The plan may include installing exclusion measures or using light or other means to deter bats from using the structure to roost.
- A preconstruction survey of the interior and exterior of the structures will be conducted within 24 hours of demolition.

Depending on the species of bats present, size of the bat roost, and timing of the demolition, additional protective measures may be necessary.

Provide Bat Roosting Boxes on the Wadsworth Canal Replacement Bridge

Caltrans will construct a minimum of two bat roosting boxes on the Wadsworth Canal Bridge to provide replacement roosting habitat for bats. The boxes will be constructed out of plywood and will follow Caltrans design specifications. The bat boxes will be monitored for use at least twice per year for a minimum of 2 years, or as required by CDFW. After the second year of monitoring, Caltrans will periodically inspect the boxes and replace them if they become damaged or unusable. If it is determined from further survey work that special-status bats utilize the bridge for roosting, CDFW may have additional requirements for replacement habitat and monitoring the replacement habitat for bat use.

Dewater or Implement Other Measures to Minimize Underwater Sound Pressure while Driving Piles with an Impact Hammer

Caltrans will require the contractor to implement the following measures, developed in coordination with project design engineers, to minimize the exposure of special-status fish species to potentially harmful underwater sounds while driving piles with an impact hammer.

- If feasible, piles will be driven inside a dewatered cofferdam if an impact hammer is used.
- Piles driven with an impact hammer to construct a new bridge over Wadsworth Canal will be restricted to the required work window (as specified in the permits).
- If feasible, the contractor will vibrate all piles to the maximum depth possible before using an impact hammer.
- During impact driving, the contractor will limit the number of strikes per day to the minimum necessary to complete the work.

D.3 Threatened and Endangered Species

The proposed project has the potential to directly and indirectly effect threatened and endangered species, including giant garter snake, Swainson's hawk, tricolored blackbird, Central Valley steelhead, Sacramento River winter-run Chinook salmon, and Central Valley spring-run Chinook salmon. These species are protected under a variety of state and federal regulations and substantial effects on the species are considered significant under CEQA.

D.3.1 Avoidance and Minimization Measures

In addition to the applicable avoidance and minimization measures listed above under "Natural Communities" and "Animal Species", the following measures would also be implemented by Caltrans to avoid and minimize temporary effects on non-listed special-status species:

Avoid and Minimize Construction Effects on Giant Garter Snake

Caltrans and/or its construction contractor will implement the following measures to avoid, minimize, and compensate for effects on giant garter snake and its habitat.

- All construction activity in giant garter snake aquatic and upland habitat (i.e., within 200 feet of aquatic habitat) will be conducted during the snake's active period (between May 1 and October 1). During this timeframe, potential for injury and mortality are lessened because snakes are actively moving and avoiding danger. In the event that all construction activities in giant garter snake habitat cannot be conducted between May 1 and October 1, all ground disturbing activities in suitable habitat will be initiated prior to September 15.
- Twenty-four hours prior to the commencement of construction activities, suitable habitat within the project area will be surveyed for giant garter snake by a USFWS- and CDFW-approved biologist. The biologist will provide USFWS and CDFW with a written report that

adequately documents the survey efforts within 24 hours of commencement of construction activities. Suitable habitat within the project area will be re-inspected by the USFWS- and CDFW-approved biologist whenever a lapse in construction activity of 2 weeks or greater has occurred.

- During construction operations, stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas and all operations will be confined to the minimal area necessary
- A USFWS- and CDFW-approved biologist will inspect and monitor all construction-related activities within suitable habitat to minimize take of giant garter snake and unnecessary destruction of its habitat. If one or more giant garter snakes are encountered during construction activities, the biologist will notify USFWS and CDFW immediately to determine the appropriate procedures for removal and relocation of the snake. A report will be submitted to USFWS and CDFW, including date(s), location(s), habitat description, and any corrective measures taken to protect the snake, within 1 business day. The biologist will be required to report any take of listed species to the USFWS and CDFW immediately by telephone and by electronic mail or written letter within 1 working day of the incident.
- Project-related vehicles will observe a 20-mile-per-hour speed limit within construction areas, except on existing paved roads where they will adhere to the posted speed limits.
- Aquatic habitat for the snake will be dewatered, and remain dry and absent of aquatic prey for 15 days prior to the initiation of any construction activities. If complete dewatering is not possible, USFWS and CDFW will be contacted to determine what additional measures may be necessary to minimize effects to the snake.
- Prior to October 1 and after aquatic habitat has been dewatered, high visibility fencing will be erected around the habitats of the snake to identify and protect these areas from encroachment of personnel and equipment. These ESAs will be avoided by all construction personnel. The fencing will be inspected by the contractor before the start of each work day and maintained by the contractor until completion of the project. Fencing will be established in the uplands immediately adjacent to aquatic snake habitat and extending up to 200 feet from construction activities. Snake exclusionary fencing will be buried at least 6 inches below the ground to prevent snakes from attempting to burrow or move under the fence.
- BMPs will be implemented to minimize the potential for erosion and sedimentation into nearby water bodies.
- After completion of construction activities, Caltrans or its contractor will remove any temporary fill and construction debris and, wherever feasible, restore disturbed areas to pre-project conditions. Restoration work will include activities such as revegetating the banks and active channels of aquatic habitat with an appropriate mix of native species that occur in the project region.
- A photo documentation report showing pre- and post-project area conditions will be submitted to USFWS and CDFW 1 month after restoration is completed.

Conduct Focused Surveys for Nesting Swainson's Hawk Prior to Construction and Implement Protective Measures during Construction

Because construction is anticipated to begin in the middle of the Swainson's hawk nesting period, Caltrans will conduct surveys for nesting Swainson's hawks in the spring of 2018 (i.e., 1 year before construction) to provide information in preparation for construction (i.e., locations of nests, hawks' responses to disturbance, sizes of buffer areas, anticipated impacts on project schedule). Surveys will also be conducted in the spring of the year of construction (2019) to determine if there are active nests in the current year. Information collected during the 2018 surveys will help to focus the 2019 surveys. Prior to the start of surveys, Caltrans will review the most recent version of the CNDDDB and contact CDFW for information on any active (i.e., within the last 5 years) nest sites within 10 miles of the BSA.

Focused surveys for Swainson's hawk will be conducted in the project area and in a buffer area of up to 0.5 mile radius around the project area. The size of the buffer area surveyed will be based on the type of habitat present and line of sight from the construction area to surrounding suitable breeding habitat. Buffer areas containing unsuitable nesting habitat and/or with an obstructed line of sight to the project area will not be surveyed. Survey methodology will follow the Swainson's Hawk Technical Advisory Committee's methodology (Swainson's Hawk Technical Advisory Committee 2000). A minimum of six surveys will be conducted during the appropriate timeframes discussed in the methodology. If needed, biologists will coordinate with CDFW regarding the extent and number of surveys. Surveys would generally be conducted from February to July. Survey methods and results will be reported to CDFW.

D.3.2 Mitigation Measures

To mitigated for permanent and temporary loss of giant garter snake habitat and loss of Swainson's hawk foraging habitat, Caltrans will compensate for by implementing the following measures. Implementation of the following measure would reduce significant impacts to a less significant level:

Compensate for Permanent and Temporary Loss of Giant Garter Snake Habitat

Caltrans will compensate for the permanent and temporary losses of suitable habitat for giant garter snake by preserving the required acreages of habitat for giant garter snake (as dictated by the USFWS BO and CDFW ITP) through purchase of mitigation credits at a USFWS and CDFW-approved conservation bank. The habitat at the conservation bank will be protected in perpetuity for giant garter snake. Prior to the start of construction, Caltrans will purchase giant garter snake preservation credits from the approved conservation bank for the compensation acreages required by USFWS and CDFW. The transaction will take place through a purchase and sale agreement, and funds must be transferred within 30 days, and before any construction activities are initiated. Caltrans will provide USFWS and CDFW with copies of the credit sale agreement and fund transfer.

Compensate for the Permanent Loss of Foraging Habitat for Swainson's Hawk

Caltrans will mitigate for the permanent removal of suitable foraging habitat (seasonal wetland, nonnative grassland, and row crop/fallow areas) for Swainson's hawks by providing offsite habitat management lands at a 1:1 ratio (habitat preserved: habitat removed) or as required by CDFW. If acceptable to CDFW, Caltrans may also be able to purchase mitigation credits for Swainson's hawk foraging habitat from a CDFW-approved mitigation or conservation bank. Information on the nearest nest will be collected during Swainson's hawk surveys, discussed above, for consultation with CDFW on the required mitigation ratio. If no active nests are found during this survey, a search of the CNDDDB will be conducted, and CDFW will be contacted to determine the nearest active nest.

Appendix E Land Cover along the Sutter Bypass
Widening and Rehabilitation Project

121°49'50"W

121°49'40"W

121°49'30"W

39°9'0"N

39°8'50"N



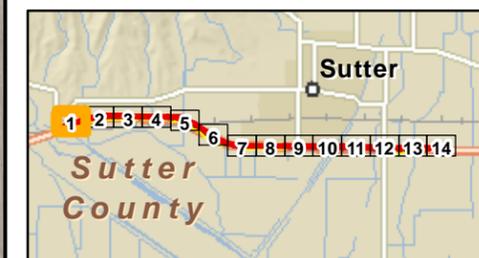
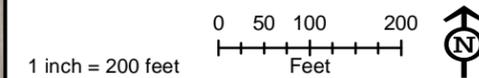
State Route 20 - Sutter Bypass
 April 2016
 Sheet 1

Legend

- Environmental Study Limit
- State Highway Postmile

Land Cover

- Baltic Rush Meadow
- Canal
- Cottonwood-Willow Riparian Woodland
- Developed
- Emergent Wetland
- Himalayan Blackberry Thicket
- Irrigation Ditch
- Nonnative Annual Grassland
- Nonnative Woodland
- Orchard
- Rice
- Roadside Ditch
- Row Crops/Fallow
- Ruderal
- Scrub-Shrub Wetland
- Seasonal Wetland



Base Data Sources: NHD (2014); ESRI (2014);
 Caltrans (2015)
 Imagery Source: ESRI/NAIP 2014

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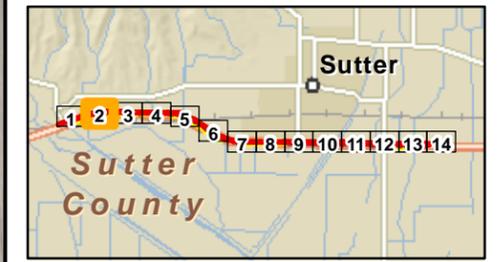
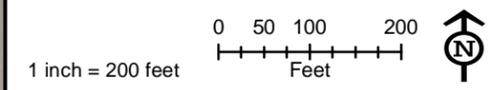
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39°9'0"N

State Route 20 - Sutter Bypass April 2016 Sheet 2

Legend

- Environmental Study Limit
- State Highway Postmile
- Land Cover**
- Baltic Rush Meadow
- Canal
- Cottonwood-Willow Riparian Woodland
- Developed
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- Ruderal
- Scrub-Shrub Wetland
- Seasonal Wetland



Base Data Sources: NHD (2014); ESRI (2014);
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121°48'40"W

121°48'30"W

121°48'20"W

State Route 20 - Sutter Bypass
April 2016
Sheet 3

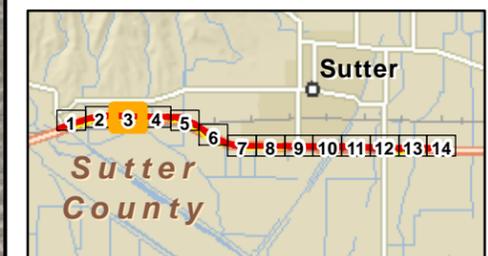
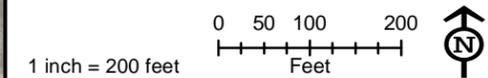
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- Environmental Study Limit
- State Highway Postmile

Land Cover

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- Orchard
- Rice
- Roadside Ditch
- Row Crops/Fallow
- Ruderal
- Scrub-Shrub Wetland
- Seasonal Wetland

39°9'0"N



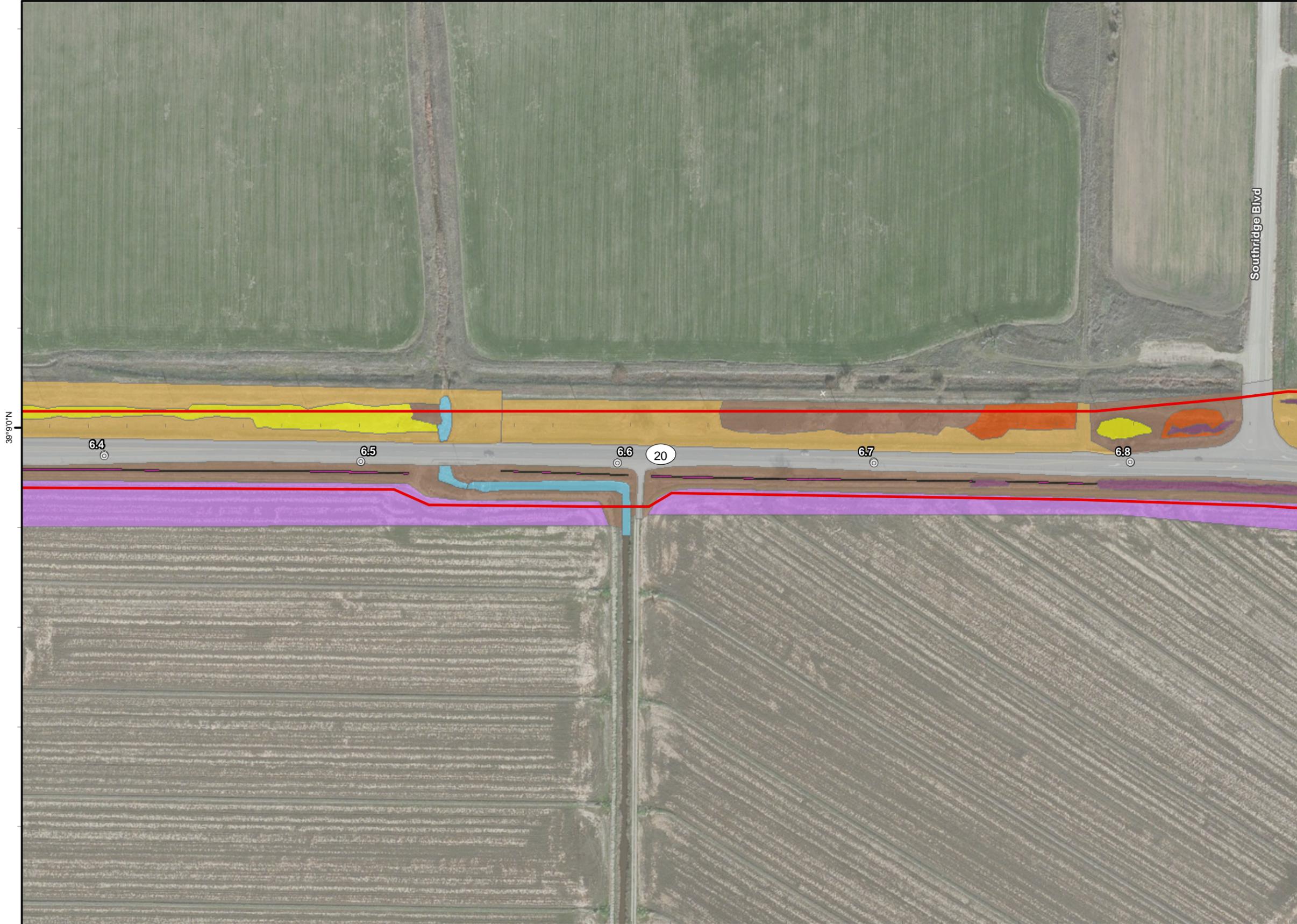
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121°48'10"W

121°48'0"W

121°47'50"W



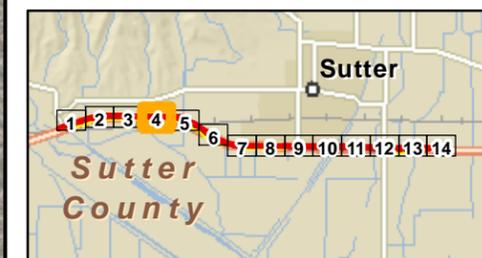
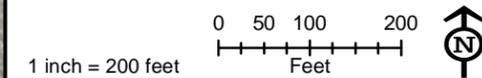
State Route 20 - Sutter Bypass
 April 2016
 Sheet 4

Legend

- Environmental Study Limit
- State Highway Postmile

Land Cover

- Baltic Rush Meadow
- Canal
- Cottonwood-Willow Riparian Woodland
- Developed
- Emergent Wetland
- Himalayan Blackberry Thicket
- Irrigation Ditch
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- Nonnative Woodland
- Orchard
- Rice
- Roadside Ditch
- Row Crops/Fallow
- Ruderal
- Scrub-Shrub Wetland
- Seasonal Wetland



Base Data Sources: NHD (2014); ESRI (2014);
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121°47'30"W

121°47'20"W

121°47'10"W

State Route 20 - Sutter Bypass
April 2016
Sheet 5

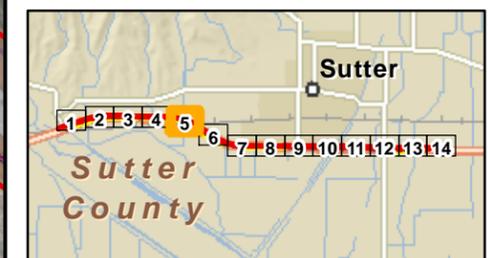
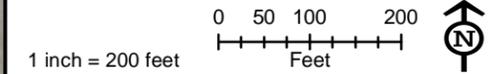
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Environmental Study Limit

State Highway Postmile

Land Cover

- Baltic Rush Meadow
- Canal
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- Ruderal
- Scrub-Shrub Wetland
- Seasonal Wetland



Base Data Sources: NHD (2014); ESRI (2014);
Caltrans (2015)
Imagery Source: ESRI/NAIP 2014

39°9'0"N

39°8'50"N



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121°47'0"W

121°46'50"W

121°46'40"W

39°8'50"N

39°8'40"N



State Route 20 - Sutter Bypass
 April 2016
 Sheet 6

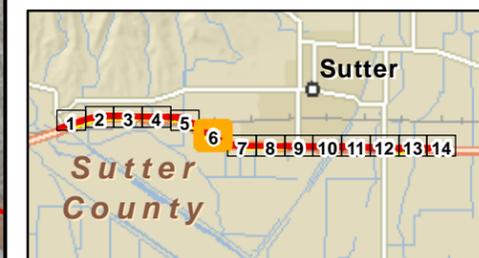
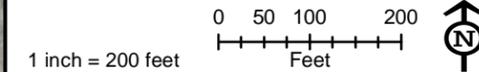
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Environmental Study Limit

⊙ State Highway Postmile

Land Cover

- Baltic Rush Meadow
- Canal
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 Caltrans (2015)
 Imagery Source: ESRI/NAIP 2014

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121°46'30"W

121°46'20"W

121°46'10"W

39°8'40"N

39°8'30"N

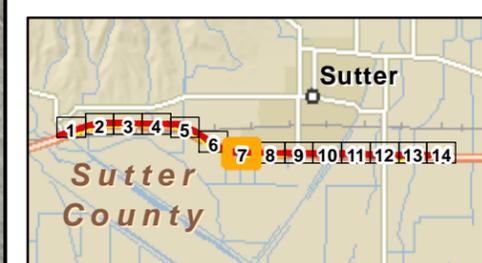
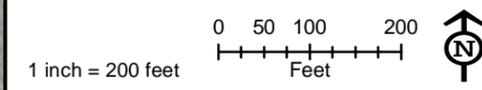
State Route 20 - Sutter Bypass
April 2016
Sheet 7

Legend

- Environmental Study Limit
- State Highway Postmile

Land Cover

- Baltic Rush Meadow
- Canal
- Cottonwood-Willow Riparian Woodland
- Developed
- Emergent Wetland
- Himalayan Blackberry Thicket
- Irrigation Ditch
- Nonnative Annual Grassland
- Nonnative Woodland
- Orchard
- Rice
- Roadside Ditch
- Row Crops/Fallow
- Ruderal
- Scrub-Shrub Wetland
- Seasonal Wetland



Base Data Sources: NHD (2014); ESRI (2014);
Caltrans (2015)
Imagery Source: ESRI/NAIP 2014



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121°45'40"W

121°45'30"W

39°8'40"N

39°8'30"N

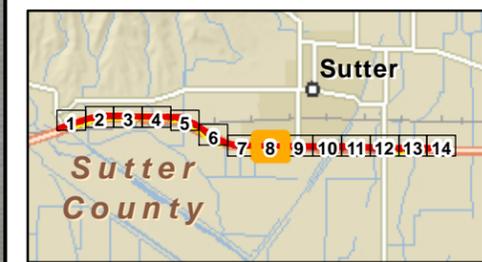
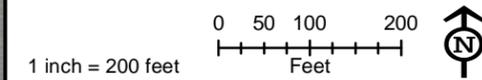
State Route 20 - Sutter Bypass
 April 2016
 Sheet 8

Legend

- Environmental Study Limit
- State Highway Postmile

Land Cover

- Baltic Rush Meadow
- Canal
- Cottonwood-Willow Riparian Woodland
- Developed
- Emergent Wetland
- Himalayan Blackberry Thicket
- Irrigation Ditch
- Nonnative Annual Grassland
- Nonnative Woodland
- Orchard
- Rice
- Roadside Ditch
- Row Crops/Fallow
- Ruderal
- Scrub-Shrub Wetland
- Seasonal Wetland



Base Data Sources: NHD (2014); ESRI (2014);
 Caltrans (2015)
 Imagery Source: ESRI/NAIP 2014



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121°45'10"W

121°45'0"W

39°8'40"N

39°8'30"N

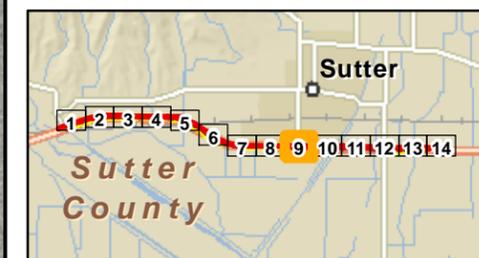
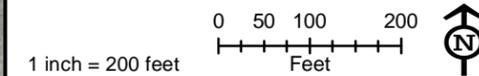
State Route 20 - Sutter Bypass
April 2016
Sheet 9

Legend

- Environmental Study Limit
- State Highway Postmile

Land Cover

- Baltic Rush Meadow
- Canal
- Cottonwood-Willow Riparian Woodland
- Developed
- Emergent Wetland
- Himalayan Blackberry Thicket
- Irrigation Ditch
- Nonnative Annual Grassland
- Nonnative Woodland
- Orchard
- Rice
- Roadside Ditch
- Row Crops/Fallow
- Ruderal
- Scrub-Shrub Wetland
- Seasonal Wetland



Base Data Sources: NHD (2014); ESRI (2014);
Caltrans (2015)
Imagery Source: ESRI/NAIP 2014



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121°44'40"W

121°44'30"W

39°8'40"N

39°8'30"N

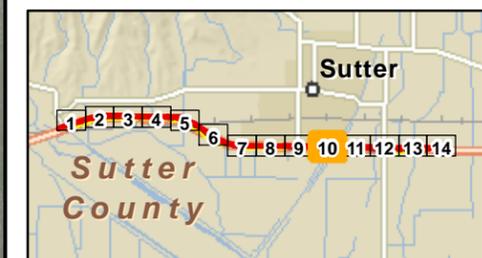
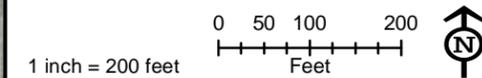
State Route 20 - Sutter Bypass
April 2016
Sheet 10

Legend

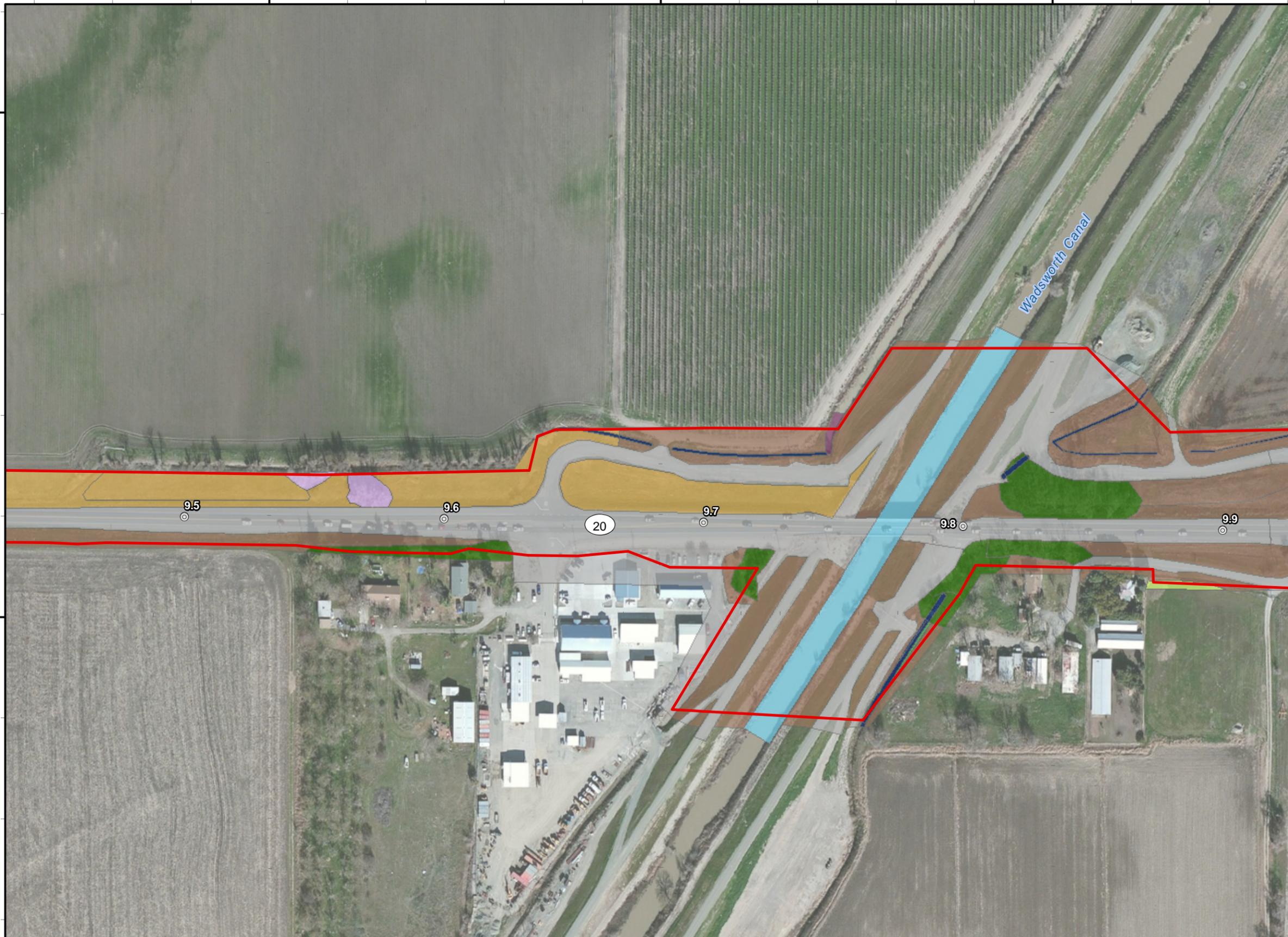
- Environmental Study Limit
- State Highway Postmile

Land Cover

- Baltic Rush Meadow
- Canal
- Cottonwood-Willow Riparian Woodland
- Developed
- Emergent Wetland
- Himalayan Blackberry Thicket
- Irrigation Ditch
- Nonnative Annual Grassland
- Nonnative Woodland
- Orchard
- Rice
- Roadside Ditch
- Row Crops/Fallow
- Ruderal
- Scrub-Shrub Wetland
- Seasonal Wetland



Base Data Sources: NHD (2014); ESRI (2014);
Caltrans (2015)
Imagery Source: ESRI/NAIP 2014



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121°44'20"W

121°44'10"W

121°44'0"W

39°8'40"N

39°8'30"N

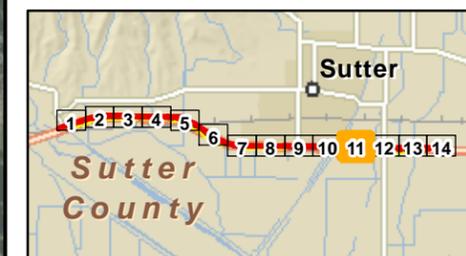
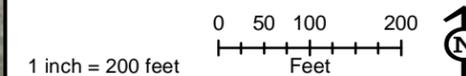
State Route 20 - Sutter Bypass
April 2016
Sheet 11

Legend

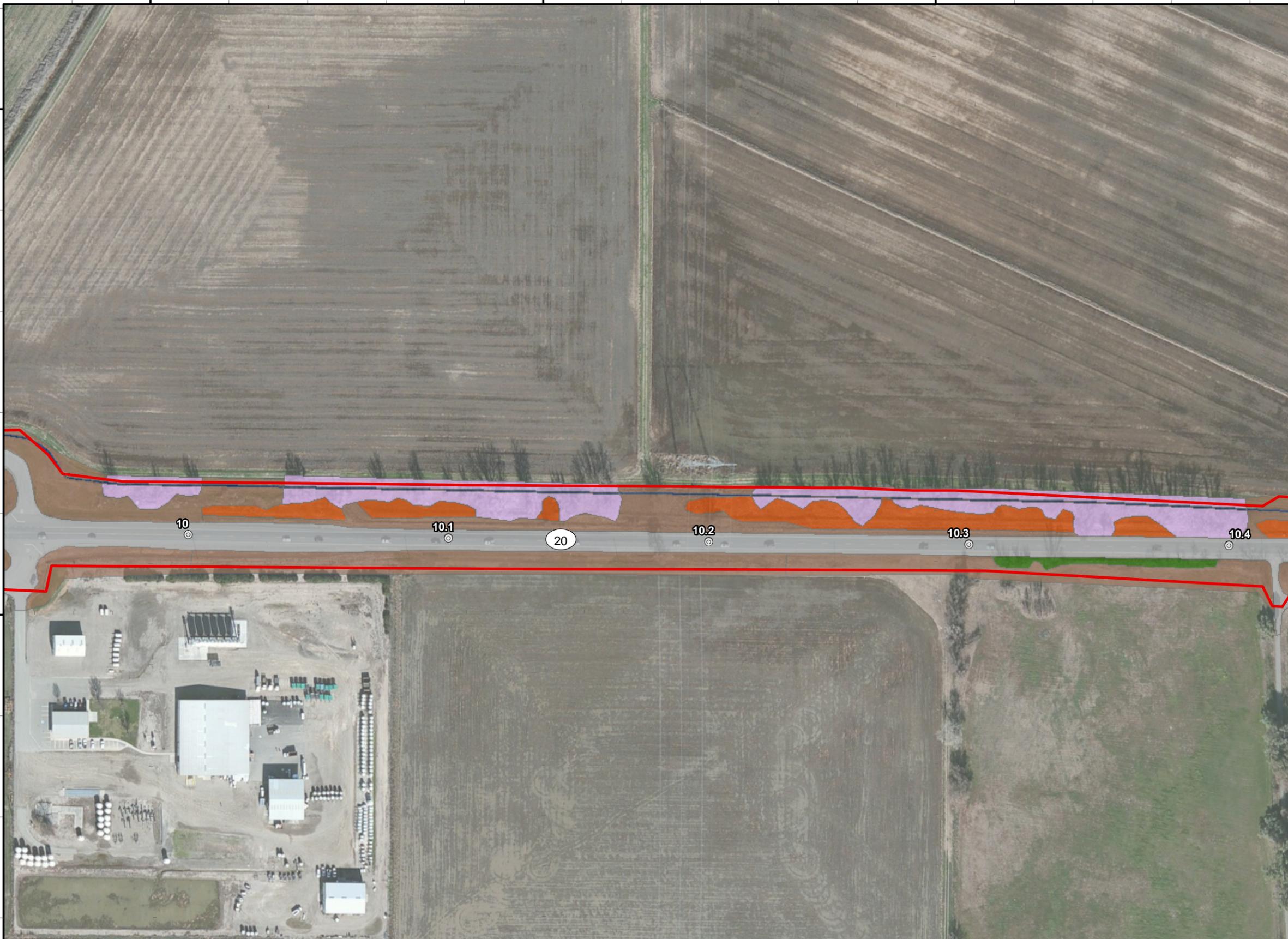
- Environmental Study Limit
- State Highway Postmile

Land Cover

- Baltic Rush Meadow
- Canal
- Cottonwood-Willow Riparian Woodland
- Developed
- Emergent Wetland
- Himalayan Blackberry Thicket
- Irrigation Ditch
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- Nonnative Woodland
- Orchard
- Rice
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- Row Crops/Fallow
- Ruderal
- Scrub-Shrub Wetland
- Seasonal Wetland



Base Data Sources: NHD (2014); ESRI (2014);
Caltrans (2015)
Imagery Source: ESRI/NAIP 2014



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39°8'40"N

39°8'30"N



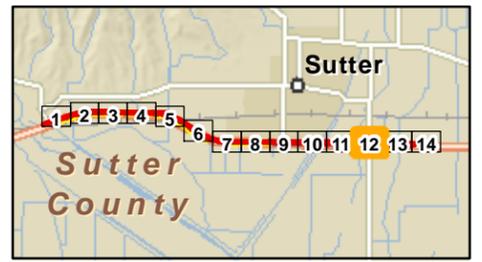
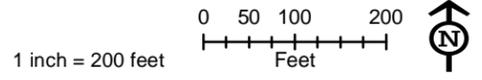
State Route 20 - Sutter Bypass
 April 2016
 Sheet 12

Legend

- Environmental Study Limit
- State Highway Postmile

Land Cover

- Baltic Rush Meadow
- Canal
- Cottonwood-Willow Riparian Woodland
- Developed
- Emergent Wetland
- Himalayan Blackberry Thicket
- Irrigation Ditch
- Nonnative Annual Grassland
- Nonnative Woodland
- Orchard
- Rice
- Roadside Ditch
- Row Crops/Fallow
- Ruderal
- Scrub-Shrub Wetland
- Seasonal Wetland



Base Data Sources: NHD (2014); ESRI (2014);
 Caltrans (2015)
 Imagery Source: ESRI/NAIP 2014

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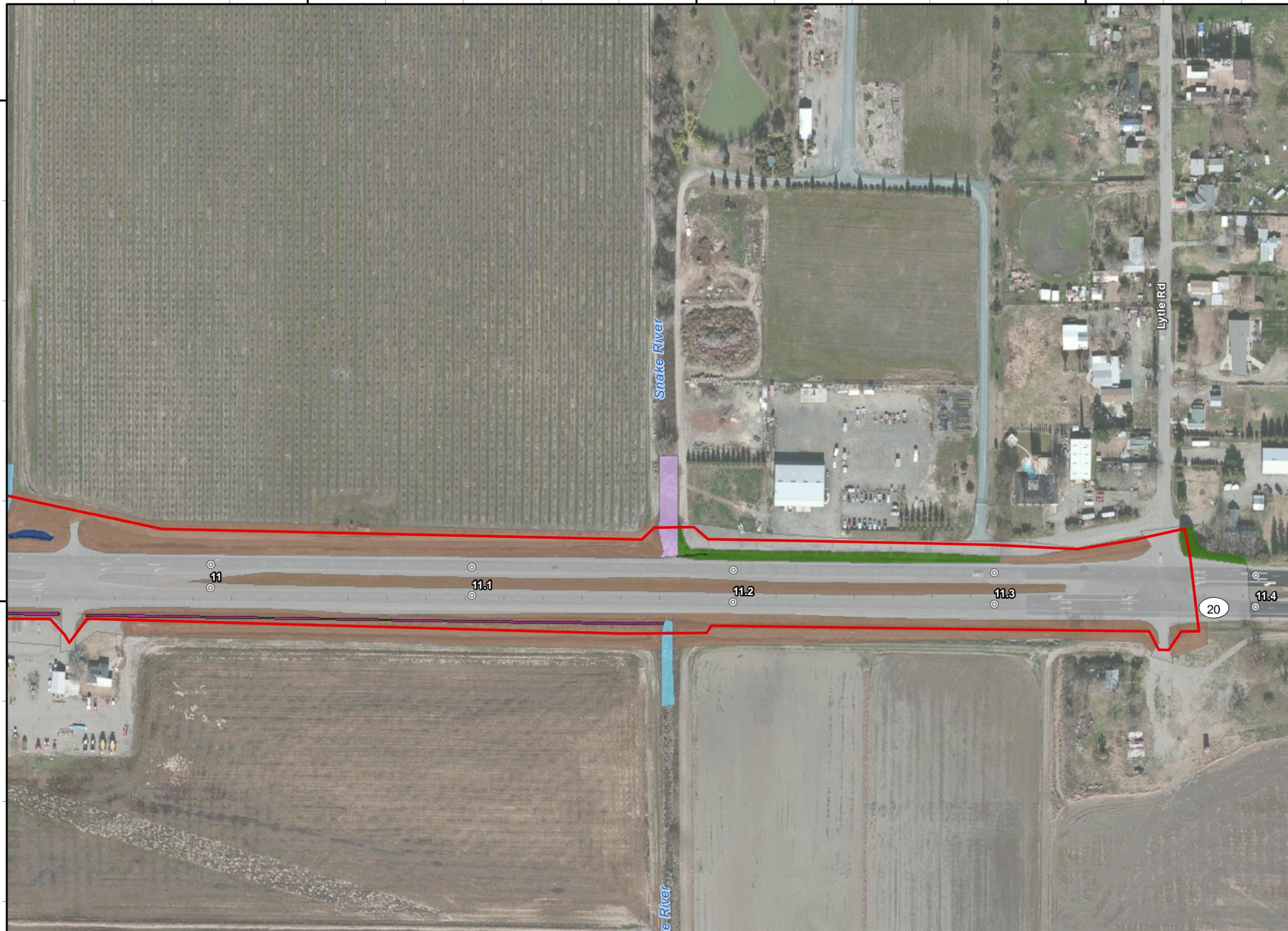
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121°42'50"W

39°8'40"N

39°8'30"N



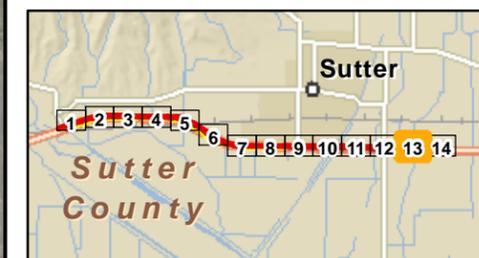
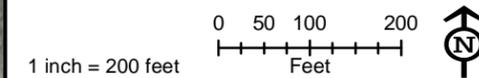
State Route 20 - Sutter Bypass
 April 2016
 Sheet 13

Legend

- Environmental Study Limit
- State Highway Postmile

Land Cover

- Baltic Rush Meadow
- Canal
- Cottonwood-Willow Riparian Woodland
- Developed
- Emergent Wetland
- Himalayan Blackberry Thicket
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- Seasonal Wetland



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 Imagery Source: ESRI/NAIP 2014

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