

Manthey Road Bridge Replacement Project

Manthey Road Bridge Replacement Project over the San Joaquin River
in the City of Lathrop in San Joaquin County, California

BRLS-5456(016)

Bridge Number 29C-0127

Initial Study with Proposed Mitigated Negative Declaration/ Environmental Assessment



Prepared by the
State of California Department of Transportation
and City of Lathrop

The environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 United States Code 327 and the Memorandum of Understanding dated December 23, 2016 and executed by the Federal Highway Administration and Caltrans.



September 2020

General Information About This Document

What's in this document:

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration, has prepared this Initial Study/Environmental Assessment, which examines the potential environmental impacts of alternatives being considered for the proposed project in the City of Lathrop, San Joaquin County in California. The Department is the lead agency under the National Environmental Policy Act (NEPA). The City of Lathrop is the lead agency under the California Environmental Quality Act (CEQA). The document explains why the project is being proposed, what alternatives we have considered for the project, how the existing environment that could be affected by the project, potential impacts of each of the alternatives, and proposed avoidance, minimization, and/or mitigation measures.

What you should do:

- Please read the document.
- Additional copies of the document and the related technical studies are available for review at the Caltrans District 10 office at 1976 Martin Luther King Junior Boulevard, Stockton, California
- The document can also be downloaded at the following website:
<https://www.ci.lathrop.ca.us/com-dev/page/public-review-documents>.
- Tell us what you think. If you have any comments regarding the proposed project, please send your written comments to Caltrans by the deadline.
- Submit comments via United States mail to: Dominic Vitali, District 10 Environmental, California Department of Transportation, 1976 East Martin Luther King Jr. Boulevard, Stockton, California, 95205.
- Submit comments via email to: Dominic.Vitali@dot.ca.gov.
- Be sure to send comments by the deadline: October 11, 2020.

What happens next:

After comments are received from the public and reviewing agencies, Caltrans, as assigned by the Federal Highway Administration, may 1) give environmental approval to the proposed project, 2) do additional environmental studies, or 3) abandon the project. If the project is given environmental approval and funding is appropriated, the City of Lathrop could design and construct all or part of the project.

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Replace the Manthey Road Bridge over the San Joaquin River in the city of Lathrop
in San Joaquin County

**INITIAL STUDY WITH PROPOSED MITIGATED NEGATIVE
DECLARATION / ENVIRONMENTAL ASSESSMENT**

Submitted Pursuant to: (State) Division 13, California Public Resources Code
(Federal) 42 United States Code 4332(2)(C)

THE STATE OF CALIFORNIA
Department of Transportation
and
the City of Lathrop
Cooperating Agencies under NEPA: United States Coast Guard, United States Army
Corps of Engineers, United States Fish and Wildlife Services, National Marine
Fisheries Service
Responsible Agencies under CEQA: State Lands Commission, California
Department of Fish and Wildlife, Regional Water Quality Control Board, Reclamation
District 17, Reclamation District 2062

09/02/2020
Date

Dennis T. Agar
Dennis T. Agar
Acting District Director
California Department of Transportation
NEPA Lead Agency

9/2/2020
Date

Michael King
Michael King
Director of Public Works
City of Lathrop
CEQA Lead Agency

The following may be contacted for more information about this document:

Dominic Vitali, 1976 E. Dr. Martin Luther King Jr. Blvd., Stockton, CA 95205
Michael King, 390 Towne Center Drive, Lathrop, CA 95330

DRAFT

Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The City of Lathrop (City), in coordination with Caltrans, proposes to replace the Manthey Road bridge over the San Joaquin River in the City of Lathrop to address issues of safety and circulation and to improve bicycle and pedestrian access. The bridge approach would include a portion of the proposed Golden Valley Parkway alignment.

Determination

This proposed Mitigated Negative Declaration is included to give notice to interested agencies and the public that it is the City's intent to adopt a Mitigated Negative Declaration for this project. This Mitigated Negative Declaration is subject to change based on comments received from interested agencies and the public.

The City has prepared an Initial Study for this project and, pending public review, expect to determine from this study that the proposed project would not have a significant effect on the environment for the following reasons.

The proposed project would have no effect on Land Use and Planning, Population and Housing, Recreation, and Transportation.

The proposed project would have no significant effect on Aesthetics, Agricultural Resources, Air Quality, Energy, Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, Mineral Resources, Noise, Public Services, Tribal Cultural Resources, Utilities and Service Systems, and Wildfire.

The proposed project would have no significantly adverse effect on Biological Resources or Cultural Resources because the following mitigation measures would reduce potential effects to insignificance:

- Prepare and Implement a Post Review Discovery and Monitoring Plan
- Compensate for Temporary Effects on and Permanent Loss of Riparian Woodland and Riparian Scrub (Including Shaded Riverine Aquatic Cover)
- Purchase Channel Enhancement Credits at National Marine Fisheries Service-Approved Anadromous Fish and United States Fish and Wildlife Service-Approved Delta Smelt Conservation Bank for Impacts on Critical Habitat

Michael King
Director of Public Works
City of Lathrop

Date

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Chapter 1 Proposed Project

1.1 Introduction

California participated in the “Surface Transportation Project Delivery Pilot Program” (Pilot Program) pursuant to 23 USC 327, for more than five years, beginning July 1, 2007, and ending September 30, 2012. MAP-21 (P.L. 112-141), signed by President Obama on July 6, 2012, amended 23 USC 327 to establish a permanent Surface Transportation Project Delivery Program. As a result, the Department entered into a Memorandum of Understanding pursuant to 23 USC 327 (NEPA Assignment MOU) with FHWA. The NEPA Assignment MOU became effective October 1, 2012, and was renewed on December 23, 2016, for a term of five years. In summary, the Department continues to assume FHWA responsibilities under NEPA and other federal environmental laws in the same manner as was assigned under the Pilot Program, with minor changes. With NEPA Assignment, FHWA assigned and the Department assumed all of the United States Department of Transportation (USDOT) Secretary's responsibilities under NEPA. This assignment includes projects on the State Highway System and Local Assistance Projects off of the State Highway System within the State of California, except for certain categorical exclusions that FHWA assigned to the Department under the 23 USC 326 CE Assignment MOU, projects excluded by definition, and specific project exclusions.

The City of Lathrop, in coordination with Caltrans, is proposing to replace the Manthey Road Bridge across the San Joaquin River approximately 0.3 miles northeast of Stewart Road in the city of Lathrop. Caltrans, as assigned by the Federal Highway Administration, is the lead agency under the National Environmental Policy Act (NEPA). The City of Lathrop is the lead agency under the California Environmental Quality Act (CEQA).

Manthey Road is a two-lane frontage road that runs southwest–northeast, parallel to Interstate 5 (I-5), with a posted speed limit of 40 miles per hour. It is a local and regional route that crosses the San Joaquin River northwest of I-5, providing connectivity to the River Islands and Mossdale Village developments, which are the City's two largest development areas (Figures 1-1 and 1-2).

Manthey Road extends from the city of Stockton south to the city of Lathrop, along the west side of I-5 in San Joaquin County. In Lathrop, Manthey Road has been removed between Louise Avenue and Towne Centre Drive. From Towne Centre Drive, the road continues south and crosses the San Joaquin River, providing access to the I-5/Manthey Road interchange and residences and businesses along Manthey Road.

The Manthey Road Bridge (Bridge Number 29C0127) was built in 1926 as a movable bridge; however, that feature is no longer functional. The bridge structure is

a Pratt Camelback through steel truss with a Bascule lift approach on the north end and is 33.5 feet wide. The bridge has a pedestrian walkway on the southeast side outside of the main truss; however, this walkway is currently closed due to its poor and unsafe condition. A separate, independent pedestrian bridge is located immediately northwest (downstream) of the bridge. The proposed project is included in the San Joaquin Council of Government's 2019 Federal Transportation Improvement Program (SJ07-3014).

1.2 Purpose and Need

In September 2012, Caltrans determined that the bridge is structurally deficient, with a sufficiency rating of 7.1 out of 100 and functionally obsolete (it is not wide enough to accommodate bicycle and pedestrian traffic or safe shoulders).

1.2.1 Purpose

The project has three primary objectives.

- To improve safety related to the bridge and more generally within the project area.
- To provide circulation to current and future residential areas and surrounding development consistent with adopted plans.
- To improve multimodal transportation in the City of Lathrop across the San Joaquin River.

1.2.2 Need

The project is needed to respond to the following concerns:

- **Safety:** The bridge received a 7.1 out of 100 sufficiency rating by Caltrans and was determined to be "Structurally Deficient" and "Functionally Obsolete" based on the September 2012 Caltrans Bridge Inspection Report. The current bridge does not meet standard lane and shoulder widths, and the existing superstructure does not allow widening.
- **Consistency with circulation patterns in adopted plans:** The current bridge on Manthey Road is a major crossing of the San Joaquin River serving the City of Lathrop. Prior to approval of the 2002 West Lathrop Specific Plan and the beginning of construction in Mossdale Village in 2004, the West Lathrop Specific Plan area was almost entirely agricultural. The West Lathrop Specific Plan allows for development of three mixed-use projects (Mossdale Village, River Islands, and Southeast Stewart Tract). Since approving the West Lathrop Specific Plan, the circulation patterns have changed and communities have expanded southward and westward, requiring a better connection across the San Joaquin River. When considering a replacement structure, the City must take into account current and future circulation patterns based on adopted plans.

- **Multimodal enhancements:** The existing bridge width is not adequate to accommodate bike lanes or shoulders. Currently, bicycle traffic must use the adjacent pedestrian bridge. The City's General Plan and the West Lathrop Specific Plan identify multimodal enhancements and include Class II bike lanes. The new bridge will accommodate Class II bike lanes, encouraging non-motorized traffic over a safe river crossing.

Logical Termini and Independent Utility

The proposed project would function and address the purpose and need identified above without additional improvements. The project would connect two roadway sections and provide a river crossing. No other project would be required for the project to function adequately and meet the project purpose and need. Therefore, the project has independent utility. The project would also connect logical termini, in that the area studied encompasses a broad enough area to fully address environmental issues.

1.3 Project Description

This section describes the project alternatives developed to meet the purpose and need of the project, while avoiding or minimizing environmental impacts. The alternatives are the Build Alternative (proposed project, formerly Alternative 3) and the No-Build Alternative. The project extends from west of the San Joaquin River at Lakeside Drive/Stewart Road to Brookhurst Boulevard, a distance of approximately one mile. The project area includes the existing Manthey Road Bridge over the San Joaquin River (Figures 1-1 and 1-2).

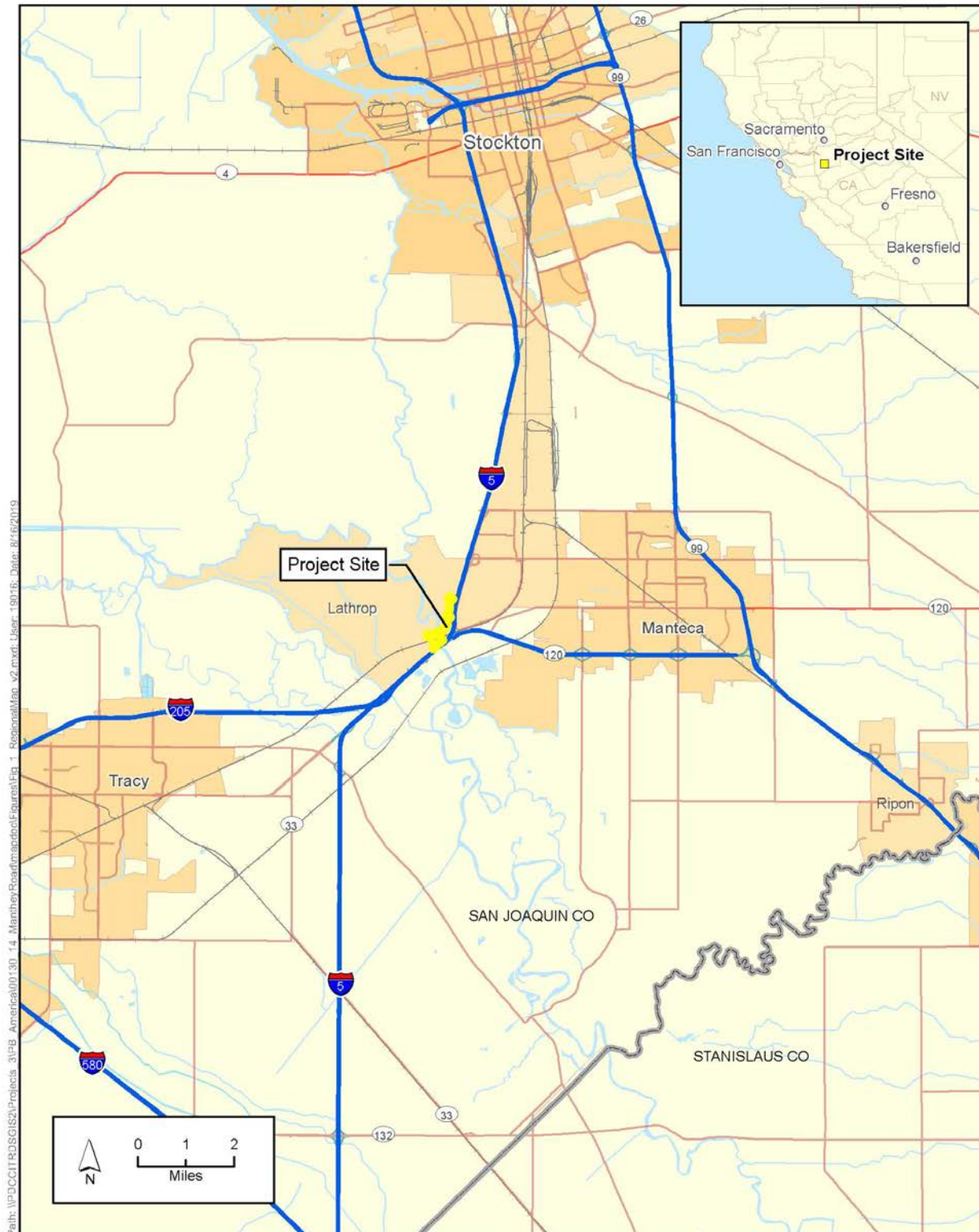


Figure 1-1 Project Vicinity Map

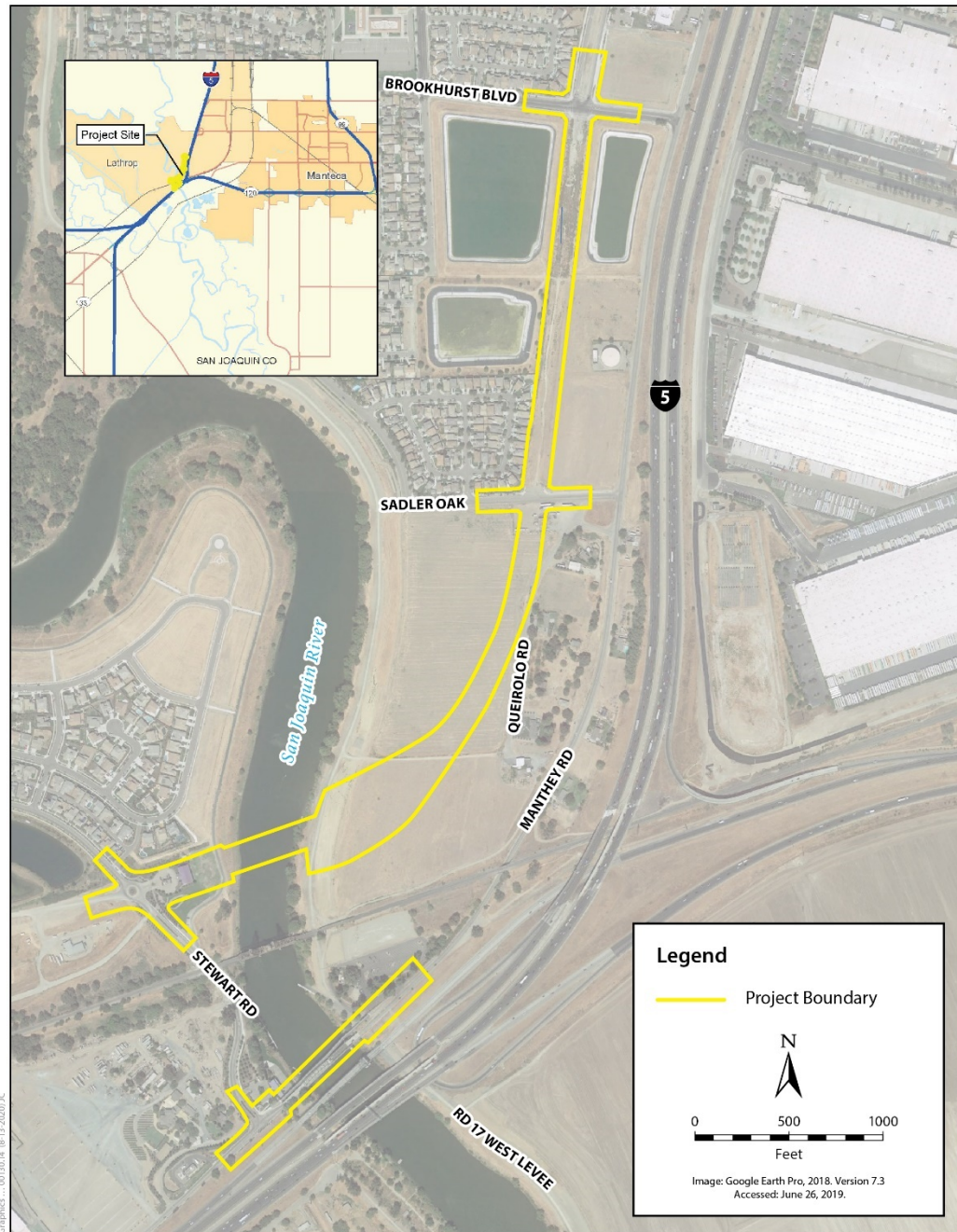


Figure 1-2 Project Location Map

1.4 Project Alternatives

One Build Alternative and the No-Build Alternative are under consideration. Three build alternatives were initially considered for the proposed project but two build alternatives considered were eliminated from further consideration, as described further in Section 1.6, *Alternatives Considered but Eliminated From Consideration*.

1.4.1 Build Alternative

Under the Build Alternative (proposed project), the City would replace the Manthey Road Bridge (No. 29C0127) with a new bridge downstream of the existing railroad bridge and demolish the existing bridge (Figures 1-1 and 1-2). The preliminary alignment for this alternative follows the proposed Golden Valley Parkway alignment across the San Joaquin River, in accordance with the West Lathrop Specific Plan, and conforms at Stewart Road west of the river. Partial right of way acquisition would be required from six privately owned properties (Assessor Parcel Numbers 213-310-05, 213-310-06, 241-020-69, 241-020-68, 241-020-67, and 241-020-63), as well as easements from Reclamation District 17 and Reclamation District 2062 (Figures 1-3, 1-4a, 1-4b and 1-5).

The new bridge would measure approximately 532 feet long by 53 feet wide and would accommodate two 12-foot traffic lanes, two 8-foot shoulders, two 5-foot, 6-inch sidewalks, and concrete barriers and tubular handrails (Figure 1-5). The bridge would be supported by three sets of two piers supported by cast-in-steel-shell piles in the river and abutments on both ends supported by cast-in-drilled-hole piles. The bridge superstructure would be precast, prestressed concrete bulb-tee girders with a cast-in-place concrete deck or a cast-in-place, post-tensioned concrete box girder.

The proposed project would construct a 1-mile-long segment of Golden Valley Parkway along the alignment outlined in the West Lathrop Specific Plan. Though eventually planned as a four-lane arterial, the road constructed under this project would have two 12-foot lanes, with 8-foot shoulders and 5-foot sidewalks located within one-half of the proposed right of way that has been identified for the parkway. The new roadway approach would extend from Brookhurst Boulevard in the north heading southward, turn to the west, cross the San Joaquin River on the new bridge alignment, and connect to Stewart Road in the River Islands development west of the river. Intersection improvements would be made at Brookhurst Boulevard and Saddler Oak. The bridge would conform to existing ground level at Stewart Road.

The United States Army Corps of Engineers would require a minimum of 3 feet of vertical clearance above the levees on each side of the River. Reclamation District 17 prefers 15 feet of vertical clearance above the levee on the Mossdale Landing (east) side for access below the proposed bridge. The City proposes to provide access for Reclamation District 17 on the land side of the levee through a culvert structure. Based on these requests, the profile would reach maximum heights of approximately 20 feet above the existing surrounding ground. A combination of fill slopes and retaining walls could be used to retain the higher approach roadway.

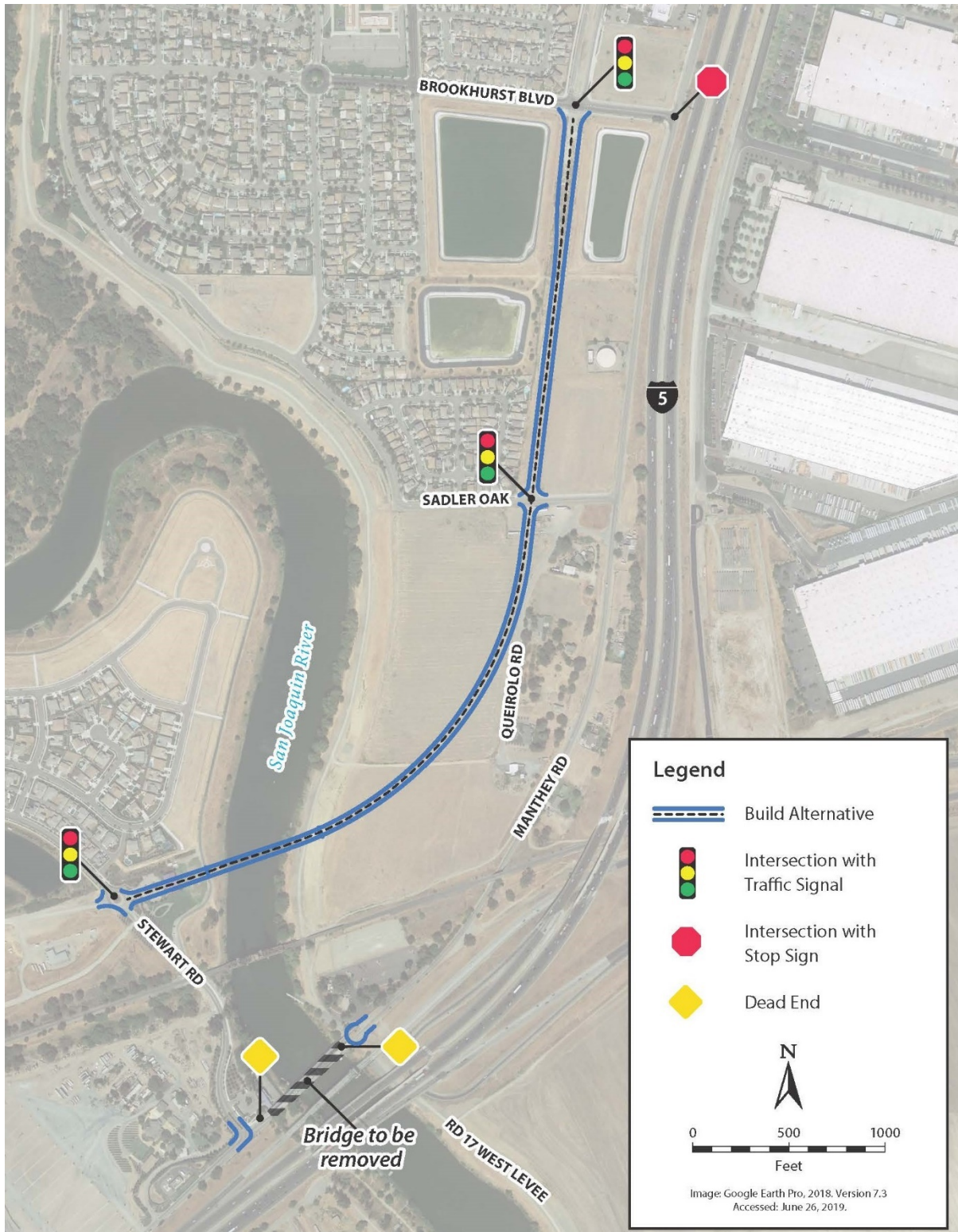


Figure 1-3. Build Alternative Overview

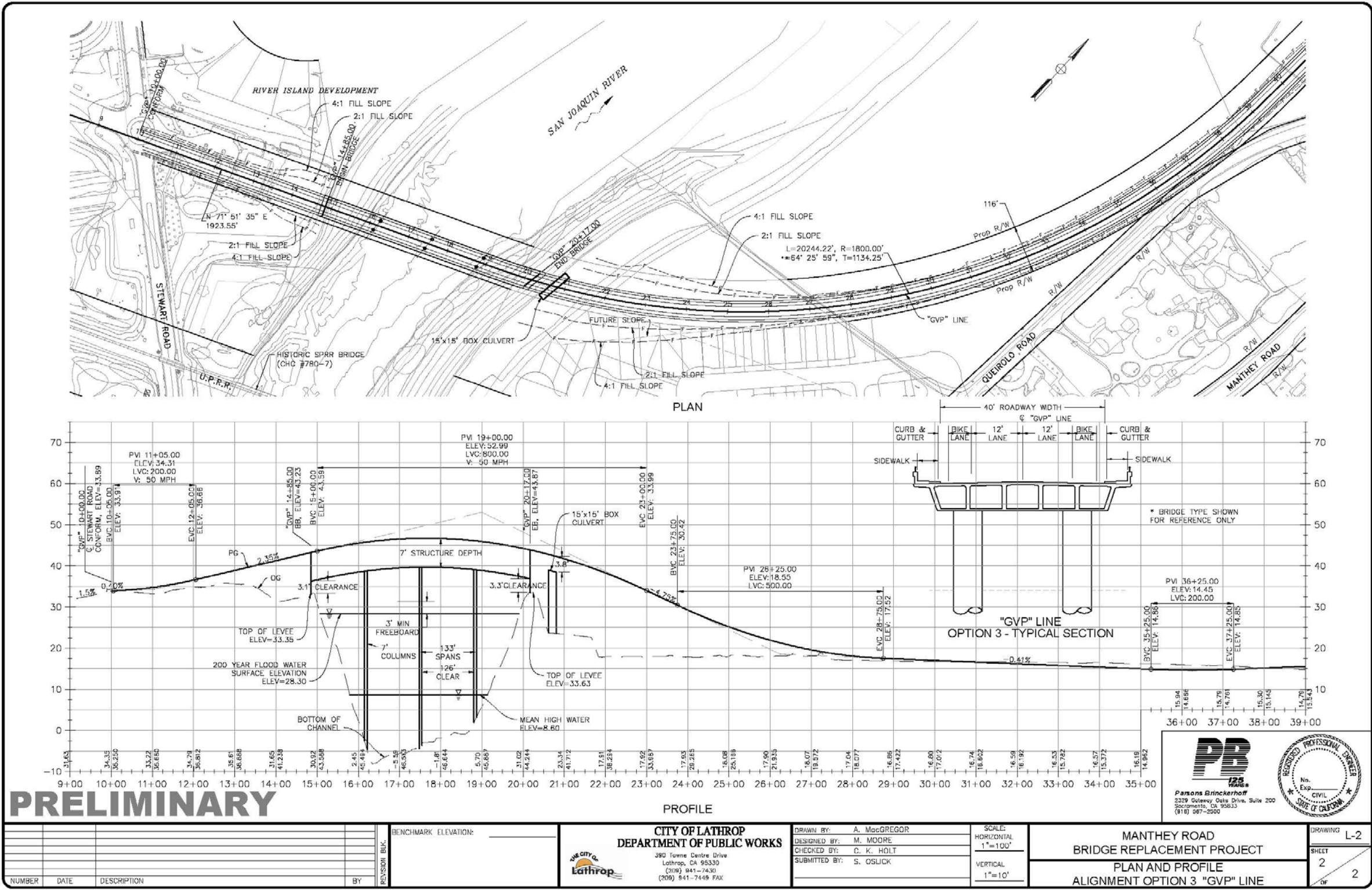


Figure 1-4a Build Alternative Plan and Profile



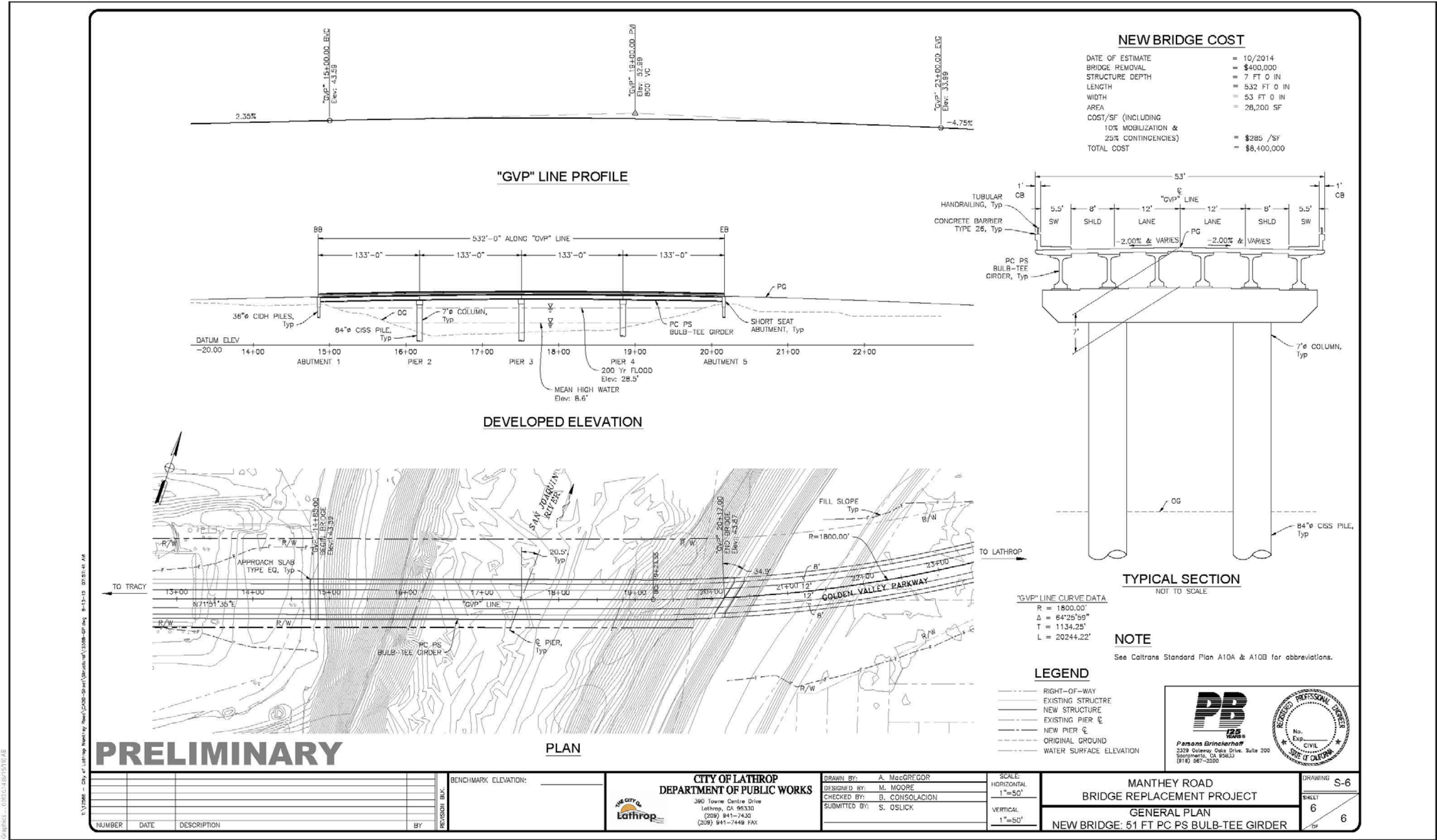


Figure 1-5 Proposed Bridge General Plan

Intersections of Golden Valley Parkway with Brookhurst Boulevard and Sadler Oak Drive would be signalized and would accommodate left and right turns from all directions. No changes would be made to the intersections of Manthey Road at Brookhurst Boulevard and Sadler Oak Drive. The intersection of Golden Valley Parkway and Stewart Road would be signalized; access to Stewart Road south of Golden Valley Parkway would be limited to right turns from Golden Valley Parkway. Northbound traffic on Stewart Road would only be able to turn right (Figure 1-6).

The Manthey Road Bridge would be removed after the new bridge is open to traffic. Access to the Mossdale County Park will be maintained and Manthey Road would culminate in a cul-de-sac at Mossdale County Park to allow for bus turn-arounds. On the west side of the San Joaquin River, Manthey Road would end in a free left turn onto Stewart Road. A free right turn from Stewart Road to Manthey Road would be striped.

Utility Relocations

The Build Alternative is a new route, and no utilities cross the river at this location. Minor modifications to above ground utility features, such as manholes and utility valves, may be required along the proposed alignment. Relocation of one power pole on the Mossdale Landing side of the San Joaquin River also may be required.

Detours

The existing Manthey Road and Manthey Road Bridge would remain in operation during construction of the new bridge and the approach roadways. No temporary detours would be required for this alternative.

Construction Methods

The general construction methods are described below.

Bridge Construction and Demolition

Construction of the new bridge and removal of the existing bridge would directly affect a total of approximately 500 feet of channel width of the San Joaquin River (i.e., from top of levee to top of levee on either side) and approximately 200 feet of non-contiguous channel length (at the construction and demolition sites).

In-Water Construction Activities

In-water construction activities, described below, consist of those construction activities occurring in water, excluding work confined within cofferdams. These activities would be limited to the period of June 1 to October 31, except as noted. The construction season in-water work window of June 1 to October 31 was determined after consideration of California Department of Fish and Wildlife, National Marine Fisheries Service, and the United States Fish and Wildlife Service in-water work restrictions, timing of presence of multiple special-status fish species, and timing of breeding seasons for other special-status species in the project area.

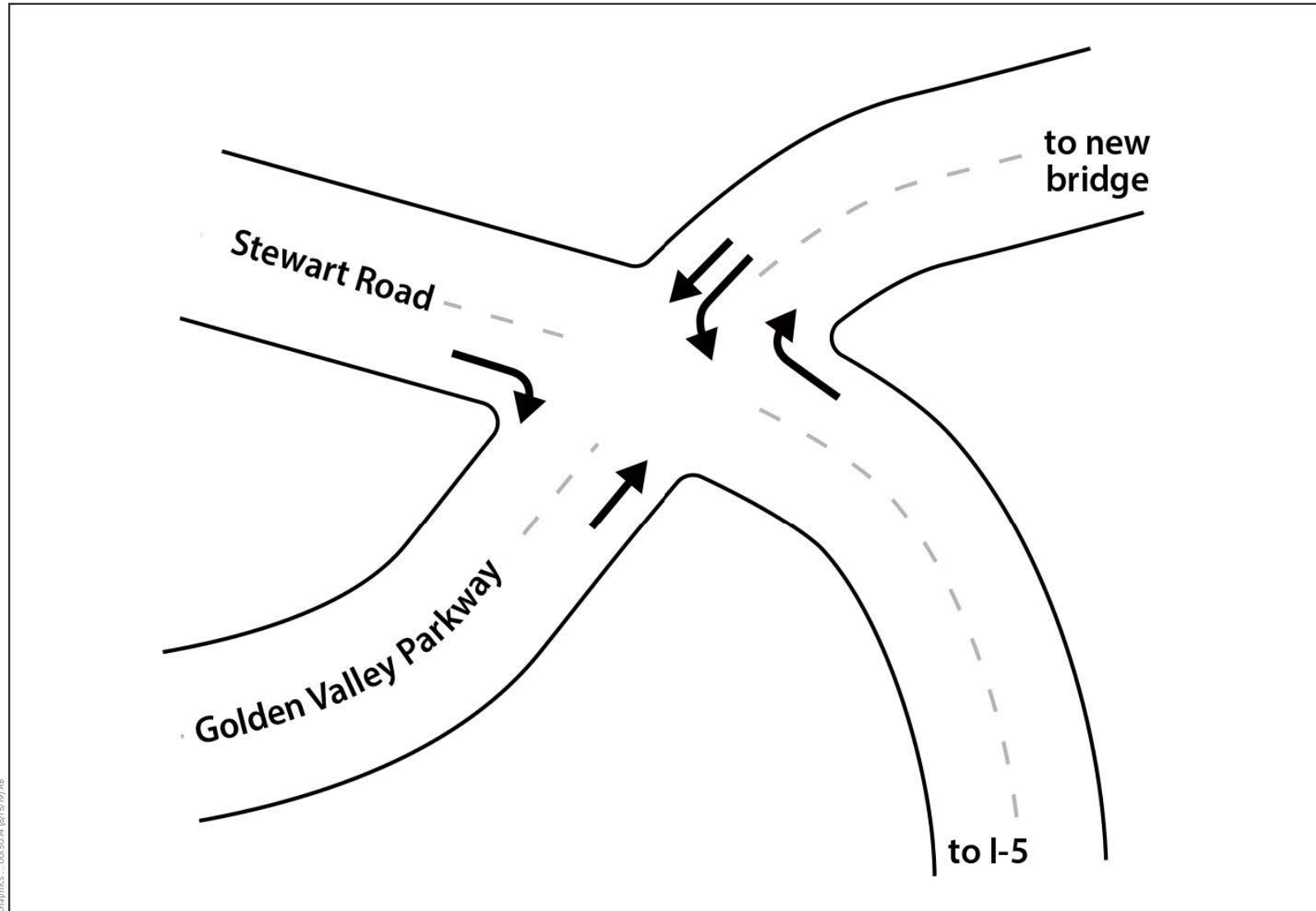


Figure 1-6 Intersection of Stewart Road and Golden Valley Parkway

The annual in-water work windows allow sufficient time to install a temporary trestle as well as casings or cofferdams, which will isolate activities from the active river, thus extending time available for foundation and pier demolition and construction. Activities occurring within cofferdams or steel casings would not be limited by the June 1 to October 31 in-water work window because they would not occur in water. When they are no longer needed to isolate work, temporary trestle and cofferdams would be removed during subsequent in-water work windows. Other construction activities above the water, such as installation of the columns, pier caps, and the superstructure, can take place outside the in-water work window.

Bridge construction would start during the first in-water work window, and bridge removal would commence in the third in-water work window, after the proposed bridge is completed. Additional information on the proposed construction schedule is presented below (see “Proposed Construction Schedule”). Additional information on the sequencing of construction activities is provided below (see “Sequencing of Construction Activities”).

Installation of casings or cofferdams, as well as other construction activities, will be performed from an installed temporary trestle, which would allow for the passage of small recreational boat traffic. A temporary trestle would span the entire width of the river above the 200-year flood-event water surface elevation of 28.5 feet. The contractor would have the option of constructing the temporary trestle below the 200-year flood-event water surface elevation of 28.5 feet, as long as all timber decking is removed in advance of any anticipated flood event above the trestle deck. The temporary trestle would be 40 to 60 feet wide and would consist of approximately 30-foot spans, with five to eight piles per trestle pier. To provide an adequate work platform for new pier construction, the temporary trestle would have extensions perpendicular to the main trestle at proposed bridge pier locations. These extensions would have additional piles, which would be steel pipe or steel H-pile (steel beams that are driven into the earth by pile driving) equipment driven into the channel bottom, using a combination of vibratory and impact pile drivers. The piles would be embedded approximately 50 to 100 feet beneath the existing mudline. It is anticipated that up to eight piles would be driven per day and that pile driving would last up to a total of 40 days during the in-water work window.

Separate temporary trestles would be used for bridge removal and bridge construction. The bridge construction trestle would be as described above. The bridge demolition temporary trestles would extend out from each bank; only one of the temporary trestles would be required to extend to the center pier. Each bridge demolition temporary trestle would be approximately 40 feet long, with 30-foot spans. Extensions at existing pier locations would have additional piles. The bridge demolition temporary trestle would use piles and installation methods similar to those for the bridge construction temporary trestle described above.

The contractor would have the option of using barges instead of a temporary trestle for bridge removal and for bridge construction for the precast girder bridge type. It is anticipated that up to three barges would be in use at the project site at any given

time. Up to two barges with cranes would be moved from pier to pier during bridge demolition and construction of new bridge piers and would be moved from span to span during precast girder erection. Each crane barge would be secured in place using four steel pipe or steel H-piles (spud piles) driven into the channel bottom after each move, similar to how the temporary trestle piles would be installed, as described above. An additional barge would be used to off-haul material from bridge demolition and transport the precast girders to the construction site. This barge would be secured in place using two spud piles, if needed, during loading and unloading. Barges would be approximately 40 feet wide and 150 feet long and remain onsite throughout construction. It is anticipated that construction and demolition activities from barges would require barge movement and spud pile placement outside the in-water work window previously defined. The barges would be repositioned in the channel throughout construction only as needed to complete the work and barges would be removed after bridge construction and demolition are completed.

Cofferdams would be constructed around the three existing in-water foundations, prior to removing the existing foundations, to allow demolition activities to proceed without being limited by the in-water work window. Cofferdams would remain in the river between construction years, as needed, and would be removed during a subsequent in-water work window. The cofferdams used for removal of the existing bridge would be approximately 20 to 30 feet wide and 40 to 60 feet long. The center cofferdam would be located in the main channel, while the other two cofferdams would be located near the west and east shorelines. When all three cofferdams are installed, the cumulative width of the cofferdams would total approximately 65 to 95 feet. Based on a summer river flow width of approximately 330 feet, the cumulative cofferdam width would represent a maximum of approximately 29 percent of the total channel cross section of the San Joaquin River.

Cofferdams would be constructed of steel sheet piles that would be driven into the channel bottom using a vibratory hammer. Once the cofferdams are installed, seams would be sealed to separate the work area from the river, and the cofferdams would be dewatered. Any water displaced would be captured for treatment and released onsite, thereby preventing the discharge of contaminated water to the river. The cofferdams would extend above the 200-year flood event water surface elevation of 28.5 feet. The contractor would have the option of constructing the cofferdams below the 200-year flood event water surface elevation of 28.5 feet, as long as they either install a suitable cap to the top of the cofferdam or remove one or more sheet piles in advance of any anticipated flood event above the cofferdams. The cap would be required to prevent flood waters and fish from entering into the dewatered area inside the cofferdam. If a segment of cofferdam is removed, it would be reinstalled during the subsequent in-water construction window using the same procedures as during the initial cofferdam installation. Cofferdams would be removed during the in-water work window after bridge demolition or construction are completed.

Steel casings would be sized to match the proposed pile diameter and are anticipated to be 84 inches in diameter. The casings would be driven into the

channel bottom, which consists primarily of mud and silt, using a combination of vibratory and impact pile drivers and cranes from the temporary trestle or barge. The casings would be installed within bubble curtains to attenuate underwater noise. A crane would lift the large steel casing vertically into place at the desired location and lower it into the channel bottom. The weight of the casing itself would sink it several feet into the soft upper layers of river bottom. A vibratory hammer would then be used to advance the casing farther into the soil to the extent practical, and then the casing would be driven to the required elevation with an impact hammer. The casings would be embedded approximately 90 to 125 feet beneath the existing mudline. It is anticipated that one steel casing would be driven over the course of 2 to 4 days and that driving would last up to a total of 24 days. Once the casings are installed, any seams would be sealed to separate the work area from the river, and the casings would be dewatered. Any water displaced would be captured for treatment and released onsite, thereby preventing the discharge of contaminated water to the river. The casings would extend above the 200-year flood-event water surface elevation of 28.5 feet. The contractor would have the option of constructing the casings below the 200-year flood- event water surface elevation of 28.5 feet, as long as they install a suitable cap to the top of the casing in advance of any anticipated flood event above the casing. The cap would be required to prevent flood waters and fish from entering the dewatered area within the casing. The casings may be removed up to approximately 20 feet below the mudline and cut at the mudline after pile installation, or they may be left in place to act as the outer shell of the pile. Casing removal would occur during the in-water work window, after pile and column construction are completed.

Out-of-Water Construction Activities

Out-of-water construction activities include those activities that would occur within the sealed areas encompassed either by cofferdams or casings and construction activities above water or on land. Activities that would occur within cofferdams or casings include demolition of the existing bridge foundations and construction of the proposed bridge foundations and columns. Activities that would occur above water include placement of caps and decking. On land activities include all approach work.

Permanent bridge piers would be founded on 84-inch diameter concrete cast-in-steel-shell piles or concrete cast-in-drilled-hole piles with temporary steel casings. The soil inside the casing would be drilled out. A rebar cage would be placed in the casing, and then concrete would be poured into the casing. The piles would extend approximately 90 to 125 feet below the mudline. All of this work would occur inside the sealed steel casing installed during the in-water work window; therefore, it is not considered in-water work.

Abutments would be founded on 4-foot-diameter cast-in-drilled-hole-piles. These piles would be drilled with temporary casings and/or the use of a drilling slurry to prevent cave-in of the hole walls. Once the holes are drilled, the concrete would be poured at the same time as the temporary casing removal and/or displacement of the drilling slurry. The cast-in-drilled-hole-piles would be approximately 60 to 90 feet long. At each bridge abutment, approximately 300 cubic yards of rock slope

protection would be installed above the ordinary high water mark to prevent scour and erosion at the abutments. The rock slope protection would consist of half-ton rock with a median diameter of approximately 27 inches and cover approximately 2,700 square feet of the levee slope, for a distance of approximately 90 linear feet. On both levees, the rock slope protection would be placed from the bridge abutment to the toe of the levee, which is above the ordinary high water mark.

After construction of bridge foundations, temporary formwork for column concrete would be placed on top of the pile, column rebar placed, and concrete poured in the form. For the cast-in-place box girder bridge type, bridge falsework would be constructed, and pier caps would be cast as an integral part of the superstructure. For the precast girder bridge type, a cast-in-place concrete pier cap would be constructed atop the columns to serve as the support for the bridge girders. The precast girders would be fabricated offsite and transported to the field to be erected atop the pier caps, using one or more cranes from the temporary trestle or barges. Girder transportation may be by barge or truck. After girder erection, a cast-in-place deck would be constructed on the girders.

Bridge Removal

Existing foundations would be removed to 3 feet below the mudline, per Caltrans standards. The existing timber piles are below the channel bottom and would be left in place. Site-specific details related to foundation and pile removal will be determined in final design, in coordination with the U.S. Coast Guard. Based on available historic channel elevations, the channel bottom elevation has been stable, and no future degradation of channel bottom is anticipated.

Roadway Construction

Excavation to a depth of up to 10 feet is expected in order to construct the new roadway, drainage facilities, and any underground utilities.

Proposed Right-of-Way Acquisition and Temporary Construction Easements

The project would require partial right-of-way acquisition from 11 privately owned properties (Table 1-1). Temporary acquisitions would be required from 10 parcels totaling 7.49 acres. Permanent acquisition would be required from 7 parcels totaling 7.57 acres. Permanent easements from Reclamation District 17 and Reclamation District 2062 would consist of 0.12 acre from Assessor's Parcel Number 241-020-67 (Reclamation District 17) and 0.33 acre from Assessor's Parcel Number 213-310-06 (Reclamation District 2062), totaling 0.45 acre.

Table 1-1. Right-of-Way Acquisition and Easements

Assessor's Parcel Number	Build Alternative Temporary Construction Easement (acres)	Build Alternative Permanent Acquisition (acres)	Build Alternative Permanent Easement (acres)
191-190-15	0.00	0.04	0.00
241-020-61	0.27	0.00	0.00
241-020-08	0.09	0.03	0.00
241-020-63	0.53	3.84	0.00
241-020-68	1.90	1.68	0.00
241-020-67	0.22	0.00	0.12
241-020-69	0.85	0.48	0.00
213-310-06	0.11	0.00	0.33
213-310-15	3.23	1.17	0.00
213-300-05	0.20	0.00	0.00
213-300-06	0.09	0.33	0.00
TOTAL	7.49	7.57	0.45

* Permanent Easements

Staging Areas

The construction staging area for the new bridge and associated approaches would be located within the proposed approach roadway between Stewart Road and Brookhurst Boulevard, including areas covered by proposed fill slopes on the east bank. Construction staging for the removal of the existing bridge would be within the existing roadway between Stewart Road and the Mossdale County Park driveway access, as this segment of the roadway would become permanently closed with the removal of the existing bridge.

Borrow and Disposal Sites

The proposed action would result in the need for imported borrow. Imported borrow will be of a quality suitable for the purposes intended, free of organic matter or other unsatisfactory material. Fill would be obtained from commercial sources.

Existing soils adjacent to the I-5 corridor will be tested for aerially deposited lead prior to disposal or reuse. Existing soils within the agricultural fields will be tested for residual pesticides and herbicides prior to disposal or reuse.

Site Restoration

During construction activities, the contractor would exercise due care to avoid injury or damage to existing roadside trees, shrubs, and other plants that are not to be removed, and all other improvements or facilities within or adjacent to the roadway. Suitable safeguards would be installed to protect existing features from injury or damage. If an object or facility is injured or damaged during construction activities, it

would be replaced or restored to a condition as good as when the contractor entered upon the work, or as good as required by the specifications accompanying the contract.

Sequencing of Construction Activities

The existing bridge would be demolished upon completion of the new bridge.

The following construction sequence would take place: Clearing and grubbing the construction area would be followed by access roadway construction, as needed, and then excavation for abutments, drainage facilities, retaining walls, and other facilities, as needed. In-water construction would begin on June 1 with the installation of the temporary trestle, or spud piles for barge(s), and cofferdams or steel casings for construction of bridge piers or bridge demolition, finishing all in-water work by October 31. After October 31, work would be confined to within the temporary cofferdams or steel casings or be above the water. The temporary trestle, or barge(s), and cofferdams would remain in the waterway to assist in the construction of foundations, columns, and bent caps, as well as the erection of falsework for the cast-in-place option or precast girder erection. Separate trestles or barges and cofferdams would be required adjacent to the existing Manthey Road Bridge for demolition of the existing bridge. Once the superstructure is completed, the temporary trestle(s) and cofferdams, if used, would be removed during the following in-water work window. Drainage facilities and retaining walls would be constructed separately, followed by approach-roadway.

Proposed Construction Schedule

Construction is to be broken into two phases. Phase one would be bridge construction along the alignment, and phase two would be removal of the existing bridge. Phase one construction is anticipated to take 18 months, would begin in summer 2022, and occur over two construction seasons. It is anticipated that the new bridge would be open to traffic by fall 2023. Phase two is anticipated to take 8 months and would begin in spring, following the opening of the new bridge to traffic, and occur over a single in-water work season.

Table 1-2 identifies the type of equipment that would be used to construct the project.

Table 1-2. Construction Equipment and Phasing

Phase	Equipment	Number per Day
Bridge Demolition	Cranes	2
	Vibratory Pile Driver	1
	Off-highway trucks	2
Grubbing/Land Clearing	Crawler Tractors	6
Foundation Construction	Bore/drill rigs	2
	Excavators	2
	Cranes	2
	Crushing/Processing Equip.	2
	Vibratory Pile Driver	1
	Impact Pile Driver	1
Bridge Construction	Cranes	2
Grading/Excavation/Retention Wall	Crawler Tractors	5
	Graders	5
	Rollers	4
	Rubber Tired Loaders	8
	Scrapers	5
	Tractors/Loaders/Backhoes	6
	Concrete Truck/Pump	2
Drainage/Utilities	Cranes	1
	Rough Terrain Forklifts	6
	Trenchers	3
	Tractors/Loaders/Backhoes	4
Paving	Off-highway Trucks	1
	Pavers	7
	Paving Equipment	8
	Rollers	6
	Tractors/Loaders/Backhoes	6

This project contains a number of standardized project measures that are used on most, if not all, Caltrans projects and were not developed in response to any specific environmental impact resulting from the proposed project. These measures are addressed in more detail in the Environmental Consequences sections found in Chapter 2, *Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures*.

Transportation System Management and Transportation Demand Management Alternatives

Transportation System Management strategies focus on improving the efficiency of existing facilities without increasing the number of through lanes. Options such as ramp metering, auxiliary lanes, and reversible lanes are generally implemented under Transportation System Management and help reduce congestion. Transportation System Management measures could not satisfy the purpose and need of the project because the purpose and need of the project is safety and circulation, not increasing capacity.

Transportation Demand Management strategies focus on regional means of reducing the number of vehicle trips and vehicle miles traveled, as well as increasing vehicle occupancy. In addition to High Occupancy Vehicle lanes, projects may encourage these reductions by providing other options, such as ride sharing and facilities for public transportation or bicycle and pedestrian facilities. As a stand-alone alternative, Transportation Demand Management strategies would not meet the project purpose; however, the project does include Transportation Demand Management options such as bicycle and pedestrian access on the new bridge.

Reversible Lanes

Reversible lanes were not considered because they would not meet the purpose and need of the project for this bridge replacement.

Access to Navigable Waters

The proposed project would not affect access of the public to the San Joaquin River, a navigable water. Public access to the river from public dock at the Mossdale County Park would remain unchanged.

1.4.2 No-Build (No-Action) Alternative

Under the No-Build Alternative, the existing Manthey Road Bridge would remain in its current location, and no facilities would be constructed to meet the purpose and need identified above.

1.5 Alternatives Considered but Eliminated from Further Discussion

Three build alternatives were originally developed for the project, Alternatives 1, 2, and 3. These alternatives were presented in a public scoping meeting in November 2014. Alternative 2 was withdrawn from consideration early in environmental technical studies when it became apparent that the other two alternatives were feasible and would result in fewer environmental impacts. Alternative 1 was withdrawn after all technical studies were complete because it did not support the City's long-term circulation plan.

Alternative 1

Under Alternative 1, the City would demolish the existing bridge and replace it with a new bridge in the same location. The new bridge would measure approximately 538 feet long by 34 feet, 10 inches wide, and would accommodate two 12-foot-wide traffic lanes, two 4-foot-wide shoulders, and concrete traffic barriers with tubular railings. The bridge would be supported by four piers supported by cast-in-steel shell piles in the river and an abutment on either side supported by cast-in-drilled-hole piles. To meet United States Army Corps of Engineers' requirements to provide a 3-foot vertical clearance above the levee, the new bridge would be slightly higher (approximately 8 feet); therefore, the span would need to be slightly longer than the existing bridge. A combination of fill slopes and retaining walls would be used to retain the higher approach roadway.

Within the project limits, the approach roadway on either side of the bridge would be widened to conform to the bridge. The Manthey Road/Stewart Road T-intersection west of the bridge would be modified to accommodate the new bridge and roadway. Driveway access to Mossdale County Park would not be altered.

Alternative 1 was subsequently removed from consideration by the City's project development team because it did not meet the project purpose and need as well, and it did not support the City's circulation plan in the long term. The Alternative 1 footprint did not allow for future expansion anticipated to be needed in the long term.

Alternative 2

Under Alternative 2, the Manthey Road Bridge would be demolished and replaced on another alignment approximately 300 feet north or downstream of the existing bridge, south of the Union Pacific Railroad Bridge. This option would require realignment of a portion of Manthey Road from its existing alignment. The realignment limits would be from the north side of the railroad underpass to the intersection of Stewart Road. This option would require reconstruction of the railroad underpass and realignment of the road through Mossdale County Park. Construction of this alternative would require temporary realignment of the Union Pacific Railroad tracks while the undercrossing was widened.

This alternative was withdrawn from consideration because other alternatives were feasible and functioned at least as well and did not result in conflicts with the Union Pacific Railroad or the placement of the realigned road within a park (a public recreation facility that would be considered a Section 4(f) resource). Therefore, this alternative was not carried forward for both logistical and environmental reasons.

1.6 Permits and Approvals Needed

The following permits, licenses, agreements, and certifications are required for project construction:

Table 1-3. Anticipated Permits and Approvals

Agency	Permit/Approval	Status
Regional Water Quality Control Boards	Clean Water Act, Section 401 Water Quality Certification	Application to be submitted during Design Phase
United States Army Corps of Engineers	Clean Water Act, Section 404 Nationwide Permit	Application to be submitted during Design Phase
United States Army Corps of Engineers	Title 33, US Code Section 408 Permit	Application to be submitted during Design Phase
California Department of Fish and Wildlife	CDFG code, Section 1602, Lake and Streambed Alteration Agreement	Application to be submitted during Design Phase
Central Valley Flood Protection Board	Encroachment Permit	Application to be submitted during Design Phase
United States Fish and Wildlife Service/ National Marine Fisheries Service	Endangered Species Act, Section 7: Biological Opinion	Biological Assessment submitted April 2020
California State Historic Preservation Officer	Section 106 Concurrence	In process
State Lands Commission	Use Permit	Application to be submitted during Design Phase
United States Coast Guard	Bridge Permit	Application to be submitted during Design Phase
Reclamation Districts 17 and 2062	Approval	Approval request to be submitted during Design Phase

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

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

- **Consistency with Plans**—The Build Alternative is consistent with the City of Lathrop General Plan, the West Lathrop Specific Plan, and the San Joaquin Council of Governments' Regional Transportation Plan/Sustainable Communities Strategy.
- **Coastal Zone**—The proposed project is not in or near a coastal zone and will not affect a coastal zone.
- **Wild and Scenic Rivers**—The proposed project is not adjacent to or within the vicinity of a wild and scenic river and, therefore, will not affect such a resource (National Wild and Scenic Rivers Website: <http://www.rivers.gov/california.php>).
- **Growth**—A Community Impact Assessment, including a first cut analysis, was prepared for the project in July 2017. The proposed project will replace an existing bridge and will not directly induce growth. The Build Alternative will not indirectly induce growth by providing access to new areas or by altering the nature, location, or timing of planned future growth.
- **Timberland**—No timberlands are within the project vicinity and, therefore, the project will not affect timberlands.
- **Paleontology**—The project site is immediately underlain by the Dos Palos alluvium. This unit records the advance and retreat of a variety of riverine and marsh environments during the Holocene and may also extend back into the Pleistocene. The University of California Berkeley Museum of Paleontology database contains 29 records for vertebrate finds in sediments of Quaternary age in San Joaquin County. None of these records were for fossils of Holocene age or specifically for the unit in the project area. The sensitivity of the Dos Palos alluvium for paleontological resources is unknown because—although it is likely young—portions of this sedimentary unit may extend into the Pleistocene. Implementation of Caltrans standard provisions regarding Paleontological Resources, which provides instruction for construction contractors regarding proper treatment of unanticipated discoveries, would ensure there would be no impacts on paleontological resources.
- **Plant Species**—A Natural Environment Study was prepared for this project in December 2018 and updated in March 2020. No special-status plants were found during botanical survey of the biological study area; therefore, construction of the

proposed project is not expected to cause any direct or indirect impacts on special-status plants.

2.1 Human Environment

2.1.1 Existing and Future Land Use

The project is located in the City of Lathrop in southern San Joaquin County. Development in the city and the region is concentrated north of the project area, along the east side of I-5 and along the eastern bank of the San Joaquin River, which meanders northerly from the project area. The major land uses in the immediate vicinity of the project area include Mossdale Crossing Park and Launching Facility and agricultural or undeveloped lands to the north and south. An industrial shipping and distribution warehouse (Home Depot Import Distribution Center) is located northeast of the project area, on the opposite side of I-5. A developed residential community known as Mossdale Landing is located at the northern end of the project area, in the proximity of Brookhurst Boulevard and north of Sadler Oak Road between the San Joaquin River and I-5. Land uses at Mossdale Landing include Low-Density and Medium-Density residential, Village Commercial, Service Commercial, Parks, Schools/Fire Station, Open Space, and major streets. The Mossdale Landing development, from about 0.3 miles north of Barbara Terry Boulevard to about 0.1 miles north of Sadler Oak Drive, included approximately 1,700 homes within 654,000 square feet of total space. To the west of the project area, west of I-5 and north of I-205, the River Islands residential development is under construction. River Islands encompasses nearly 5,000 acres and at full build-out will include 11,000 homes. Land uses at River Islands include Low-, Medium-, and High-density residential, commercial/retail, town center, and recreational.

The City General Plan land use designations within the study area include neighborhood park, Medium-Density, Service Commercial, High-Density Residential, Stewart Tract Residential, and River Islands Employment Center. Currently, these lands are generally agricultural or undeveloped, with scattered residences. General Plan land use designations are shown in Figure 2.1.1-1. One of the primary goals of the City General Plan is redeveloping the historically industrially focused city as a “New Town.”

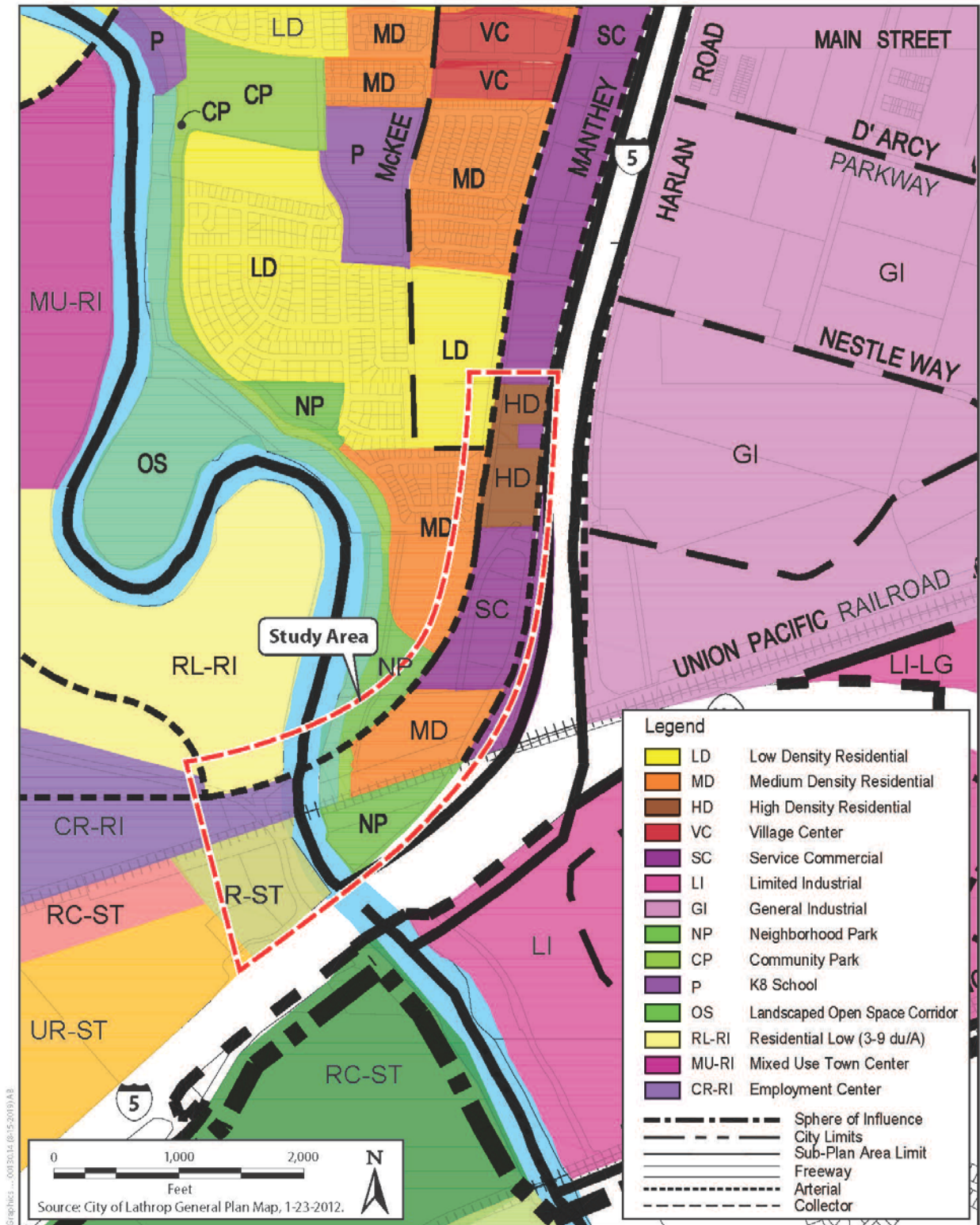


Figure 2.1.1-1 Existing and Planned Land Use

2.1.2 Parks and Recreational Facilities

Affected Environment

This section was informed by the Community Impact Assessment completed in July 2017 for this project. One park (Mossdale County Park) is located within 0.5 miles of the proposed project. Mossdale County Park is a county regional park featuring a large, two-lane boat ramp, a floating dock, and picnic areas. The park is located along the San Joaquin River and Manthey Road, which provides access to the park.

In addition, a neighborhood park is proposed as part of the *Mossdale Landing East Urban Design Concept*, just north of the Southern Pacific Railroad tracks along the San Joaquin River. A number of recreational facilities are proposed for River Islands, including parks, playing fields, green spaces, picnic areas, and riverfront access.

Environmental Consequences

Build Alternative

The proposed project would not have permanent effects on parks because no parks are located within its footprint. During construction, the proposed project would result in minor effects to Mossdale County Park, approximately 750 feet south of the footprint. These effects, namely noise and other construction disruptions such as dust and the presence of construction equipment, would not affect the general use of the park such that the community in the area would be precluded from its benefit. Access to Mossdale County Park would not be altered and would be maintained during project construction.

The proposed neighborhood park described in the *Mossdale Landing East Urban Design Concept* would be approximately 0.25 miles north of the Build Alternative. At this distance, construction activities would result in temporary background noise at the proposed park area.

While there are Section 4(f) resources within the project vicinity, there is no use of these resources under the proposed project (Appendix A).

No-Build Alternative

Under the No-Build Alternative, no construction of the proposed project would take place and there would be no temporary or permanent impacts on parks in the project vicinity related to this project.

Avoidance, Minimization, and/or Mitigation Measures

Access to the surrounding parks and recreational areas would be maintained during construction; therefore, no avoidance, minimization, or mitigation measures are required.

2.1.3 Farmland

Regulatory Setting

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

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

Affected Environment

This section was informed by the Community Impact Assessment completed in July 2017 for this project. Active farmland is located in the study area along the west side of Manthey Road (Figure 2.1.3-1) (Assessor's Parcel Numbers 214-02-063 and 241-02-068). According to the California Department of Conservation Farmland Mapping and Monitoring Program, these parcels are designated as prime farmland. This land is planned for residential use in the City General Plan, designated as Medium-Density Residential use, and is zoned as Mossdale Village Medium Density Residential as part of the Mossdale Village Planning Area. According to the California Department of Conservation, this land is not enrolled in a Williamson Act Contract.

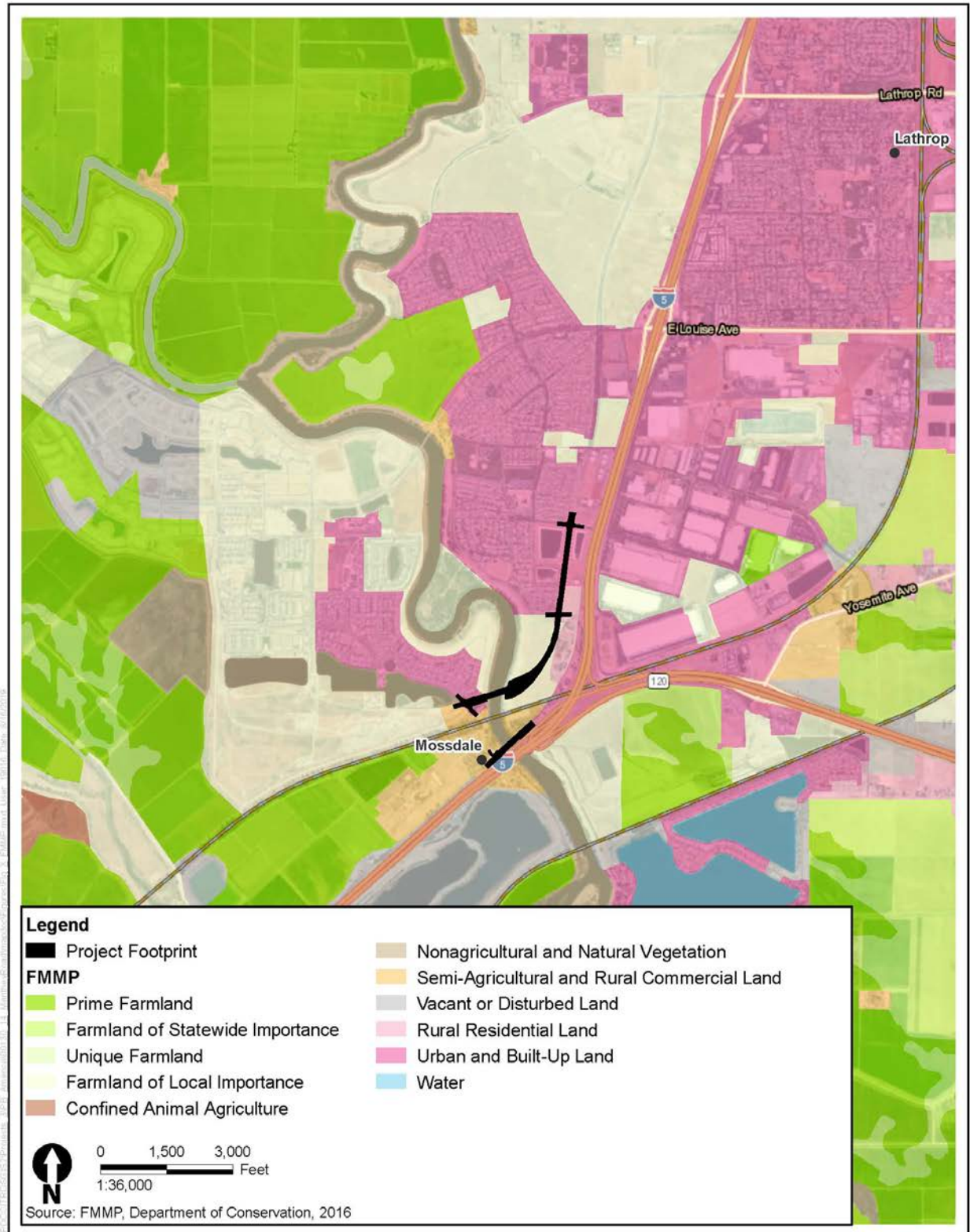


Figure 2.1.3-1 Location of Farmlands in the Project Area

Environmental Consequences

Build Alternative

Farmland in the study area is classified as prime farmland. The proposed project would require the acquisition of two parcels, Assessor's Parcel Numbers 241-020-063 (23.7 acres) and 421-020-068 (16.0 acres). The construction easement/permanent acquisition required would be 0.53/3.84 acres and 1.90/1.68 acres for the parcels, respectively. This would total 5.52 acres of prime farmland permanently converted. Please note that the impact acreages are calculated from preliminary design and will be refined during final design.

At the county level, 5,168 acres of Prime and Unique Farmland were converted to another use from 2014–2016, according to the most recent available data published in the *San Joaquin County 2014–2016 Land Use Conversion* table. This was equal to 0.01 percent of Prime and Unique Farmland in the County. Statewide, 112,579 acres of Prime and Unique Farmland were converted to another use from 2010–2012, according to the most recent available data published in the *California Farmland Conversion Report 2015*, which was equal to approximately 0.02 percent of Prime and Unique Farmland in the state. Comparatively, the acquisition of 5.52 acres would be equal to less than 0.0001 percent of County Prime and Unique Farmland.

A land evaluation and site assessment was performed using Form AD-1006 because prime farmland would be converted to accommodate the new roadway. The scoring of the site in Form AD-1006 finds the acquisition of 5.52 acres total not to be substantial, largely due to the location of the acquisition on each parcel and the small size relative to the rest of the parcel. With acquisition as proposed, the remainder of each parcel could continue to be used for agricultural purposes.

The land is currently zoned for Mossdale Village Medium Density Residential, so conversion of the land from agricultural land would not result in any conflicts with land use and zoning.

No-Build Alternative

Under the No-Build Alternative, no construction of the proposed project would take place, and no new right of way would be acquired. Therefore, there would be no effect on farmland.

Avoidance, Minimization, and/or Mitigation Measures

The parcels are not enrolled in a Williamson Act contract and, with acquisition as proposed, the remainder of each parcel could continue to be used for agricultural purposes. Therefore, no avoidance, minimization, or mitigation measures are required.

2.1.4 Community Character and Cohesion

Regulatory Setting

The National Environmental Policy Act of 1969, as amended, established that the federal government use all practicable means to ensure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings (42 United States Code 4331[b][2]). The Federal Highway Administration in its implementation of NEPA (23 United States Code 109[h]) directs that final decisions on projects are to be made in the best overall public interest. This requires taking into account adverse environmental impacts, such as destruction or disruption of human-made resources, community cohesion, and the availability of public facilities and services.

Under CEQA, an economic or social change by itself is not to be considered a significant effect on the environment. However, if a social or economic change is related to a physical change, then social or economic change may be considered in determining whether the physical change is significant. Since this project would result in a physical change to the environment, it is appropriate to consider changes to community character and cohesion in assessing the significance of the project's effects.

Affected Environment

This section was informed by the Community Impact Assessment completed in July 2017 for this project. The study area is in a rural community that contains roads, a park, scattered residences, industrial warehouses, and farmland. The houses are spread out on large lots. Within the project area limits, eight residences are located along Manthey Road, east of the San Joaquin River. The Mossdale Village residential development is located north of these residences; the development comprises 1,161 acres of residential development, a village center, and service commercial and highway commercial uses. This development is more suburban in character and has the feel of a master planned community, with community amenities close to homes that are situated on smaller subdivision lots. While a greater degree of cohesion exists in the areas beyond the project area limits in Mossdale Village, as a result of its planned composition, the small cluster of residences along Manthey Road do maintain a unique rural character that is indicative of the community that existed prior to recent development activities. The master-planned Mossdale Landing South development, which would extend Mossdale Village south to the San Joaquin River, is proposed within a large portion of the project area limits.

On the west side of the river, just north of Manthey Road, are the River Islands Welcome Center and the Dell'Osso Family Farm. The newly constructed River Islands Academy is located just north of the Dell'Osso Family Farm along Stewart Road. These developments are all part of the larger planned community known as River Islands, which is currently under development. Full build-out of the development originally was planned by 2025, but development has been delayed by almost 10 years. The River Islands development, at full build-out, is proposed to

have approximately 11,000 units. Of these, 498 single-family homes are proposed to be a part of the Community at South River Bend which is directly north of the project on the west side of the river.

The total population of the study area was 844 at the time of the 2010 United States Census. Removing Block 1018 in Census Tract 51.19—the majority of which is not located in proximity to the project (approximately 1 mile north of the existing Manthey Road Bridge)—would reduce this population to only 32 people. Of the total population of 844, the largest racial/ethnic group was Asian (39.5 percent); persons of Hispanic or Latin American origin were the next largest group (24.2 percent), followed by Whites (20.3 percent). The remaining population, in order of descending proportion, was Black or African American, Two or More Races, Native Hawaiian/Pacific Islander, and Native American. No residents in the study area were identified as “Some Other Race”. Based on these demographic characteristics, the study area—and more specifically, Mossdale Village—can be characterized by a somewhat larger proportion of Asian residents and a smaller Hispanic or Latino population than characteristic of the city as a whole. The proportion of Whites residing in the city and in the study area appears comparable. Again, excluding Block 1018 in Census Tract 51.19, the study area population becomes almost entirely white—with 15 Whites and 1 Black/African American residing on the east side of the San Joaquin River and 5 Whites, 4 Asians, and 3 Hispanic/ Latino residents on the west side of the river. No census data is available for the River Islands development, because it was not developed at the time of the last census.

Business activity in the study area consists of the River Islands Welcome Center, farm activities at the private properties, special events at the Dell’Osso Family Farm, and an industrial yard. Major employers in the county include, but are not limited to, Blue Shield of California, the University of the Pacific, various state and county government offices, various food packers and shippers, San Joaquin General Hospital, and St. Joseph’s Cancer Center, none of which are based in the study area.

Community facilities include the Mossdale Elementary School, located at 455 Brookhurst Boulevard in Mossdale Village, approximately 0.15 miles west of the Build Alternative intersection of Golden Valley Parkway and Brookhurst Boulevard. Mossdale Elementary School is within the Manteca Unified School District.

Within the River Islands development, the NextGeneration STEAM Academy at 18001 Commercial Street is approximately 0.75 miles from the Build Alternative bridge location. The area west of the San Joaquin River is within the Banta Elementary School District. River Islands Technology Academy, a public charter school, is located approximately 0.9 miles northwest of the project area. A total of nine schools are proposed within the River Islands development.

Environmental Consequences

Build Alternative

There are no effects on regional population characteristics anticipated as a result of the proposed project. The proposed bridge would be the same number of travel lanes as the existing Manthey Bridge and would be located within 0.25 miles of the current location. Because the project would not remove housing, no displacement would occur. The project would not contribute to changes in the demographic characteristics of the region or study area.

The proposed project would require acquisition of portions of 8 privately owned properties, but would not displace residents, businesses, or community resources. In anticipation of substantial development on both sides of the river, the project would improve connections between these developing communities, which would improve community cohesion. The project would not result in any impacts related to division of an existing community.

Impacts on the regional economy are not anticipated. While the project would require acquisition of a parcel currently being used for a temporary River Islands Welcome Center, the effects to employment of this facility are not anticipated because the center is temporary and could be relocated within the River Islands development area. Therefore, it is anticipated that the business effects on total revenue on San Joaquin County or the City of Lathrop would be negligible.

While the proposed project would require partial acquisition of private properties, no existing retail is located at these areas, and measures described below would be implemented to address acquisitions and compensation to property owners. In addition to the River Islands Welcome Center, parcels to be acquired include one farm-associated storage building at Assessor's Parcel Number 241-020-63 and farmland with no habitable structures. Acquisitions and compensation to property owners would be consistent with the Federal Uniform Relocation Assistance and Real Properties Acquisition Policies Act, as amended, for the farm-associated storage building at Assessor's Parcel Number 241-020-63.

As the project construction activities would be at the new roadway and new bridge and would be away from existing community facilities, effects to community services, such as school bus routes are not anticipated.

Implementation of a Traffic Management Plan, as described in Avoidance, Minimization, and/or Mitigation Measures, below, would reduce temporary delays for drivers associated with lane closures where Golden Valley Parkway would tie into existing roadways. The Traffic Management Plan would also notify visitors to Mossdale County Park or Dell'Osso Family Farm of construction related to the removal of the existing bridge.

No-Build Alternative

Under the No-Build Alternative, no construction of the proposed project would take place, so there would be no effects on existing community character and cohesion.

Avoidance, Minimization, and/or Mitigation Measures

Acquisitions and compensation to property owners will be consistent with the Federal Uniform Relocation Assistance and Real Properties Acquisition Policies Act, as amended.

As part of construction, the project proponents will prepare and implement a Traffic Management Plan to avoid and minimize potential impacts. At a minimum, the Traffic Management Plan will detail the procedure for conducting outreach and notification to publicize planned lane closures and construction activities. Implementation of the Traffic Management Plan would ensure that access to community services and school bus routes are not impeded by construction activities. The Traffic Management Plan would reduce impacts of the project on temporary access and circulation caused by potential traffic delays during construction.

2.1.5 Relocations and Real Property Acquisition

Regulatory Setting

Caltrans' Relocation Assistance Program is based on the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and Title 49 Code of Federal Regulations Part 24. The purpose of the Relocation Assistance Program is to ensure that persons displaced as a result of a transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. Please see Appendix C for a summary of the Relocation Assistance Program.

All relocation services and benefits are administered without regard to race, color, national origin, persons with disabilities, religion, age, or sex. Please see Appendix B for a copy of the Caltrans' Title VI Policy Statement.

Affected Environment

This section was informed by the Community Impact Assessment completed in July 2017 for this project. Eleven parcels are located within the proposed project site. Currently, buildings are located in Assessor's Parcel Numbers 241-020-63 and 213-310-15, within the proposed project footprint.

Environmental Consequences

Build Alternative

The proposed project would require permanent acquisitions at agricultural and residential properties. The new roadway extending Golden Valley Parkway south of Sadler Oak is anticipated to require temporary construction easements and/or

permanent acquisition at 11 parcels; temporary construction easements would be required at 10 parcels, and permanent acquisition or easement would be required at 9 parcels (see Table 2.1.5-1).

Table 2.1.5-1. Anticipated Right-of-Way Acquisitions in the Study Area

Assessor's Parcel Number	Proposed Project Temporary Construction Easement/ Permanent Acquisition or Easement (acres)
191-190-15	0/0.04
241-020-61	0.27/0.00
241-020-08	0.09/0.03
241-020-63	0.53/3.84
241-020-68	1.90/1.68
241-020-67	0.22/0.12
241-020-69	0.85/0.48
213-310-06	0.11/0.33
213-310-15	3.23/1.17
213-300-05	0.20/0.00
213-300-06	0.09/0.33

All acquisitions would be conducted in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and the California Relocation Act.

No residence or business relocations would occur as a result of the project.

No-Build Alternative

Under the No-Build Alternative, no construction of the proposed project would take place and no new right-of-way would be acquired. Therefore, there would be no effect on residences or businesses, and no relocations or displacements would occur.

Avoidance, Minimization, and/or Mitigation Measures

Acquisitions and compensation to property owners will be consistent with the Federal Uniform Relocation Assistance and Real Properties Acquisition Policies Act, as amended.

2.1.6 Environmental Justice

Regulatory Setting

All projects involving a federal action (funding, permit, or land) must comply with Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, signed by President William J. Clinton on February 11, 1994. This Executive Order directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low-income is defined based on the Department of Health and Human Services poverty guidelines. For 2019, this was \$25,750 for a family of four.

All considerations under Title VI of the Civil Rights Act of 1964, and related statutes, have also been included in this project. Caltrans' commitment to upholding the mandates of Title VI is demonstrated by its Title VI Policy Statement, signed by the Director, which can be found in Appendix B of this document.

Affected Environment

This section was informed by the Community Impact Assessment completed in July 2017 for this project. As described above, the total study area population, as reported in the 2010 United States Census, was 844. The study area is composed of 17 census blocks, of which only six contained any population as of the 2010 United States Census. The census blocks and population are discussed in Section 2.1.4, *Community Character and Cohesion*, of this report. The study area as a whole appears to have a particularly high Asian population when compared to the county or the city, although the overall minority population (non-White population) is comparable to that of the city. Excluding Block 1018 in Census Tract 51.19, the study area population is almost entirely white—with 15 Whites and 1 Black/African American residing on the east side of the San Joaquin River and 5 Whites, 4 Asians, and 3 Hispanic/Latino residents on the west side of the river.

With respect to income, census data collected in the 2012 American Community Survey (United States Census Bureau 2014) at the tract level suggests that per capita income in the study area is slightly lower than for the rest of the county. Although data for smaller geographic units (such as the block groups that compose the study area) are preferred for identifying areas with low-income and poverty concentrations, the census tract is the smallest unit of geography for which 2010 income data have been released. Based on this data, Census Tract 51.19 had a low-income population (7.9 percent) that was slightly higher than that of the city (5.6 percent), and Census Tract 52.02 had a low-income population (4.3 percent) that was lower than that of the city. Both census tracts contained low-income populations that were substantially lower than that of the county (13.6 percent).

Environmental Consequences

Build Alternative

For adverse environmental justice effects to result from the project, two conditions need to exist. First, minority or low-income populations need to reside in parts of the study area that would be adversely affected by the project. Second, any adverse impacts would need to fall disproportionately on minority or low-income populations, rather than proportionately on all populations affected by the project. As described above, the project would be constructed in a particularly sparsely populated area, resulting in no displacements of residents and no possibility to disproportionately affect an environmental justice population.

The temporary construction impacts, as well as the benefits, of the project would accrue to all roadway users, including local residents. Implementation of the project would improve the roadway for all users of the transportation system, regardless of race, ethnicity, or income. Although substantial adverse impacts were not identified, minor impacts associated with construction-period delays, noise, and air quality would not be borne disproportionately by low-income or minority populations.

No-Build Alternative

Under the No-Build alternative, no construction of the proposed project would take place; as such, there would be no disproportionate impact on low-income or minority populations.

Avoidance, Minimization, and/or Mitigation Measures

Based on the above discussion and analysis, the Build Alternative will not cause disproportionately high and adverse effects on any minority or low-income populations in accordance with the provisions of Executive Order 12898. No avoidance, minimization, or mitigation measures are required related to environmental justice impacts.

2.1.7 Utilities and Emergency Services

Affected Environment

This section was informed by the Community Impact Assessment completed in July 2017 for this project.

In the study area, along existing Manthey Road, there are electrical (Pacific Gas and Electric Company) and telephone (Verizon of California) utility lines located on aboveground utility poles. Several utility boxes are also located southeast of the existing Manthey Road Bridge. An AT&T line is attached to the existing Manthey Road Bridge. Underground utilities include a gas line, sanitary sewer, water line, reclaimed water line, and AT&T fiber optic line.

The City of Lathrop Police Services, a division of the San Joaquin County Sheriff's Office, provides law enforcement services to the study area. A station from which officers and patrols are dispatched is located at 15597 Seventh Street,

approximately 2.9 miles northeast of the existing San Joaquin River/Mantney Road crossing. A new police station within River Islands was constructed in the summer of 2019 and will be operational when the proposed project would be under construction.

The Lathrop-Manteca Fire District provides fire protection services to the cities of Lathrop and Manteca and surrounding rural areas. The district covers an approximately 100-square-mile area, with five fire stations and six companies. The nearest fire station to the study area is located at 464 River Islands Parkway, approximately 1.8 miles north of the existing San Joaquin River/Mantney Road crossing.

The nearest full-service hospitals and emergency care facilities are located approximately 6 miles north (San Joaquin General Hospital), 6 miles east (Doctors Hospital of Manteca), and 8 miles west (Sutter Tracy Community Hospital) of the project.

Environmental Consequences

Build Alternative

Construction of the proposed project would result in few utility conflicts; however, modifications to nine manholes and eight utility valves may be required. Relocation of one Pacific Gas and Electric Company pole along Queirolo Road may also be required. The existing AT&T line on the existing bridge would need to be relocated or abandoned for removal, depending upon the utility owner's discretion. Utility work may result in temporary service disruptions. Coordination with the utilities will address temporary service disruptions, as well as interim utility service replacement, if feasible, to avoid long-term disruptions.

The planned lane closures are unlikely to delay response times during construction periods. Removal of the bridge would not affect response times, as the service areas for both emergency providers do not extend beyond the San Joaquin River. To ensure that emergency service access is not disrupted by construction, advance notice to emergency service providers would be included in the Traffic Management Plan.

No-Build Alternative

Under the No-Build alternative, no construction would take place and as such there would be no effect to utilities and emergency services.

Avoidance, Minimization, and/or Mitigation Measures

Preparation and implementation of a Traffic Management Plan discussed in Section 2.1.4 would further reduce potential impacts on emergency service providers.

2.1.8 Traffic and Transportation/Pedestrian and Bicycle Facilities

Regulatory Setting

Caltrans, as assigned by the Federal Highway Administration, directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of Federal-aid highway projects (see 23 Code of Federal Regulations 652). It further directs that the special needs of the elderly and the disabled must be considered in all Federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

In July 1999, the United States Department of Transportation issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally assisted programs is governed by the United States Department of Transportation regulations (49 Code of Federal Regulations 27) implementing Section 504 of the Rehabilitation Act (29 United States Code 794). The Federal Highway Administration has enacted regulations for the implementation of the 1990 Americans with Disabilities Act, including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the Americans with Disabilities Act requirements to federal-aid projects, including Transportation Enhancement Activities.

Affected Environment

This section was informed by the Traffic Operations Analysis Report, completed in 2014 for this project. Level of service D is the threshold for acceptable operation of intersections and roadways used in this analysis because Golden Valley Parkway is part of the San Joaquin Council of Governments 2012 Regional Congestion Management Plan.

The study area extends along Manthey Road from Stewart Road to the south and Brookhurst Boulevard to the north. The primary roads include Manthey Road, Golden Valley Parkway, Brookhurst Boulevard, Inland Passage Way, Sadler Oak, Queirolo Road, and Stewart Road. Manthey Road generally runs parallel to I-5, south of Sadler Oak, and residential properties are located on both sides of Manthey Road. Six intersections and three roadway segments were selected to be analyzed for the transportation and traffic study (see Table 2.1.8-1 and Table 2.1.8-2, respectively).

Table 2.1.8-1 displays the level of service under existing conditions for each existing study intersection during the morning and evening peak hours. The traffic analysis determined that all unsignalized study intersections operate at acceptable level of service A conditions for all movements during both morning and evening peak-hour conditions. Under existing morning and evening peak-hour conditions, the Manthey Road left-turn movements onto Stewart Road, Mossdale County Park Access and Brookhurst Boulevard result in minor delays as vehicles wait for gaps in traffic.

Table 2.1.8-1. Intersection Analysis – Existing Conditions

Intersection	Control	Morning Peak Hour Level of Service	Evening Peak Hour Level of Service
Northbound Left Turn Manthey Road / Stewart Road	All-Way Stop	A	A
Northbound Through Manthey Road / Stewart Road	All-Way Stop	A	A
Southbound Through Manthey Road / Stewart Road	All-Way Stop	A	A
Southbound Right Turn Manthey Road / Stewart Road	All-Way Stop	A	A
Eastbound Left Turn Manthey Road / Stewart Road	All-Way Stop	A	A
Eastbound Right Turn Manthey Road / Stewart Road	All-Way Stop	A	A
Northbound Left Turn Manthey Road / Mossdale County Park Access	Side-Street Stop	A	A
Northbound Through Manthey Road / Mossdale County Park Access	Side-Street Stop	A	A
Southbound Through Manthey Road / Mossdale County Park Access	Side-Street Stop	A	A
Southbound Left Turn Manthey Road / Mossdale County Park Access	Side-Street Stop	A	A
Eastbound Left Turn Manthey Road / Mossdale County Park Access	Side-Street Stop	A	A
Eastbound Right Turn Manthey Road / Mossdale County Park Access	Side-Street Stop	A	A
Northbound Left Turn Manthey Road / Brookhurst Boulevard	Side-Street Stop	A	A
Northbound Through Manthey Road / Brookhurst Boulevard	Side-Street Stop	A	A
Southbound Through Manthey Road / Brookhurst Boulevard	Side-Street Stop	A	A
Southbound Right Turn Manthey Road / Brookhurst Boulevard	Side-Street Stop	A	A
Eastbound Left Turn Manthey Road / Brookhurst Boulevard	Side-Street Stop	A	A
Eastbound Right Turn Manthey Road / Brookhurst Boulevard	Side-Street Stop	A	A

All three existing roadway segments operate at acceptable service levels (see Table 2.1.8-2).

Table 2.1.8-2. Roadway Segment Operations – Existing Conditions

Segment	Roadway Classification	Average Daily Traffic¹	Level of Service
Manthey Road – Between Brookhurst Boulevard and Mosssdale County Park Access	2 Lanes Undivided	1,050	C
Manthey Road – Between Mosssdale County Park Access and Stewart Road	2 Lanes Undivided	1,000	C
Manthey Road – Between Stewart Road and Dell'Osso Family Farm	2 Lanes Undivided	950	C

¹ Volumes represent both directions of travel and are rounded to the nearest 10 vehicles.

Although the City does not have a master bicycle trail plan, bicycle and pedestrian policies are in place per the General Plan. Currently, there are no formal bicycle facilities in the project area, but a separate pedestrian crossing is adjacent to the existing Manthey Road Bridge. No pedestrians or bicyclists were observed in the study area section of Manthey Road during weekday morning or evening peak-hour conditions. However, as development occurs in the River Islands, the number of pedestrians and bicyclists is projected to increase. Multi-use trails for bicycles and pedestrians are anticipated along Golden Valley Parkway.

No bus lines run along the project roadways.

Without the project, in both construction year 2022 and design year 2040, existing intersections would continue to operate at acceptable levels of service, seen in Table 2.1.8-3 and 2.1.8-4, respectively.

Environmental Consequences

Build Alternative

Under the Build alternative, in construction year 2022, all study intersections would operate at acceptable levels of service during both morning and evening peak hours (see Table 2.1.8-3). Compared to the No-Build alternative in the same year, level of service would be improved all three of the existing intersections. The remaining intersections would be constructed as part of the Build Alternative.

Table 2.1.8-3. Intersection Analysis – Construction Year 2022

Intersection	Control¹	No-Build Alternative Morning Peak Hours Level of Service	No-Build Alternative Evening Peak Hour Level of Service	Build Alternative Morning Peak Hours Level of Service	Build Alternative Evening Peak Hour Level of Service
Northbound Left Turn Manthey Road / Stewart Road	Uncontrolled	A	A	A	A
Northbound Through Manthey Road / Stewart Road	Uncontrolled	A	A	–	–
Southbound Through Manthey Road / Stewart Road	Uncontrolled	A	A	–	–
Southbound Right Turn Manthey Road / Stewart Road	Uncontrolled	A	A	A	A
Eastbound Left Turn Manthey Road / Stewart Road	Uncontrolled	A	A	–	–
Eastbound Right Turn Manthey Road / Stewart Road	Uncontrolled	A	A	–	–
Northbound Left Turn Manthey Road / Mossdale County Park Access	Uncontrolled	A	A	–	–
Northbound Through Manthey Road / Mossdale County Park Access	Uncontrolled	A	A	–	–
Southbound Through Manthey Road / Mossdale County Park Access	Uncontrolled	A	A	–	–
Southbound Right Turn Manthey Road / Mossdale County Park Access	Uncontrolled	A	A	A	A
Eastbound Left Turn Manthey Road / Mossdale County Park Access	Uncontrolled	A	A	A	A
Eastbound Right Turn Manthey Road / Mossdale County Park Access	Uncontrolled	A	A	–	–
Northbound Left Turn Manthey Road / Brookhurst Boulevard	Side-Street Stop	A	A	A	A
Northbound Through Manthey Road / Brookhurst Boulevard	Side-Street Stop	A	A	A	A
Southbound Through Manthey Road / Brookhurst Boulevard	Side-Street Stop	A	A	A	A
Southbound Right Turn Manthey Road / Brookhurst Boulevard	Side-Street Stop	A	A	A	A
Eastbound Left Turn Manthey Road / Brookhurst Boulevard	Side-Street Stop	A	A	A	A
Eastbound Right Turn Manthey Road / Brookhurst Boulevard	Side-Street Stop	A	A	A	A
Golden Valley Parkway / Stewart Road	Signalized	–	–	C	C
Golden Valley Parkway / Sadler Oak Drive	Signalized	–	–	B	B
Golden Valley Parkway / Brookhurst Boulevard	Signalized	–	–	B	B

¹ Controls differ between existing and build conditions. Controls shown are for build conditions.

In construction year 2022, traffic volumes are projected to decrease on Manthey Road between Brookhurst Boulevard and Mossdale County Park, increase on Manthey Road between Stewart Road and Dell'Osso Family Farm, and increase on Stewart Road, when compared to existing conditions with the construction of the this project (Table 2.1.8-4). Even with these projected increases and decreases, all studied roadway segments are projected to operate at acceptable service levels.

Table 2.1.8-4. Roadway Segment Operations – Construction Year 2022

Segment	Roadway Classification	Average Daily Traffic¹	Level of Service
Manthey Road – Between Brookhurst Boulevard and Mossdale County Park Access	2 Lanes Undivided	2,000	C
Manthey Road – Between Stewart Road and Dell'Osso Family Farm	2 Lanes Undivided	2,400	C
Stewart Road – Between Manthey Road and Union Pacific Railroad Crossing	2 Lanes Undivided	2,400	C
Golden Valley Parkway (New Roadway) – Between Stewart Road and Sadler Oaks Drive	2 Lanes Undivided	2,760	C
Golden Valley Parkway (New Roadway) – Between Sadler Oaks Road and Brookhurst Boulevard	2 Lanes Undivided	2,600	C

¹ Volumes represent both directions of travel and are rounded to the nearest 10 vehicles.

Under the Build Alternative, in design year 2040, all study intersections would continue to operate at acceptable levels of service during both morning and evening peak hours (see Table 2.1.8-5). Compared with the No-Build Alternative in the same year, level of service would remain the same at all three of the existing intersections and would have the additional three intersections constructed for the Build Alternative.

Table 2.1.8-5. Intersection Analysis – Design Year 2040

Intersection	Control¹	No-Build Alternative Morning Peak Hours Level of Service	No-Build Alternative Evening Peak Hour Level of Service	Build Alternative Morning Peak Hours Level of Service	Build Alternative Evening Peak Hour Level of Service
Northbound Left Turn Manthey Road / Stewart Road	Uncontrolled	A	A	A	A
Northbound Through Manthey Road / Stewart Road	Uncontrolled	A	A	A	A
Southbound Through Manthey Road / Stewart Road	Uncontrolled	A	A	–	–
Southbound Right Turn Manthey Road / Stewart Road	Uncontrolled	A	A	–	–
Eastbound Left Turn Manthey Road / Stewart Road	Uncontrolled	A	A	–	–
Eastbound Right Turn Manthey Road / Stewart Road	Uncontrolled	A	A	–	–
Northbound Left Turn Manthey Road / Mossdale County Park Access	Uncontrolled	A	A	–	–
Northbound Through Manthey Road / Mossdale County Park Access	Uncontrolled	A	A	–	–
Southbound Through Manthey Road / Mossdale County Park Access	Uncontrolled	A	A	–	–
Southbound Right Turn Manthey Road / Mossdale County Park Access	Uncontrolled	A	A	A	A
Eastbound Left Turn Manthey Road / Mossdale County Park Access	Uncontrolled	A	A	A	A
Eastbound Right Turn Manthey Road / Mossdale County Park Access	Uncontrolled	A	A	–	–
Northbound Left Turn Manthey Road / Brookhurst Boulevard	Side-Street Stop	A	A	A	A
Northbound Through Manthey Road / Brookhurst Boulevard	Side-Street Stop	A	A	A	A
Southbound Through Manthey Road / Brookhurst Boulevard	Side-Street Stop	A	A	A	A
Southbound Right Turn Manthey Road / Brookhurst Boulevard	Side-Street Stop	A	A	A	A
Eastbound Left Turn Manthey Road / Brookhurst Boulevard	Side-Street Stop	A	A	A	A
Eastbound Right Turn Manthey Road / Brookhurst Boulevard	Side-Street Stop	A	A	A	A
Golden Valley Parkway / Stewart Road	Signalized	–	–	C	C
Golden Valley Parkway / Sadler Oak Drive	Signalized	–	–	B	B
Golden Valley Parkway / Brookhurst Boulevard	Signalized	–	–	B	C

¹ Controls differ between existing and build conditions. Controls shown are for build conditions.

In 2040, with the construction of this project, traffic volumes are projected to decrease on one and increase on four roadway segments when compared to existing conditions (Table 2.1.8-6). Even with these projected volume decreases and increases, all five roadway segments are projected to continue to operate at acceptable service levels as two-lane undivided roadways.

Table 2.1.8-6. Roadway Segment Operations – Design Year 2040

Segment	Roadway Classification	Average Daily Traffic ¹	Level of Service
Manthey Road - Between Brookhurst Boulevard and Mossdale County Park Access	2 Lanes Undivided	200	C
Manthey Road - Between Stewart Road and Dell'Oso Family Farm	2 Lanes Undivided	1,600	C
Stewart Road – Between Manthey Road and Union Pacific Railroad Crossing	2 Lanes Undivided	1,600	C
Golden Valley Parkway (New Roadway) – Between Stewart Road and Sadler Oaks Drive	2 Lanes Undivided	2,200	D
Golden Valley Parkway (New Roadway) – Between Sadler Oaks Road and Brookhurst Boulevard	2 Lanes Undivided	11,800	D

¹ Volumes represent both directions of travel and are rounded to the nearest 10 vehicles.

For traffic on I-5 and State Route 120, there are no discernable differences in levels of service between the Build Alternative and No-Build Alternative for construction year 2022 or design year 2040.

The Build Alternative would provide the north-south arterial (Golden Valley Parkway) that would cross the San Joaquin River, consistent with the description in the City General Plan. The Build Alternative would end at Stewart Road. Access to homes located along Queirolo Road would continue via Queirolo Road from Manthey Road. The existing parking area on the River Islands side of the river was associated with the former Welcome Center. The parking area would be removed as it is no longer necessary.

The Build Alternative would include sidewalks and bike lanes along the entire alignment from Brookhurst Boulevard to Stewart Road. The existing pedestrian bridge adjacent to the existing Manthey Road Bridge would remain. As a result, the project would add non-motorized crossings over the San Joaquin River at the new bridge.

The proposed project would have minimal temporary construction impacts on traffic because it is along a new alignment. Although traffic along the ends of the alignment at Brookhurst Boulevard and Stewart Road may encounter short-term traffic control measures, implementation of avoidance, minimization, and/or mitigation measures would minimize these impacts.

No-Build Alternative

The effects under the No-Build Alternative are shown in Tables 2.1.8-3 and 2.1.8-5. Under the No-Build Alternative, the traffic patterns would not change, and level of service would remain the same. No improvements to bicycle or pedestrian facilities would occur. Construction-related traffic effects would not occur.

Avoidance, Minimization, and/or Mitigation Measures

Preparation and implementation of a Traffic Management Plan discussed in Section 2.1.4 would further reduce potential impacts of the project on temporary access and circulation caused by potential traffic delays during construction.

2.1.9 Visual/Aesthetics

Regulatory Setting

NEPA, as amended, establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* and culturally pleasing surroundings (42 United States Code 4331[b][2]). To further emphasize this point, the Federal Highway Administration, in its implementation of NEPA (23 United States Code 109[h]), directs that final decisions on projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

CEQA establishes that it is the policy of the state to take all action necessary to provide the people of the state “with...enjoyment of *aesthetic*, natural, scenic and historic environmental qualities” (California Public Resources Code Section 21001[b]).

Affected Environment

This section was informed by the Visual Impact Assessment completed in March 2017 for this project.

Visual Character

The land use within the project corridor is primarily suburban residential development and agricultural but also includes an area of several rural residences located along Manthey and Queirolo Roads and park land uses. The project corridor is defined as the area of land that is visible from, adjacent to, and outside the highway right-of-way, and is determined by topography, vegetation, and viewing distance. This correlates to the affected viewshed of the project. There are no federally, state, or locally designated scenic routes in the project area.

The project corridor crosses the San Joaquin River, which generally runs north-south through the project area and is bordered on either side by levees. The levees provide an elevated vantage that enables views out and over the project corridor, but these views are not considered to be vista views because of the presence of intervening development, vegetation, and infrastructure that prevent expansive, uninterrupted views. Riparian vegetation is not very dense in the areas affected by

the proposed project; however, clusters of mature trees and shrubs are located along the river in the project area.

The corridor passes near I-5 and State Route 120 roadways and the Union Pacific Railroad corridors. The tall towers of the Union Pacific Railroad Bridge make the structure a focal point for recreationists on the levees and river, nearby residents, and travelers on nearby roadways. Gaps in riparian vegetation allow views of the river, which are primarily seen by recreationists using the levees and river.

The pedestrian bridge crossing that runs parallel to the existing Manthey Road Bridge provides views of Manthey Road and the bridge, the nearby I-5 and State Route 120 bridges, the river, Mossdale County Park, the Union Pacific Railroad Bridge, and mature vegetation in the project corridor. Similar views are provided from the Manthey Road Bridge.

The majority of nighttime lighting in the project area comes from street lighting and interior and exterior residential lighting associated with Mossdale Village and River Islands and from vehicles on local roadways. A small amount of nighttime lighting is associated with safety lighting at Mossdale County Park. Lighting is not located along the existing Manthey Road Bridge.

Viewers

Those who have views to the bridge include recreationists in the river and parks, residents in the area, and highway and roadway users. Most highway and roadway users would be in contact with the project area for short periods and in passing and therefore have a lower viewer response. Recreationists, who see the project area for moderate periods of time and in passing, are likely to view changes to the visual environment with higher sensitivity because views are often enjoyed while recreating.

The primary viewers that would be affected by the proposed project with extended viewing times would be future residents within the Mossdale Village and River Islands developments. However, these future residents would anticipate the new bridge and Golden Valley Parkway extension alignment as they are illustrated in the community master plans. Because they would be aware of the proposed plans and locations of the homes they are purchasing in relation to the project, they would not be substantially affected by the project and they would have lower visual sensitivity.

When residents' lower visual sensitivity is combined with recreationists' higher visual sensitivity, the neighbors viewer group response is considered to be moderate-low.

Environmental Consequences

Build Alternative

Short-Term Visual Changes

Construction activities would temporarily introduce heavy equipment and associated vehicles, including backhoes, compactors, tractors, cranes, and trucks into the

viewshed of all viewer groups, which would create temporary visual impacts of and from the project site during the 18-month construction period. Construction would be visible to roadway neighbors and roadway users traveling in both directions on I-5, State Route 120, and Manthey Road. Due to the temporary nature of construction, transient nature of viewers passing by the project site, and familiarity of viewers with heavy equipment in the project area—used for working agricultural land and developing River Islands—this impact is not considered substantial. Measures described in *Visual/Aesthetics, Avoidance, Minimization, and/or Mitigation Measures*, below, would ensure the construction activities would be screened from potential future residents in the River Islands and Mossdale Village.

The proposed project would affect a small amount of riparian vegetation and agricultural land. The riparian areas would be restored once construction is complete, exposed slopes would be re-seeded for erosion control under standard construction practices, and ruderal vegetation would colonize these areas within a growing season. Visual changes resulting from temporary changes to vegetation in these areas would be low because surrounding riparian vegetation would remain untouched.

Construction of the bridge would require in-water (i.e., underwater) work. Boat traffic is likely to be higher in June, July, and August and lower in spring, fall, and winter. All in-water work would occur from an installed trestle that would allow boat traffic to pass. This would not create a substantial visual change because only a small segment of the river would be affected, access would still be allowed, and boats would pass by the construction site fairly quickly. Therefore, the temporary visual impacts are not considered substantial due to the temporary nature of construction, transient nature of water-based recreationists passing by the project site, and familiarity of viewers with heavy agricultural and construction equipment in the project area.

Additionally, the temporary River Islands sales office would need to be removed to accommodate construction of the bridge. Because the sales office is a temporary building planned for eventual removal by the River Islands development, its removal for project construction would not result in substantial changes in the visual environment.

The pedestrian bridge would be closed for a short period during demolition of the existing bridge to ensure the safety of pedestrians, which would, during construction, prevent recreational visual access that is currently provided from the bridge.

No nighttime construction activities would occur; therefore, no impacts would be related to nighttime light or glare.

Overall, construction would result in a visual resource change to the project corridor that is low, and the resulting visual impacts would be low.

Long-Term Visual Changes

Removal of the existing Manthey Road Bridge and construction of a new bridge downstream of the existing bridge would not substantially alter the visual character of the area because other truss-work structures would remain in the area. The new bridge would be in keeping with the existing visual environment because it would be made with similar materials and be of similar width and profile as the existing and nearby bridges. The new bridge would not have a truss structure and would more closely resemble the I-5 bridge.

The agricultural lands east of the river are nearly 18 feet lower than the lands being developed within River Islands, west of the river. To accommodate this grade change and levee and river clearance, the proposed bridge approaches would require fill placement to gradually ramp the roadway up and over the levees in order to bridge the river. A small amount of fill would be needed on the west side of the river; however, a greater amount of fill would be needed on the east side of the river to accommodate this transition. This would create a new bermed landform that would appear visually similar to existing levee access roads, which are already common in the project vicinity along Inland Passage Way and would not substantially alter the overall existing visual setting.

Much of the Golden Valley Parkway extension alignment would be obscured from view by the berms of the existing storm water detention basins located between Brookhurst Boulevard and Sadler Oak Drive. Therefore, the primary viewers that would be affected by the proposed parkway extension would be viewers traveling on or close to the proposed extension, such as roadway users in Mossdale Village, recreationists using the eastern levee, and existing and future residents of Mossdale Village. Additionally, the Golden Valley Parkway extension may include roadway lighting, which could employ light emitting diode technologies that could affect sensitive receptors if not properly designed, resulting in a substantial source of nighttime light and glare that could adversely affect nighttime views in the area. Implementation of avoidance, minimization, and mitigation measures, described below, would ensure that landscaping is included within the bridge approach and parkway extension design in order to improve the visual appearance of the bermed approaches and the roadway corridor. Measures described in *Avoidance, Minimization, and/or Mitigation Measures*, below, would aid in reducing lighting impacts by filtering light and ensure that impacts from new sources of light are minimized. Therefore, overall visual changes associated with the Build Alternative would be moderate-low.

No-Build Alternative

Under the No-Build Alternative, no construction would take place, and there would be no changes to the existing visual character. Therefore, there would be no effect on visual resources.

Avoidance, Minimization, and/or Mitigation Measures

Use Native Grass and Wildflower Species in Erosion Control Grassland Seed Mix

The City will require construction contractors to incorporate native grass and wildflower seed into standard seed mixes for erosion control measures that will be applied to all exposed slopes. Wildflowers will provide seasonal interest to areas where trees and shrubs are removed and grasslands are disturbed. Only wildflower and grass species that are native will be added into the seed mix, and under no circumstances will any invasive grass or wildflower plant species be used as any component in any erosion control measures. Species will be chosen that are indigenous to the area and for their appropriateness to the surrounding habitat. For example, upland grass and wildflower species will be chosen for drier, upland areas, and wetter species will be chosen for areas that will receive more moisture. If not appropriate to the surrounding habitat, wildflowers should not be included in the seed mix.

Install Visual Barriers between Construction Staging and Storage Areas and Sensitive Receptors

Sensitive residential receptors may be located close to staging and storage areas when the project is constructed. Therefore, the City will require the contractor to install visual barriers to obstruct undesirable views of construction staging and storage areas within 500 feet of sensitive residential receptors not surrounded by sound walls or privacy fencing. The visual barrier may be chain link fencing with privacy slats or fencing with windscreen material, wood, or other similar barrier. The visual barrier will be a minimum of 6 feet high to help to maintain the privacy of residents and block ground-level views toward construction activities. Although this visual barrier would introduce a visual intrusion, it would greatly reduce the visual effects associated with visible construction activities, and screening construction activities and protecting privacy are deemed desirable.

Implement Landscaping and Visual Buffers

Landscaping along bermed bridge approaches and Golden Valley Parkway will improve the visual quality of the roadway corridor by improving corridor aesthetics and helping to reduce the apparent scale of the berms and width of the roadway corridor for the Build Alternative. This landscaping also will serve as a buffer and screen against nuisance lighting resulting from oncoming vehicle headlights and roadway lighting and help to prevent or greatly reduce nuisance lighting from affecting nearby sensitive viewers. These plans will be designed to be consistent with the Landscape Architecture Standards for the Golden Valley Parkway identified within the Urban Design Concept Plans. The following elements will be incorporated into the project landscaping plan.

- Plant species that are native and indigenous to the project area and California can be used to create attractive spaces, high in aesthetic quality, that are not only drought-tolerant, but also attract more wildlife than traditional landscape plant palettes. Use of native species promotes a visual character of California that is being lost through development and reliance on nonnative ornamental

plant species. The Golden Valley Parkway Landscape Palette, identified in the Urban Design Concept Plans, will be evaluated and nonnative ornamental plant species will be replaced with drought-tolerant native plant species where such a replacement will not compromise design intent or landscape aesthetics or increase landscape maintenance.

- Special attention will be paid to plant choices near residences to ensure that species chosen are of an appropriate height and rely on evergreen species to provide year-round light screening from nuisance light.
- Under no circumstances will any invasive plant species be used at any location.
- Landscaping will be installed in a manner that accommodates the eventual four-lane arterial. Therefore, only smaller shrubs, grasses, vines, and groundcovers will be planted. This will prevent the need to cut down semi-mature to mature trees and larger shrubs once the parkway is expanded from two to four lanes. In addition, this will ensure that trees and larger shrubs are planted along both sides of the parkway at the same time, creating a symmetrical-looking parkway corridor and preventing one side of the parkway from having mature trees and shrubs while the other side does not.
- Design of the landscaping plan will try to maximize the use of planting zones that are water efficient and use drought-resistant plants. The design also may incorporate aesthetic features, such as cobbling swales or shallow detention areas, which can reduce or eliminate the need for irrigation in certain areas.
- If an irrigation system is required, an irrigation and maintenance program will be implemented during the plant establishment period and carried on, as needed, to ensure plant survival. Areas that are irrigated will use a smart watering system that evaluates the existing site conditions and plant material against weather conditions to avoid overwatering of such areas. To avoid undue water flows, the irrigation system will be managed in such a manner that any broken spray heads, pipes, or other components are fixed within 1–2 days, or the zone or system will be shut down until it can be repaired.

Apply Aesthetic Design and Minimum Lighting Standards for Any New Lighting

The City's municipal code promotes the use of street trees to reduce glare (Section 12.16.010). In addition, the street lighting standards of the Urban Design Concept Plans dictate that shielding devices be used to prevent light trespass into adjacent residential units and that the spacing and brightness of lights shall meet City, Pacific Gas and Electric Company, and State of California standards for illumination and safety. In addition to these measures, all lighting is to cause minimum impact on the surrounding environment and will use downcast, cut-off type fixtures that are shielded and direct the light only toward surfaces requiring illumination. Lights must be installed at the lowest allowable height and cast low-angle illumination while minimizing incidental light spill onto adjacent properties or open spaces, including the river, or backscatter into the nighttime sky. Lights will provide warmer color temperatures (i.e., no greater than 3500 Kelvin), with the minimum lumens feasible for security and safety to reduce the potential for creating harsh, nuisance-lighting

conditions. Light fixtures will have non-glare finishes that will not cause reflective daytime glare. Design measures used to reduce light pollution will incorporate the technologies available at the time of project design to allow for the highest potential reduction in light pollution.

2.1.10 Cultural Resources

Regulatory Setting

The term “cultural resources,” as used in this document, refers to the “built environment” (e.g., structures, bridges, railroads, water conveyance systems, etc.), places of traditional or cultural importance, and archaeological sites (both prehistoric and historic), regardless of significance. Under federal and state laws, cultural resources that meet certain criteria of significance are referred to by various terms including “historic properties,” “historic sites,” “historical resources,” and “tribal cultural resources.” Laws and regulations dealing with cultural resources include:

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

Cultural Resources that have not been previously evaluated for inclusion in the National Register are evaluated using criteria for evaluation listed in 36 CFR 60.4. Cultural Resources can be determined eligible for inclusion in the National Register if they possess integrity, the capacity to convey their significant historic associations, and meet one or more of four criteria listed in Title 36, CFR 60.4:

- (a) are associated with events that have made a significant contribution to the broad patterns of our history; or
- (b) are associated with the lives or persons significant in our past; or

(c) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

(d) have yielded, or may be likely to yield, information important in prehistory and history.

Furthermore, eligibility is also determined by the resource's significance in history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association.

Cultural resources are typically evaluated for inclusion in the National Register if they are at least 50 years old, or if the resources have achieved significance within the past 50 years. If eligible resources are identified during the course of proposed undertakings, federal agencies are responsible to take reasonable measures to avoid or minimize adverse effects, and to afford the Advisory Council on Historic Preservation, consulting parties, and the public an opportunity to comment on potential effects to historic properties.

Historic properties may also be covered under Section 4(f) of the United States Department of Transportation Act, which regulates the "use" of land from historic properties (in Section 4(f) terminology—historic sites).

CEQA requires the consideration of cultural resources that are historical resources and tribal cultural resources, as well as "unique" archaeological resources. California Public Resources Code Section 5024.1 established the California Register of Historical Resources and outlined the necessary criteria for a cultural resource to be considered eligible for listing in the California Register of Historical Resources and, therefore, a historical resource. Historical resources are defined in Public Resources Code Section 5020.1(j). In 2014, Assembly Bill 52 added the term "tribal cultural resources" to CEQA, and Assembly Bill 52 is commonly referenced instead of CEQA when discussing the process to identify tribal cultural resources (as well as identifying measures to avoid, preserve, or mitigate effects to them). Defined in Public Resources Code Section 21074(a), a tribal cultural resource is a California Register of Historical Resources or local register eligible site, feature, place, cultural landscape, or object which has a cultural value to a California Native American tribe. Tribal cultural resources must also meet the definition of a historical resource. Unique archaeological resources are referenced in Public Resources Code Section 21083.2.

Affected Environment

Information presented in this section is taken from the Historic Property Survey Report and associated Historic Resources Evaluation Report, Archaeological Survey Report, and Extended Phase I Investigation conducted for this project. The Archaeological Survey Report was approved in August 2017; the Extended Phase I

Investigation was approved in May 2019, and the Historic Resources Evaluation Report was approved in June 2019. A Post Review Discovery and Monitoring Plan is being prepared for California State Historic Preservation Officer review and concurrence. It is anticipated that a Finding on No Adverse Effect will be prepared for this project.

Area of Potential Effects

The Area of Potential Effects (APE) for the project consists of the horizontal and vertical maximum potential extents of direct and indirect impacts that could result from the project. The APE extends to encompass parcels that may be affected by noise, vibration, or visual impacts as a result of project implementation. When built-environment resources This area is sometimes called the architectural APE. Within the APE is the area of direct impact (ADI) which includes the project footprint, construction areas, easements, and staging areas.

The vertical APE for the project ranges from minimal grading and trenching for utilities and road construction to excavation of up to 10 feet for abutment and pier foundations. Piles would be driven to depths of up to 125 feet but would not be excavated.

The final APE was approved on May 18, 2017, by the City of Lathrop Engineer, Caltrans District 10, Professionally Qualified Staff Principal Investigator Prehistoric Archaeology, and Caltrans District 10 Local Assistance Project Engineer.

Methods

Investigations for the cultural resources located in the project APE were conducted between 2014 and 2017 and included a records search, Native American consultation, outreach to local historical societies, archaeological and architectural field surveys, extended phase I subsurface archaeological investigations, and additional archival research.

Archival and Background Research

An initial record search was conducted in 2014 with an update in 2016 to identify any known cultural resources and cultural resources studies within the APE and a 0.5-mile study radius of the APE. The searches were conducted by staff at the Central California Information Center at California State University, Stanislaus on March 28, 2014, and August 25, 2016. According to the record search results, 54 previous cultural resource studies have been conducted within the APE and the 0.5-mile study radius. As a result of these studies, 30 cultural resources were recorded within the APE and the 0.5-mile study radius. Of those 30 previously recorded resources, 3 archaeological sites and 10 built environment resources were identified in the APE.

Native American and Other Interested Parties Consultation

Native American coordination efforts for Section 106 were originally conducted in 2014 and later updated in 2016. Below is a description of all Section 106 Native American coordination efforts to date.

On June 9, 2014, a Sacred Lands File search and Native American consultant list were requested from the Native American Heritage Commission. On June 20, 2014, the Native American Heritage Commission responded that their search of sacred land files failed to indicate the presence of Native American resources in the immediate area of the project and provided a list of Native American individuals and organizations to contact for additional information. Native American individuals and entities identified by the Native American Heritage Commission were sent letters on September 4, 2014. Letters were sent to members of the Southern Sierra Miwuk Nation: Jay Johnson, Les James, Lois Martin, and Anthony Brochini; the Wilton Rancheria: Andrew Franklin and Leland Daniels; the Lone Band of Miwok Indians: Yvonne Miller, Anthony Burris, and Randy Yonemura; the Calaveras Band of Miwok Indians: Gloria Grimes, Debra Grimes, and Adam Lewis; the Buena Vista Rancheria Me-Wuk Indians: Rhonda Morningstar-Pope and Doctor Roselynn Lwenya; the Nototomne/Northern Valley Yokuts Tribe: Katherine Erolinda Perez; and the California Valley Miwok Tribe: Silvia Burley.

One response to the 2014 Section 106 coordination letters was received. On September 13, 2014, Silvia Burley of the California Valley Miwok Tribe responded with a letter stating that she had no problem with work continuing as long as the tribe was notified of the existence of any human remains and/or artifacts during construction.

On August 13, 2016, Section 106 coordination with the Native American Heritage Commission was reinitiated and a search of the Sacred Lands Files and a list of Native American contacts for the area were requested. The Native American Heritage Commission responded on September 7, 2016 in a letter stating that no Sacred Lands were identified within the project. The Native American Heritage Commission also provided a list of four individuals: Katherine Erolinda Perez of the Northern Valley Yokuts Tribe, Raymond Hitchcock of the Wilton Rancheria, Crystal Martinez-Alire of the Lone Band of Miwok Indians, and Rhonda Morningstar-Pope of Buena Vista Rancheria. Letters inviting these individuals to consult under Section 106 were mailed on September 26, 2016 and follow-up phone calls were made on October 12 and October 14, 2016.

Two responses were received as a result of the Section 106 letters and follow-up phone calls. Katherine Erolinda Perez representing the Northern Valley Yokut Tribe responded in an e-mail on October 5, 2016 stating that she had already been in contact with Caltrans, and that there were sensitive resources in the area. She recommended that a qualified archaeologist and the Northern Valley Yokuts Tribe be present and involved during any ground disturbance.

Randy Yonemura, representing the Lone Band of Miwok Indians, responded on October 14, 2016, requesting an electronic copy of the September 26, 2016 letter, detailed aerial and topographic maps showing the project area, a list of the regulatory agencies for the project, and results of all biological and cultural studies for the project. Mr. Yonemura no longer represents the tribe and no further response has been received to date.

Outreach letters were mailed to the Haggin Museum, the Jedediah Smith Society, the Manteca Historical Society & Museum, the San Joaquin County Historical Society and Museum, and the Stockton Corral of Westerners on September 19, 2016 with follow-up contact attempts in March 2017. Additional letters were sent to the National Lincoln Highway Association and to the Lincoln Highway Association's California Chapter on August 23, 2018. Follow-up contact attempts to each of the interested parties were made in August and September 2018, and January 2019. As a result of the letters and follow-up attempts, responses were received from The Haggin Museum and the Lincoln Highway Association. The Haggin Museum stated that they had no pertinent information or concerns and the National Lincoln Highway Association provided historical source materials and information.

Field Methods

An intensive pedestrian archaeological survey of the ADI was conducted by Kim Tremaine on August 20, 2016. The survey was conducted according to the guidelines established in Caltrans' *Standard Environmental Reference, Volume 2 – Cultural Resources, Chapter 5, Prehistoric Archaeological Resources Identification, Evaluation and Treatment*, revised January 2, 2015, and *Chapter 6, Historical Archaeological Resources Evaluation and Treatment*, revised January 2, 2015. Where possible, transects spaced no more than 16 feet (5 meters) apart were walked to ensure maximum ground coverage in a timely manner. Areas that were paved or landscaped were not examined. The area west of the San Joaquin River was highly landscaped and developed. East of the river, ground visibility was mixed, being obscured in some areas by road pavement, concrete sidewalks, and modern landscaping at the northernmost end, and ranging from 20 to 40 percent visibility throughout most of the Golden Valley Parkway corridor between Brookhurst and Sadler Oak. In contrast, ground visibility between Sadler Oak and the San Joaquin River levee was excellent, with very little vegetation.

Built-environment cultural resources were surveyed and recorded in the APE on March 19, 2014, September 12, 2016, and July 24, 2017. The survey was conducted according to the guidelines established in Caltrans' *Standard Environmental Reference, Volume 2 – Cultural Resources, Chapter 7, Built Environment Resources Evaluation and Treatment*, revised July 10, 2015. David Lemon conducted the survey. Mr. Lemon meets the qualifications of an Architectural Historian per Attachment 1 of the Programmatic Agreement. The survey effort included formal recordation of built-environment cultural resources in the architectural APE with digital photographs and handwritten notes.

Archaeological Extended Phase 1 Testing

Because of the subsurface archaeological sensitivity of the area, an Extended Phase 1 Investigation was conducted to determine presence/absence of cultural materials in the areas of greater archaeological sensitivity. The fieldwork began with a geophysical electromagnetic survey over the portions of the ADI that were deemed sensitive. The goal of this effort was to detect indications of buried/obscured

landscape features (e.g., meanderings of stream channels and sand mounds) that could be used to determine the best locations for excavations.

Following the geophysical survey, subsurface testing was conducted throughout the areas deemed sensitive. The testing consisted of excavating 15 trenches and three bore pits. The Extended Phase 1 investigation concluded that no intact archaeological deposits were located within the ADI.

Cultural Resources Identified

No archeological resources that meet the criteria for historic properties were identified within the ADI; however, several areas within the ADI were identified as highly sensitive for buried resources.

Three built-environment resources within the APE meet eligibility requirements for listing in federal or state registers: the State Route 120/Interstate-5 connector bridge over the San Joaquin River (Caltrans Bridge Number 290016F), the Southern Pacific Railroad Bridge (California State Landmark Number 780-07), and the grouping of four grain silos west of the river. The other built environment resources within the project are recommended not eligible for listing in state or federal registers. The State Historic Preservation Officer concurred with the eligibility recommendations on December 19, 2019 (see Appendix E).

The State Route 120/Interstate-5 Connector Bridge located just south of the Manthey Road bridges was built in 1949 (Caltrans State Highway Bridge No. 290016F) and appears in the Caltrans “Structure Maintenance & Investigations, Historical Significance – Local Agency Bridges” inventory and is considered a Category 2 bridge—eligible for listing in the NRHP under Criterion C at the state level of significance because it embodies distinctive characteristics of its type, period, and method of construction. The bascule bridge is an important example of transitional post- World War II bridge construction and includes innovative design features for its period of significance (1949). The structure is also eligible for listing in the CRHR under Criterion 3.

Four red-brick grain silos on Assessor’s Parcel Number 213-290-23 located west of the San Joaquin River were built in 1918 (the resource’s period of significance) and found eligible for listing in the NRHP in 2009 under Criterion C at the local level of significance because of their type, period and method of construction. The silos are all that remains of a dairy operation and represent a rare example of late nineteenth century silo construction. The grain silos are also eligible for listing in the CRHR under Criterion 3.

The Southern Pacific Railroad Bridge (1942) located north (downriver) of the Manthey Road Bridge is a California Historical Landmark (number 780-07). California Historical Landmarks numbered after 770 are considered resources for the purposes of CEQA per California Public Resources Code (PRC) § 5024.1(d) of the CEQA Guidelines. The bridge is a vertical lift structure that carries the railroad over the San Joaquin River. It is a replacement bridge built in 1942. The bridge and

associated railroad are eligible for the NRHP under Criterion A at the national level of significance because, as the last bridge connection on the transcontinental railroad, it marks the completion of a major engineering and construction achievement. At a local level, the completion led to a substantial period of economic and industrial development in Lathrop and the San Joaquin Valley. The period of significance is 1869 to 1945.

Environmental Consequences

Build Alternative

Three cultural resources within the project APE are eligible for listing in the National Register of Historic Places or the California Register of Historical Resources: the State Route 120/I-5 connector bridge over the San Joaquin River (Caltrans Bridge Number 290016F), the Southern Pacific Railroad Bridge (California State Landmark Number 780-07), and the grain silos west of the river. The proposed project would not result in adverse effects on any of these resources, either directly or indirectly.

The State Route 120/Interstate-5 connector bridge over the San Joaquin River (Caltrans Bridge Number 290016F) is located approximately 100 feet upstream of the Manthey Road Bridge. Project construction would be designed to avoid impacts on the structure. Removal of the Manthey Road Bridge would not result in impacts on the setting of the State Route 120/I-5 bridge that would affect its ability to convey significance because the period of significance is not connected to the Manthey Road Bridge. The construction of the new bridge would be visible, but would not affect the setting as it would be one of a number of such structures in the area.

The Southern Pacific Railroad Bridge is located far enough from the construction footprint of the proposed project that no construction impacts are anticipated. Like the State Route 120/I-5 connector bridge, the removal of the Manthey Road Bridge and construction of a new bridge would not result in impacts on the setting of the resource because there are a number of bridges in the area, and they are not connected by a period of significance.

The grain silos are located on the west side of the river, within the River Islands development. There is no potential for direct impacts during construction. The removal of the Manthey Road Bridge and the construction of a new bridge might be noticeable from the silos but would not affect the setting because there are currently bridges in the background, and the change would be minimal.

The State Historic Preservation Officer is anticipated to concur with a Finding of No Adverse Effect without Standard Conditions. There is no use of a Section 4(f) property (Appendix A).

The Extended Phase 1 excavations indicated that while no archeological resources that meet the criteria for historic properties were located within the ADI, there are areas that are sensitive for buried resources that may contain intact deposits. Disturbance or destruction of archaeological deposits that are eligible for listing in the National Register of Historic Places resulting from ground-disturbing activities

during construction would be an adverse effect. To reduce the severity of potential impacts, monitoring in sensitive areas will be required, and a Post-Review Discovery and Monitoring Plan will be prepared to guide monitoring and discovery response.

Even outside of archaeologically sensitive areas, there is always the potential that buried cultural resources or human remains may be encountered during construction. Caltrans standard procedures to stop work in case of accidental discovery, described below, ensure that these potential impacts would not be adverse.

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

If human remains are discovered, California Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the coroner will notify the California Native American Heritage Commission, which will then notify the Most Likely Descendent. At this time, the person who discovered the remains will contact Caltrans District 10 Professionally Qualified Staff so that they may work with the Most Likely Descendent on the respectful treatment and disposition of the remains. Further provisions of Public Resources Code 5097.98 are to be followed as applicable.

No-Build Alternative

Under the No-Build Alternative, no construction of the proposed project would take place, no structures would be removed or built, and no ground disturbing activities would take place. Therefore, there would be no effect on archaeological or built environment resources.

Avoidance, Minimization, and/or Mitigation Measures

Mitigation Measure CUL-1. Prepare and Implement Post Review Discovery Plan

Monitoring guided by the Post Review Discovery and Monitoring Plan will be required in areas that have been identified as sensitive for buried archaeological resources.

2.2 Physical Environment

2.2.1 Hydrology and Floodplain

Regulatory Setting

Executive Order 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the

only practicable alternative. The Federal Highway Administration requirements for compliance are outlined in 23 Code of Federal Regulations 650 Subpart A.

To comply, the following must be analyzed:

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

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

Affected Environment

The information in this section is based on the Final Memorandum Location Hydraulic Study prepared for the project in March 2016.

The San Joaquin River flows northward and drains the portion of the Central Valley, south of the Sacramento-San Joaquin River Delta and north of the Tulare Lake Basin. The San Joaquin River Basin covers a watershed of approximately 15,880 square miles. The principal streams in the basin are the San Joaquin River and its larger tributaries: the Cosumnes, Mokelumne, Calaveras, Stanislaus, Tuolumne, Merced, Chowchilla, and Fresno rivers.

The drainage area near the project site is listed in the Federal Emergency Management Agency’s Flood Insurance Study for San Joaquin County, California and Incorporated Areas. The project site is located near Mossdale, which has a listed drainage area of approximately 14,200 square miles.

The mean high water elevation of the Bradshaw’s Crossing (now River Islands Parkway) bridge, located approximately 2 miles downstream of the existing Manthey Road Bridge, has an mean high water elevation of 6 feet when referencing National Geodetic Vertical Datum of 1929 or 8.3 feet when referencing North American Vertical Datum. River stages were recorded at the project location from 2005 to present and used to determine the mean high water elevation at the Project location. The mean high water elevation at the project location was determined to be approximately 8.9 feet (North American Vertical Datum). The mean high water elevations at the bridge crossings in the project vicinity were determined by extrapolating the mean high water elevations at the Bradshaw’s Crossing bridge and the existing Manthey Road bridge.

Floodplains

The project site is located within Federal Emergency Management Agency's Zone AE and subject to flooding by the 100-year flood event. The bridge piers are within the Zone AE floodplain, with the eastern and western bridge approach areas within Zone X (unshaded), which represents the areas on the Flood Insurance Rate Map that are located outside of the limits of the 500-year floodplain and moderate-to low-risk areas with reduced flood risk due to levees. The base flood elevation at the San Joaquin River main channel is approximately 27 feet (North American Vertical Datum).

Environmental Consequences

Build Alternative

Short-term Construction Impacts

The design for 100- and 200-year water surface elevations of the existing and proposed conditions in the vicinity of the Manthey Road bridge over San Joaquin River were analyzed for short-term construction impacts. Short-term construction impacts for the Project would occur from the placement of separate temporary trestles for bridge removal and construction.

Temporary cofferdams would be used to remove the center and north in-water piers of the existing bridge and three additional cofferdams, one around each new pier location, would be used during construction. Placement of the temporary structures would increase the 100- and 200-year water surface elevations by 0.2 feet or less in the project vicinity, when compared to the proposed condition, and therefore there would be no adverse effect.

Long-term Construction Impacts

The alignment of the proposed Build Alternative is not parallel to the flow direction of the San Joaquin River. Therefore, the project would not be considered a longitudinal encroachment. The 100- and 200-year water surface elevations would increase by 0.1 feet or less in the project vicinity. Therefore, the project would have no risk associated with the change in the 100-year water surface elevation. In the project vicinity, the San Joaquin River is not classified as a floodway, so an elevation increase of 0.1 feet or less from the project would not be an adverse effect.

The project would result in an increase in impervious surface, due to a new bridge approach roadway. However, the added impervious surface area would be small, as compared to the overall watershed area of the San Joaquin River and would not modify the peak 100-year flow, and drainage patterns would be similar to existing conditions.

The proposed bridge structure within the Zone AE floodplain would slightly reduce the floodplain storage capacity of the San Joaquin River. However, with the removal of the existing bridge, there would be a net gain of 0.04 acre of riverbed area. There would be no significant changes to the flow characteristics of San Joaquin River

from the proposed project. Furthermore, long-term impacts to natural and beneficial floodplain values are not anticipated to result from the proposed project.

Under the City's Phase II Municipal Separate Storm Sewer Systems permit, the project is considered to be a Regulated Project and a Hydromodification Management Project. Hydromodification management prevents negative impacts to receiving waters resulting from increased flow volumes and rates. Baseline hydromodification management requires that the entire stormwater design volume or flow be retained at the project site through site design or stormwater control measures. Additional hydromodification control measures may be required if stormwater design volume or flow is discharged to the receiving water after implementation of site design and treatment controls. Because the project would be required to implement baseline and full hydromodification management measures, it would not have an adverse effect to the hydrology and hydraulics of the San Joaquin River at the project location.

Support of Incompatible Floodplain Development.

The purpose of the project is to replace the structurally deficient bridge, and the scope of the project does not include commercial development or urban growth within the existing Zone AE floodplain in the project vicinity. Therefore, the project would not support incompatible floodplain development.

No-Build Alternative

Under the No Build Alternative, the existing Manthey Road Bridge would remain in its current location and no construction of the proposed project would occur; therefore, there would be no effect on hydrology of the project site or the floodplain.

Avoidance, Minimization, and/or Mitigation Measure

No significant impacts were identified, and no avoidance, minimization and/or mitigation measures were identified.

2.2.2 Water Quality and Storm Water Runoff

Regulatory Setting

Federal Requirements: Clean Water Act

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

- Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the 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 National Pollutant Discharge Elimination System, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the United States Regional Water Quality Control Boards administer this permitting program in California. Section 402(p) requires permits for discharges of storm water from industrial/construction and municipal separate storm sewer systems.
- 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 the United States Army Corps of Engineers.

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

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

Ordinarily, projects that do not meet the criteria for a Regional or Nationwide Permit may be permitted under one of the United States Army Corps of Engineers’ Individual Permits. There are two types of Individual Permits: Standard Permits and Letters of Permission. For Individual Permits, the United States Army Corps of Engineers’ decision to approve is based on compliance with United States Environmental Protection Agency’s Section 404 (b)(1) Guidelines (40 Code of Federal Regulations Part 230), and whether the permit approval is in the public interest. The Section 404(b)(1) Guidelines (Guidelines) were developed by the United States Environmental Protection Agency in conjunction with the United States Army Corps of Engineers 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 the United States Army Corps of Engineers may not issue a permit if there is a least environmentally damaging practicable alternative to the proposed discharge that would have lesser effects on Waters of the United States and not have any other significant adverse environmental consequences. According to the Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent 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 United States Army Corps of Engineers, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 Code of Federal Regulations 320.4. A discussion of the least environmentally damaging practicable alternative determination, if any, for the document is included in the Wetlands and Other Waters section.

State Requirements: Porter-Cologne Water Quality Control Act

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

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

State Water Resources Control Board and Regional Water Quality Control Boards

The State Water Resources Control Board administers water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, Total Maximum Daily Loads, and National Pollutant Discharge

Elimination System permits. Regional Water Quality Control Boards are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

National Pollutant Discharge Elimination System Program

Municipal Separate Storm Sewer Systems

Section 402(p) of the Clean Water Act requires the issuance of National Pollutant Discharge Elimination System permits for five categories of storm water discharges, including Municipal Separate Storm Sewer Systems. A Municipal Separate Storm Sewer System is defined as “any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that is designed or used for collecting or conveying storm water.” The City of Lathrop is considered to be traditional small Municipal Separate Storm Sewer System permittee under the State Water Board's Waste Discharge Requirements for stormwater discharges from small Municipal Separate Storm Sewer Systems (National Pollutant Discharge Elimination System Order Number 2013-001-DWQ; General Permit Number CAS000004). This Order expired on June 30, 2018. Until the State Water Board clerk certifies the modified Small Municipal Separate Storm Sewer System Permit that contains the Amendment adopted by the State Water Board in December 2017, the unofficial draft document is available for use (Water Quality Order 2013-0001-DWQ National Pollutant Discharge Elimination System Number CAS000004 as amended by Order Water Quality 2015-0133-EXEC, Order Water Quality 2016-0069-EXEC, Water Quality Order 2017-XXXX-DWQ, Order Water Quality 2018-0001-EXEC, and Order Water Quality 2018-0007-EXEC). The City of Lathrop, in collaboration with San Joaquin County, Tracy, Lodi, Manteca, and Patterson prepared a Multi-Agency Post-construction Stormwater Standards Manual to provide consistent guidance for municipal workers, developers and builders in implementing the requirements under the Statewide Small Municipal Separate Storm Sewer System National Pollutant Discharge Elimination System permit. The State Water Resources Control Board or the Regional Water Quality Control Board issues National Pollutant Discharge Elimination System permits for five years, and permit requirements remain active until a new permit has been adopted.

Previously, the permit required the development of a Storm Water Management Plan to outline the requirements for municipal operations, industrial and commercial businesses, construction sites, and planning and land development. The requirements included multiple measures to control pollutants in stormwater discharges. However, the amended Order does not directly require the preparation and implementation of Storm Water Management Plans as required in the previous 2003 Storm Water Permit (Order 2003-0005-DWQ). However, the specific implementation actions for attenuation of peak flows and durations from new and redevelopment projects that were proposed by Permittees in the Storm Water Management Plans approved under the previous 2003 Storm Water Permit.

Construction General Permit

Construction General Permit, Order Number 2009-0009-DWQ (adopted on September 2, 2009, and effective on July 1, 2010), as amended by Order Number 2010-0014-DWQ (effective February 14, 2011) and Order Number 2012-0006-DWQ (effective on July 17, 2012). The permit regulates storm water discharges from construction sites that result in a Disturbed Soil Area of 1 acre or greater and/or are smaller sites that are part of a larger common plan of development. By law, all storm water discharges associated with construction activity, where clearing, grading, and excavation result in soil disturbance of at least 1 acre, must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than one acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the Regional Water Quality Control Board. Operators of regulated construction sites are required to develop Storm Water Pollution Prevention Plans implement sediment, erosion, and pollution prevention control measures, and obtain coverage under the Construction General Permit.

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

Section 401 Permitting

Under Section 401 of the Clean Water Act, any project requiring a federal license or permit that may result in a discharge to a Water of the 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 401 Certification are Clean Water Act Section 404 Permits issued by the United States Army Corps of Engineers. The 401 Permit certifications are obtained from the appropriate Regional Water Quality Control Board, dependent on the project location, and are required before the United States Army Corps of Engineers issues a 404 Permit.

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

Affected Environment

The information in this section is based on the Water Quality Assessment Report, Manthey Road Bridge Replacement Project, City of Lathrop, CA, prepared for the project in September 2018.

General Setting

Watershed

The project site is within the San Joaquin Delta hydrologic unit in hydrologic sub-area 544.00. The project site is located over and around the mainstem of the San Joaquin River. The San Joaquin River drains the portion of the Central Valley south of the Sacramento-San Joaquin River Delta and north of the Tulare Lake Basin. The San Joaquin River has a total watershed area of approximately 15,880 square miles; the Mossdale drainage area encompassing the project site drains approximately 14,200 square miles. The principal streams in the San Joaquin basin are the San Joaquin River and its larger tributaries: the Cosumnes, Mokelumne, Calaveras, Stanislaus, Tuolumne, Merced, Chowchilla, and Fresno rivers. The project site is within the San Joaquin Valley – Tracy Groundwater Sub-basin.

Water Quality Objectives / Standards for Beneficial Uses

Surface and Groundwater Water Quality Objectives/Standards and Beneficial Uses

The Central Valley Regional Water Quality Control Boards Basin Plan lists the beneficial uses of surface water bodies and groundwater aquifers, as well as water quality objectives developed to maintain the beneficial uses. Table 2.2.2-1 lists the existing beneficial uses at the project site.

Table 2.2.2-1. Existing Beneficial Uses at Project Site

Beneficial Use	Sacramento San Joaquin Delta
Municipal and Domestic Supply	X
Agricultural Supply	
Irrigation	X
Stock Watering	X
Industrial Service Supply	
Process	X
Service Supply	X
Power	X
Recreation	
Water-contact Recreation	X
Canoeing and Rafting	
Non-contact Water Recreation	X
Freshwater Habitat	
Warm Freshwater Habitat	X

Beneficial Use	Sacramento San Joaquin Delta
Cold Freshwater Habitat	X
Migration of Aquatic Organisms	
Warm (e.g. Striped Bass, Sturgeon, and Shad)	X
Cold (e.g. Salmon and Steelhead)	X
Spawning, Reproduction, and/or Early Development	
Warm (e.g. Striped Bass, Sturgeon, and Shad)	X
Cold (e.g. Salmon and Steelhead)	
Wildlife Habitat	X
Navigation	X

List of Impaired Waters

At the project site, the San Joaquin River is listed on the 2014–2016 Integrated Report (Clean Water Act Section 303[d] List / 305[b] Report) for chlorpyrifos, DDT, diazinon, electrical conductivity, Group A pesticides, invasive species, mercury, and toxicity.

Environmental Consequences

Build Alternative

Short-Term Construction Impacts

As discussed above in Regulatory Setting, several permits would be required for construction of the project. Table 2.2.2-2 lists these permits. The primary purpose of these permits is to enforce the Clean Water Act and protect State and Federal water quality standards. In addition, the project would comply with all construction site best management practices specified in the Storm Water Pollution Prevention Plan to reduce conveyance of pollutants into surface waters and other nonpoint-source runoff. Implementation of the conditions of these permits would reduce impacts to water quality, and there would be no adverse effects.

Table 2.2.2-2. Water Quality Associated Permits Needed for the Project

Permit	Regulatory Agency
Clean Water Act Section 401: Water Quality Certification	Central Valley Regional Water Quality Control Boards
Clean Water Act Section 404: Permit for Placement of Fill	United States Army Corps of Engineers
Clean Water Act Section 408: Navigation and Navigable Waters	United States Army Corps of Engineers
Rivers and Harbors Act of 1899 Section 10: Permit for Work in Navigable Waters	United States Army Corps of Engineers
California Fish and Game Code Section 1602: Lake and Streambed Alteration Agreement	California Department of Fish and Wildlife

Pile and Cofferdam Installation

Pile and cofferdam installation and barge relocation activities are likely to temporarily elevate suspended sediment concentrations and turbidity. Both activities would directly disturb channel substrate, resulting in a localized and temporary plumes of suspended sediment. In addition, sediment along the river bottom may contain contaminants that could subsequently degrade water quality. San Joaquin River sediment could include pesticides, such as diazinon, DDT, and selenium. These effects would be temporary and localized to the area immediately surrounding temporary pile and cofferdam installation and removal. However, with implementation of the conditions associated with the permits listed above and due to the temporary and localized nature of these impacts, effects would be minimal.

Dewatering

Dewatering within cofferdams is anticipated during construction activities, including construction of bridge piers and removal of the existing bridge pier footings. However, dewatering would be conducted on temporary basis during the construction phase. Temporary construction dewatering is not anticipated to significantly affect groundwater quality or quantity, because groundwater sources would not be used during project construction or operation. Compliance with Waste Discharge Requirements and dewatering regulations would ensure that dewatering activities are monitored and treated as required and that no violations of any water quality standards or waste discharge requirements would occur. Discharges from the construction dewatering system would be regulated under a National Pollutant Discharge Elimination System permit, and the conditions therein would avoid and/or minimize impacts to water quality; therefore, effects would be minimal.

Grading and Excavation

The project has the potential for temporary water quality impacts due to grading and excavation activities, which can cause increased erosion. Stormwater runoff from the project site may transport pollutants to nearby storm drains. Generally, as the disturbed soil area increases, the potential for temporary water quality impacts also increases. The project would result in disturbed soil area of 29.94 acres requiring the preparation of a Storm Water Pollution Prevention Plan to implement sediment, erosion, and pollution prevention control measures and obtain coverage under the Construction General Permit Order Number 2012-0006-DWQ. Implementation of this plan would reduce the impacts of grading and excavation, and effects would be minimal.

Fueling or Maintenance of Construction Equipment

Fueling or maintenance of construction vehicles may result in the accidental spill or release of fuels, oils, or other potentially toxic materials. An accidental release of these materials may pose a threat to water quality if contaminants enter storm drains, open channels, or the surface receiving water body. With proper

implementation of best management practices required for the permits listed above, there would be no adverse effects.

Water Related Recreation

The segment of the San Joaquin River within the project limits has been identified as having combined existing beneficial uses of water contact and non-contact water recreation. The project may impact these beneficial uses during construction by restricting access to the portion of the river directly beneath and adjacent to the project site. After construction, recreational beneficial uses of the San Joaquin River would be restored to the preconstruction condition, and there would be no adverse effect.

Long-term Impacts

The project would add 6.0 acres of impervious area to the watershed. However, the watershed draining to the project site is approximately 14,200 square miles. The relatively small increase of impervious surfaces in relation to the watershed area draining to the project site suggests that impacts to water quality resulting from project activities would be minimal. Furthermore, traffic and stormwater runoff would not increase contaminant load and sediment from vehicular and road use into the San Joaquin River beyond the current levels.

The project will adhere to the City's Phase II Municipal Separate Storm Sewer System permit and implement best management practices to minimize these impacts. The project would result in more than 1 acre of added or replaced impervious surface. Therefore, the project is considered a Regulated Project and Hydromodification Management Project under the City's Phase II Municipal Separate Storm Sewer System permit. Permanent pollution prevention design measures required include site design measures, source control measures, stormwater treatment control measures, baseline hydromodification measures, and hydromodification measures. Therefore, long-term impacts are not anticipated for the project.

No-Build Alternative

Under the No-Build Alternative, there would be no construction of the proposed project and, therefore, no potential to affect water quality as a result of construction. There would be no changes to impervious surfaces and, therefore, no changes to stormwater runoff, groundwater recharge, or water quality at the project site.

Avoidance, Minimization, and/or Mitigation Measures

The design features to address water quality impacts are a condition of the Phase II Municipal Separate Storm Sewer System permit, Construction General Permit, and other regulatory agency requirements. With proper implementation of these design features or best management practices, short-term construction-related water quality impacts and permanent water quality impacts would be avoided or minimized.

Measures for In Water and Over-water Construction Activity

Best management practices would be implemented to avoid or minimize impacts to water resources during in-water construction activities required either for the installation of piles for temporary trestles or spud piles used to secure barge-mounted cranes in place, as well as the installation of cofferdams as required by the permits listed in Table 2.2.2-2. Best management practices would include:

- Isolating pier foundation construction from the receiving water with a cofferdam to limit the transport of turbid water into San Joaquin River or as otherwise approved by the Central Valley Regional Water Quality Control Board;
- Minimizing relocating barges, if used, to avoid disturbing channel substrate and locally increasing turbidity levels with the spud piles;
- Providing water quality monitoring during activities that have the potential to impact water quality of the San Joaquin River; and
- Providing a description and design drawings of the proposed material containment and collection system to prevent discharges of construction material, demolition debris, and equipment to the receiving water with the Storm Water Pollution Prevention Plan

Measures for Stormwater and Groundwater

Design features to address water quality impacts are a condition of the Phase II Municipal Separate Storm Sewer System permit, construction general permit, and other regulatory agency requirements. With proper implementation of these design features or best management practices, short-term construction-related water quality impacts and permanent water quality impacts would be avoided or minimized. Examples of these best management practices would include:

- Implementing erosion control best management practices to stabilize new pervious surfaces to avoid suspended sediment and turbidity effects; and
- Providing stormwater treatment best management practices that allow for infiltration of stormwater runoff.

Construction Dewatering

Construction dewatering would be regulated under the Central Valley Regional Water Quality Control Board's Waste Discharge Requirements General Order for Dewatering and Other Low Threat Discharges to Surface Waters (Order Number 5-00-175, National Pollutant Discharge Elimination System Number CAG995001), as well as the construction general permit. The provisions and conditions in these permits pertaining to construction dewatering and discharges would avoid and/or minimize potential impacts to water quality.

2.2.3 Geology, Soils, Seismicity and Topography

Regulatory Setting

For geologic and topographic features, the key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects “outstanding examples of major geological features.” Topographic and geologic features are also protected under CEQA.

This section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures. Structures are designed using the Caltrans’ Seismic Design Criteria. The Seismic Design Criteria provides the minimum seismic requirements for highway bridges designed in California. A bridge’s category and classification will determine its seismic performance level and which methods are used for estimating the seismic demands and structural capabilities. For more information, please see the Caltrans Division of Engineering Services, Office of Earthquake Engineering, Seismic Design Criteria.

The California Surface Mining and Reclamation Act provides for the evaluation of an area’s mineral resources using a system of mineral resource zone classifications that reflect the known or inferred presence and significance of a given mineral resource. The mineral resource zone classifications are based on available geologic information, including geologic mapping and other information on surface exposures, drilling records, and mine data, and socioeconomic factors, such as market conditions and urban development patterns. The mineral resource zone classifications are defined as follows:

- Mineral resource zone -1: areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence;
- Mineral resource zone -2: areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists;
- Mineral resource zone -3: areas containing mineral deposits, the significance of which cannot be evaluated from available data; and
- Mineral resource zone -4: areas where available information is inadequate for assignment into any other mineral resource zone.

Affected Environment

The information in this section is based on the Final Structures Preliminary Geotechnical Report prepared for the project in July 2014. To identify potential impacts within the project area, environmental databases and historical aerial photographs and maps were reviewed and a site visit was conducted.

Site Geology

The bridge site is located in the northern portion of the San Joaquin Valley and within the Great Valley Geomorphic Province. This province includes the Sacramento and San Joaquin valleys, which are generally bounded by the Sierra Nevada on the east and the Coast Ranges on the west. The San Joaquin Valley is a structural trough that contains thousands of feet of alluvial lacustrine and marine sedimentary deposits that have accumulated as the structural trough formed and the adjacent mountain ranges were elevated.

Published geologic mapping by the California Geologic Survey shows the site is underlain by Quaternary Dos Palos alluvium. The near-surface deposits are typically Holocene-age (within the last 11,000 years), alluvial fan and flood plain sediments composed of non-marine sand, silt, and clay. These deposits are underlain by older (late Pleistocene age), marine and non-marine sand, silt and clay sediments, typically deposited in shallow seas and estuaries. These sediments include the Modesto formation, composed mostly of non-marine sand and silt.

Individual units of sand, silt, and clay within the uppermost few hundred feet of the ground surface are considered to be highly variable in both thickness and distribution. This variability will affect the type and depth of foundation alternatives for the proposed bridge.

Subsurface Conditions

Subsurface conditions were determined by reviewing test borings logs and historical subsurface data for the I-5/State Route 120 interchanges bridges over the San Joaquin River (within about 90 to 390 feet south of the existing Manthey Road Bridge).

Available subsurface data ranged from ground surface to elevations of approximately 30 to 95 feet. The younger alluvium near surface soils can be characterized as loose- to medium-dense, fine- to medium-grained, sandy silt, silty sand, and poorly graded sand, from the ground surface to elevations of approximately 15 to 20 feet. These soils are underlain by older alluvium generally consisting of dense to very dense, fine- to medium-grained silty sand and poorly graded sand to elevations approximately 40 to 45 feet, followed by stiff to hard, low to medium-plastic, silt and lean clay, and dense, fine- to medium-dense silty sand and poorly graded sand.

San Joaquin County Flood Control and Water Conservation District groundwater elevation and contour maps (2007) indicate that groundwater should be between elevations of 0 to 10 feet.

Primary Seismic Hazards

The State of California considers two aspects of earthquake events as primary seismic hazards: surface fault rupture (i.e., disruption of the Earth's surface as a result of fault activity) and seismic ground shaking.

Seismic Fault Rupture

The site does not lie within or adjacent to an Alquist-Priolo Earthquake Fault Zone for fault rupture hazard, and no known active faults are mapped within or through the project area. The current Caltrans Deterministic PGA Map does not show active faults in the project area. The closest fault considered in ground motion analysis is the Great Valley 07 (Orestimba) (Caltrans Fault Identification Number 138, added March 2013) located approximately 11.7 miles west of the site. Faults in the vicinity are shown in Figure 2.2.3-1.

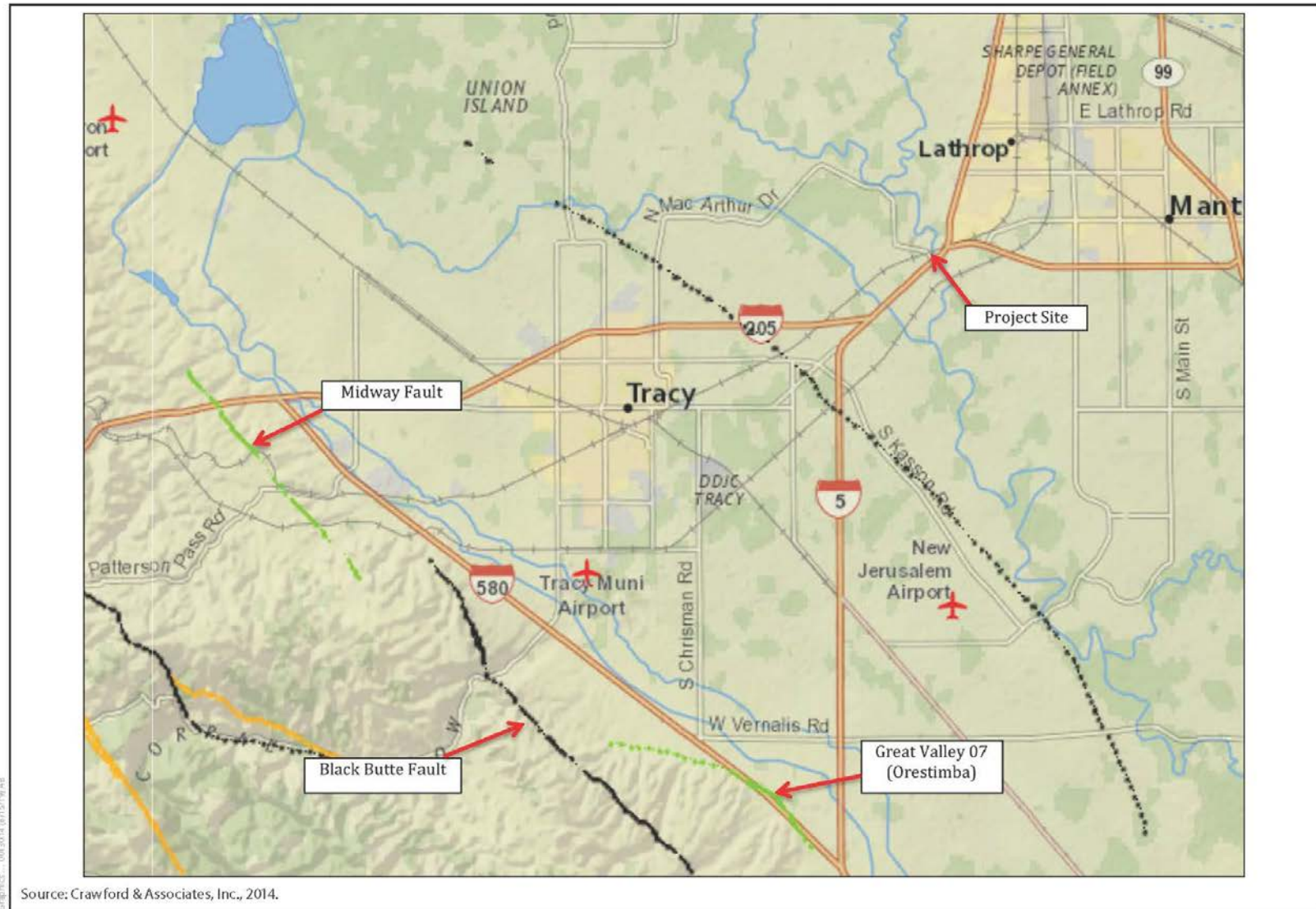


Figure 2.2.3-1 Map of Seismic Faults

Liquefaction and Ground Shaking

Liquefaction can occur when saturated, loose- to medium-dense, granular soils or specifically defined cohesive soils are subjected to ground shaking. Liquefaction potential varies across the potential bridge alignment zone, due to change in soil type and density. A liquefaction analysis was performed and concluded that the younger alluvium above approximately elevation -20 feet is subject to liquefaction and could result in total settlement of 6 to 12 inches.

Seismic Settlement

During a seismic event, ground shaking can cause densification of granular soil above the water table that can result in settlement of the ground surface. Based on the soil and groundwater conditions at the site, the risk of densification is estimated to be low, pending further investigation.

Mineral Resources

The project site was classified for mineral resource zone -2 in 1988 by the California Geological Survey. The river corridor was classified as mineral resource zone -3.

Environmental Consequences

Build Alternative

The nearest fault is located approximately 11.7 miles west of the project site. Thus, impacts on construction workers or the traveling public related to surface fault rupture under the build alternative would be less than significant.

The project is an area with a low potential for strong seismic ground shaking. A geotechnical field investigation would be conducted, and a Geotechnical Design Report with recommended design parameters would be prepared in accordance with the Caltrans Highway Design Manual. The project would be designed according to Caltrans seismic standards, as provided in the Highway Design Manual, minimizing the risk of injury or death to construction workers or the traveling public from structure failure or collapse due to strong seismic ground shaking.

The project area is subject to a low potential for seismic-related ground failure because of the low potential for strong ground shaking and the gently sloping topography. However, further subsurface exploration and laboratory testing is needed to assess the stability of soils in significant cuts and fills, as described in the geotechnical report. The impact on construction workers or the traveling public is anticipated to be less than significant.

There is a low risk for landslides because of the gentle slope of the topography. There would be no impact on construction workers or the traveling public.

Ground-disturbing earthwork associated with project construction could increase soil erosion rates and loss of topsoil. The best management practices described in Section 2.2.1, *Hydrology and Floodplain*, and Section 2.2.2, *Water Quality and Stormwater Runoff*, would minimize erosion and the loss of topsoil.

The project area is located on soils that have shallow depth to the saturation zone. The bridge approaches may require fill depths greater than 10 feet. It is anticipated that subgrade soil, suitably prepared and compacted, will provide adequate support for new fills. A final Geotechnical Design Report would be prepared, and these recommendations would be incorporated into the project design. This impact would be less than significant.

No natural landmarks are present in the project area or vicinity; thus there would be no impact to natural landmarks.

Although there are designated mineral resource areas (mineral resource zone -2 and mineral resource zone -3) in the project area, the project entails a replacement of the existing bridge and would not impede the extraction of any known mineral resources. This impact would be less than significant.

No-Build Alternative

Under the No-Build Alternative, there would be no change in geology, soil, seismic, or topographic conditions.

Avoidance, Minimization, and/or Mitigation Measures

Avoidance and minimization measures that could be recommended in the Geotechnical Design Report to address the seismic and soil issues are described below. The best management practices described in Section 2.2.1, *Hydrology and Floodplains*, and Section 2.2.2, *Water Quality and Stormwater Runoff*, would minimize erosion and the loss of topsoil.

Minimize Impacts from Seismic Events

To minimize potential impacts from seismic events, the project will be constructed in accordance with all applicable Caltrans standards and regulations and designed for the maximum credible earthquake. All construction activities will adhere to current engineering practices and recommendations provided by a Geotechnical Engineer/Engineering Geologist.

Minimize Soil Instability

To minimize the potential for soil instability from shrink-swell potential, soils with high shrink-swell potential will be compacted at the highest optimal moisture content possible. In general, fill slopes should be compacted to 90 percent relative compaction and 95 percent at bridge approaches.

If retaining walls are needed, the engineered fill can generally support walls lower than about 15 feet high. For walls greater than 15 feet, an engineered retaining walls is recommended.

Conduct Geotechnical Investigation

Additional subsurface exploration and laboratory testing is required for project design. During final design at least one test boring at each abutment and at least one test boring at each bent. Supports located within the existing river channel will likely be drilled from a barge. The additional investigation will include groundwater encountered, soil depths, and collections of bulk and relatively undisturbed soil samples for laboratory testing.

2.2.4 Hazardous Waste and Materials

Regulatory Setting

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

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

- 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, Executive Order 12088, *Federal Compliance with Pollution Control Standards*, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

California regulates hazardous materials, waste, and substances under the authority of the California Code, Health and Safety Code and is also authorized by the federal government to implement Resource Conservation and Recovery Act in the state. California law also addresses specific handling, storage, transportation, disposal,

treatment, reduction, cleanup, and emergency planning of hazardous waste. The Porter-Cologne Water Quality Control Act also restricts disposal of wastes and requires cleanup of wastes that are below hazardous waste concentrations but could impact ground and surface water quality. California regulations that address waste management and prevention and cleanup 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.

Affected Environment

The information in this section is based on the Initial Site Assessment prepared for the project in August 2014 (validated June 2019). To identify potential impacts within the project area, environmental databases and historical aerial photographs and maps were reviewed and a site visit was conducted.

The database search covered an area within 1 mile of the center of the project area. Six sites were located within the project study area, which was visited on June 27, 2014. Properties were inspected for hazardous material storage, surface staining or discoloration, debris, stressed vegetation, or other conditions that may be indicative of potential sources of soil or ground water contamination. The site was also checked for evidence of fill/ventilation pipes, ground subsidence, or other evidence of existing or preexisting underground storage tanks.

Several environmental databases identify 23 and 26 Stewart Road (within the River Islands development) as locations of historical underground storage tanks. The tank status of 26 Stewart Road is closed, and unknown for 23 Stewart Road. No leaks are documented at these addresses. A large amount of agricultural equipment and debris was observed on these parcels, which could indicate potential hazardous materials.

An aboveground storage tank is located at 15 Stewart Road, the South San Joaquin Pump Station. No leaks are reported at this location. Close inspection of the facility was not possible during the site reconnaissance.

The portion of the project area north of the Union Pacific Railroad has been used for agricultural production since at least 1952 (Assessor's Parcel Number 241-020-63). Farm equipment and debris and a potential historical agricultural chemical storage and/or mixing in the area were identified in the northwest corner of the parcel on the south side of Sadler Oaks Road. There is a potential for residual pesticides and/or herbicides in shallow soils in these areas.

Three water basins are located in the northern area of the site on either side of the Golden Valley Parkway alignment. Groundwater and shallow soil have the potential to be impacted from the basins and associated land application practices. Monitoring wells may also be associated with these facilities.

The Union Pacific Railroad passes through the project area. A railroad has been in that location since 1869. Soils next to railroad tracks have typically been affected by heavy metals (total petroleum hydrocarbons as diesel, fuel oil, and polychlorinated biphenyls); soils along railroad tracks may be affected by locomotives (total petroleum hydrocarbons as diesel), railroad ties (polynuclear aromatic hydrocarbons), or slag ballast used to set the ties (heavy metals). As a result, it is likely that soil and groundwater in this area are contaminated.

The Manthey Road bridge structure was built before 1980. There are also several properties that may be acquired that contain associated buildings built before 1980. Therefore, it is likely that these structures contain lead-based paint and/or asbestos-containing materials.

The presence of aerially deposited lead from leaded fuel adjacent to heavily traveled roadways is not uncommon. Manthey Road and I-5 have been traffic bearing roads since 1937. As a result, soils adjacent to Manthey Road and I-5 may contain aerially deposited lead.

Pole-mounted transformers and power lines were observed in the project area. Transformers may contain polychlorinated biphenyls or other hazardous materials.

Environmental Consequences

Build Alternative

The parcels on Stewart Road and the water basins along the Golden Valley Parkway alignment would not be affected by construction or operation of the project. The project alignment is located more than 300 feet from the Union Pacific Railroad alignment; therefore, it is unlikely that contaminated soils associated with the railroad would be disturbed.

A Pacific Gas and Electric Company power pole would need to be relocated. Identification and remediation of old transformers is the responsibility of the utility owner.

Structure demolition and ground-disturbing activities associated with construction may result in the release or disturbance of contaminated soil or hazardous building materials.

Aerially Deposited Lead

Aerially deposited lead from the historical use of leaded gasoline exists along roadways throughout California, thus, there may be soils with elevated concentrations of lead as a result of aerially deposited lead along Manthey Road, within the limits of the project alternative. Soil determined to contain lead

concentrations exceeding stipulated thresholds must be managed under the Soil Management Agreement (aerially deposited lead Agreement) of July 1, 2016, between Caltrans and the California Department of Toxic Substances Control. The aerially deposited lead Agreement allows such soils to be safely reused within the project limits, as long as all requirements of the aerially deposited lead Agreement are met.

Lead-Based Paint and Asbestos-Containing Materials

Construction of the Build Alternative will involve demolition of the Manthey Road bridge and the existing buildings south of Sadler Oak Road that may expose construction workers to hazardous wastes or materials, including lead-based paint or asbestos-containing materials. Asbestos-containing pipe or bridge components may be encountered during demolition. Lead-containing paint associated with steel structures (such as the existing bridge and buildings) may also be encountered during demolition. Disturbing either yellow or white pavement markings by grinding or sandblasting could expose construction workers or the general public to lead chromate, unless standard removal protocols are followed. Exposure of construction workers or the general public to these hazardous materials or wastes could pose a possible threat to human health.

Agricultural Land Uses

Soils contaminated with pesticides, herbicides, and other agricultural chemicals may be present within the project area. Ground-disturbing activities, such as grading and excavation, may expose construction workers and the general public to hazardous materials that may result in health effects.

No-Build Alternative

Under the No-Build Alternative, no construction of the proposed project would take place and the Manthey Road bridge would remain in place. There would be no potential to disturb any hazardous materials and therefore, there would be no impact.

Avoidance, Minimization, and/or Mitigation Measures

No mitigation is required. The following standard procedures would be required as part of the project to avoid and minimize effects related to hazardous materials.

Develop and Implement Plans to Address Worker Health and Safety

Contractors will be required to work under health and safety and soil management plans, which will be prepared to address worker safety when working with potentially hazardous materials, including potential asbestos-containing materials, lead-based paint, lead chromate, soils potentially containing aerially deposited lead, pesticides, herbicides, and other construction-related materials within the project right-of-way. The plans will provide for identification of potential hazardous materials at the work site and specific actions to avoid worker exposure.

Appropriately Dispose of Soils Contaminated with Aerially Deposited Lead

To prevent exposure of workers and the public to contaminated soils, requirements as detailed in the aerially deposited lead Agreement will be followed. In addition, surface soils from potentially contaminated areas will be tested and, should they exceed standards, screened and contaminated soils will be disposed of appropriately. Soil excavated from the surface to a depth of 1 foot can be reused within the public right-of-way, if covered with at least 1 foot of clean soil or pavement structure. If soil excavated from the top 1 foot will not be reused within the public right-of-way, then the excavated soil would be either: (1) managed and disposed of as a California hazardous waste, or (2) stockpiled and resampled to confirm waste classification in accordance with specific disposal facility acceptance criteria, if applicable.

Conduct Visual Inspection and Testing of Contaminated Soils

There is a potential for residual pesticides and/or herbicides in shallow soil in the northwest corner of the parcel on the south side of Sadler Oaks Road (Assessor's Parcel Number 241-020-63). The equipment and debris area on this parcel will be inspected for surface staining prior to construction activities. If staining is observed, soil samples will be collected and tested for residual pesticides and herbicides. If soil contamination is identified, the City will comply with federal and state regulations and the San Joaquin County Certified Unified Program Agencies regulatory requirements regarding the handling and disposal of hazardous wastes. These requirements include consultation with the Department of Toxic Substances Control and Regional Water Quality Control Board and adherence to the Storm Water Prevention Pollution Plan. The Storm Water Prevention Pollution Plan requirement of best management practices designed to minimize the release of hazardous materials would help reduce potential impacts. Contaminated soils not reused onsite will be disposed of at a landfill facility authorized to accept such materials.

Conduct Sampling, Testing, Removal, Storage, Transportation, and Disposal of Yellow Traffic Striping along Existing Roadways

To protect workers and the public from lead exposure, yellow pavement striping subject to construction disturbance, demolition, or removal will be tested for lead-based paints prior to disturbance or removal. All aspects of the proposed project associated with removal, storage, transportation, and disposal of yellow pavement striping will be in strict accordance with appropriate regulations of the California Health and Safety Code. Disposal of the stripes will be at a Class 1 disposal facility. The responsibility of implementing this measure will be outlined in the contract between the City and its contractors.

Conduct Asbestos and Lead Surveys of Structures

To prevent exposure of workers and the public to asbestos and lead, a hazardous materials survey will be conducted prior to the demolition of the existing bridge. If lead or asbestos is found, an abatement plan will be developed prior to removal or renovation. The abatement plan will provide for a California-certified asbestos consultant and California Department of Health Services-certified lead project

designer, who will prepare hazardous materials specifications for the abatement of the asbestos-containing materials and lead-containing paint. The specification will be the basis for selecting qualified contractors to perform the proposed asbestos and lead-abatement work. A California-licensed asbestos abatement contractor will be retained to perform the abatement of any asbestos-containing construction materials and lead-based paint deemed potentially hazardous. Abatement of hazardous building materials will be completed prior to any work on these structures.

2.2.5 Air Quality

Regulatory Setting

The Federal Clean Air Act, as amended, is the primary federal law that governs air quality, and the California Clean Air Act is its companion state law. These laws, and related regulations by United States Environmental Protection Agency and the California Air Resources Board set standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards. National Ambient Air Quality Standards and state ambient air quality standards have been established for six transportation-related criteria pollutants that have been linked to potential health concerns: carbon monoxide, nitrogen dioxide, ozone, particulate matter—which is broken down for regulatory purposes into particles of 10 micrometers or smaller (suspended particulate matter) and particles of 2.5 micrometers and smaller (fine particulate matter)—and sulfur dioxide. In addition, national and state standards exist for lead, and state standards exist for visibility-reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. The National Ambient Air Quality Standards and state standards are set at levels that protect public health with a margin of safety and are subject to periodic review and revision. Both state and federal regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics in their general definition.

Federal air quality standards and regulations provide the basic scheme for project-level air quality analysis under NEPA. In addition to this environmental analysis, a parallel conformity requirement under the Federal Clean Air Act also applies.

Conformity

The conformity requirement is based on Federal Clean Air Act Section 176(c), which prohibits the United States Department of Transportation and other federal agencies from funding, authorizing, or approving plans, programs, or projects that do not conform to State Implementation Plan for attaining the National Ambient Air Quality Standards. Transportation Conformity applies to highway and transit projects and takes place on two levels: the regional (or planning and programming) level and the project level. The proposed project must conform at both levels to be approved.

Conformity requirements apply only in nonattainment and maintenance (former nonattainment) areas for the National Ambient Air Quality Standards and for the specific National Ambient Air Quality Standards that are or were violated. United

States Environmental Protection Agency regulations at 40 Code of Federal Regulations 93 govern the conformity process. Conformity requirements do not apply in unclassifiable/attainment areas for National Ambient Air Quality Standards and do not apply at all for state standards, regardless of the status of the area.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the National Ambient Air Quality Standards for carbon monoxide, nitrogen dioxide, ozone, particulate matter, and in some areas (although not in California), sulfur dioxide. California has nonattainment or maintenance areas for all of these transportation-related “criteria pollutants” except sulfur dioxide, and also has a nonattainment area for lead; however, lead is not currently required by the Federal Clean Air Act to be covered in transportation conformity analysis. Regional conformity is based on emission analysis of Regional Transportation Plans and Federal Transportation Improvement Programs that include all transportation projects planned for a region over a period of at least 20 years (for the Regional Transportation Plan) and 4 years (for the Federal Transportation Improvement Program). Regional Transportation Plans and Federal Transportation Improvement Program conformity uses travel-demand and emission models to determine whether or not the implementation of those projects would conform to emission budgets or other tests at various analysis years showing that requirements of the Federal Clean Air Act and the State Implementation Plan are met. If the conformity analysis is successful, the Metropolitan Planning Organization, Federal Highway Administration, and Federal Transit Administration make the determinations that the Regional Transportation Plans and Federal Transportation Improvement Programs are in conformity with the State Implementation Plan for achieving the goals of the Federal Clean Air Act. Otherwise, the projects in the Regional Transportation Plan and/or Federal Transportation Improvement Program must be modified until conformity is attained. If the design concept and scope and the open-to-traffic schedule of a proposed transportation project are the same as described in the Regional Transportation Plan and Federal Transportation Improvement Program, then the proposed project meets regional conformity requirements for purposes of project-level analysis.

Project-level conformity is achieved by demonstrating that the project comes from a conforming Regional Transportation Plan and Transportation Improvement Program; the project has a design concept and scope that has not changed significantly from those in the Regional Transportation Plan and Transportation Improvement Program; project analyses have used the latest planning assumptions and Environmental Protection Agency-approved emissions models; and in particulate matter areas, the project complies with any control measures in the State Implementation Plan. Furthermore, additional analyses (known as hot-spot analyses) may be required for projects located in carbon monoxide and particulate matter nonattainment or maintenance areas to examine localized air quality impacts.

Affected Environment

Information presented in this section is based on the Air Quality Report prepared for the proposed project in February 2019.

The topography of a region can substantially affect air flow and resulting pollutant concentrations. California is divided into 15 air basins with similar topography and meteorology to better manage air quality throughout the state. Each air basin has a local air district that is responsible for identifying and implementing air quality strategies to comply with ambient air quality standards. The project site is located in the city of Lathrop in San Joaquin County, an area in the San Joaquin Valley Air Basin, which includes all of San Joaquin, Stanislaus, Merced, Madera, Fresno, Tulare and King counties and a portion of Kern County. Air quality regulation in the San Joaquin Valley Air Basin is administered by the San Joaquin Valley Air Pollution Control District San Joaquin Valley Air Basin. Population for San Joaquin County is currently approximately 754,000 and is projected to exceed 1 million by 2040, and the county's economy is largely driven by the agricultural sector, with increasing gains in the transportation and utilities, government, construction, education and healthcare, and leisure and hospitality sectors.

Climate, Meteorology, and Topography

Meteorology (weather) and terrain can influence air quality. Certain weather parameters are highly correlated to air quality, including temperature, the amount of sunlight, and the type of winds at and above the surface. Winds can transport ozone and ozone precursors from one region to another, contributing to air quality problems downwind of source regions. Furthermore, mountains can act as a barrier that prevents ozone from dispersing.

The Stockton Airport climatological station, maintained by the National Oceanic and Atmospheric Administration, is the closest station to the project site and thus representative of meteorological conditions near the project. The climate of the project area is generally Mediterranean in character and is characterized by warm, dry summers and cool winters. Summer high temperatures often exceed 100 degrees Fahrenheit, averaging in the low 90s in the northern valley and high 90s in the south.

Although marine air generally flows into the basin from the delta, the surrounding mountain ranges restrict air movement through and out of the valley. Wind speed and direction influence the dispersion and transportation of ozone precursors, particles of 10 micrometers or smaller, and carbon monoxide; the more wind flow, the less accumulation of these pollutants.

The vertical dispersion of air pollutants in the San Joaquin Valley Air Basin is limited by the presence of persistent temperature inversion (warm air over cool air). Because of differences in air density, the air above and below the inversion does not mix. Ozone and its precursors will mix and react to produce higher concentrations under an inversion and will trap directly emitted pollutants, such as carbon monoxide.

Precipitation and fog tend to reduce or limit pollutant concentrations. Ozone needs sunlight to form, and clouds and fog block the required radiation. Carbon monoxide is slightly water soluble, so precipitation and fog tend to reduce carbon monoxide concentrations in the atmosphere. Suspended particulate matter is somewhat washed from the atmosphere with precipitation. Annual precipitation in the valley decreases from north to south, with about 20 inches in the north, 10 inches in the middle, and less than 6 inches in the southern part of the valley. In general, amounts of suspended particulate matter washed from the atmosphere during heavy rain events are small in comparison to the total ambient concentrations.

Existing Air Quality Conditions

Existing air quality conditions in the project area can be characterized in terms of the ambient air quality standards that federal and state governments have established for various pollutants by monitoring data collected in the region. For some pollutants, separate standards have been set for different measurement periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions).

Table 2.2.5-1 shows the state and federal ambient air quality standards, as well as the attainment status of the project area in San Joaquin County. The table also summarizes the principal health and atmospheric effects of each pollutant and the typical emission sources.

Table 2.2.5-2 shows the status of United States Environmental Protection Agency-approved State Implementation Plans that are relevant to the proposed project.

Table 2.2.5-3 lists air quality trends in data collected at the Tracy–Airport (Air Resources Board #39271) and Stockton–Hazelton (Air Resources Board #39252) monitoring stations for the past 3 years. Located 10 miles southwest and 11 miles northeast of the project site, the Tracy–Airport and Stockton–Hazelton monitoring stations are representative of the project site, due to the similar climate, topography, and urban setting. During the 2015–2017 monitoring period, exceedances were recorded at the monitoring stations for the state 1-hour ozone standards, state and federal 8-hour ozone standards, state suspended particulate matter standards, and state and federal fine particulate matter standards.

Table 2.2.5-1. State and Federal Criteria Air Pollutant Standards, Effects, Sources, and Attainment Status for the Project Area in San Joaquin County

Pollutant	Average Time	California Standard	National Standard	Principal Health and Atmospheric Effects	Typical Sources	California Attainment Status	Federal Attainment Status
Ozone	<ul style="list-style-type: none"> • 1 hour • 8 hours 	<ul style="list-style-type: none"> • 0.09 parts per million • 0.070 parts per million 	<ul style="list-style-type: none"> • Not Applicable • 0.070 parts per million 	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage and cancer. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include many known toxic air contaminants. Biogenic volatile organic compounds may also contribute.	Low-altitude ozone is almost entirely formed from reactive organic gases/volatile organic compounds (reactive organic gases or volatile organic compound) and nitrogen oxides in the presence of sunlight and heat. Common precursor emitters include motor vehicles and other internal combustion engines, solvent evaporation, boilers, furnaces, and industrial processes.	<ul style="list-style-type: none"> • Nonattainment • Nonattainment 	<ul style="list-style-type: none"> • Not Applicable • Nonattainment (Extreme)
Carbon monoxide (Lake Tahoe only)	<ul style="list-style-type: none"> • 8 hours • 1 hour • 8 hours 	<ul style="list-style-type: none"> • 9.0 parts per million • 20 parts per million • 6 parts per million 	<ul style="list-style-type: none"> • 9 parts per million • 35 parts per million • Not Applicable 	Carbon monoxide interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. Carbon monoxide also is a minor precursor for photochemical ozone. Colorless, odorless.	Combustion sources, especially gasoline-powered engines and motor vehicles. Carbon monoxide is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.	Attainment	Attainment
Nitrogen dioxide	<ul style="list-style-type: none"> • Annual • 1 hour 	<ul style="list-style-type: none"> • 0.030 parts per million • 0.18 parts per million 	<ul style="list-style-type: none"> • 0.053 parts per million • 0.100 parts per million 	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain & nitrate contamination of stormwater. Part of the “nitrogen oxides” group of ozone precursors.	Motor vehicles and other mobile or portable engines, especially diesel; refineries; industrial operations.	Attainment	Attainment

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Pollutant	Average Time	California Standard	National Standard	Principal Health and Atmospheric Effects	Typical Sources	California Attainment Status	Federal Attainment Status
Sulfur dioxide	<ul style="list-style-type: none"> • Annual • 24 hours • 1 hour 	<ul style="list-style-type: none"> • Not Applicable • 0.04 parts per million • 0.25 parts per million 	<ul style="list-style-type: none"> • 0.030 parts per million • 0.14 parts per million • 75 parts per million 	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing; some natural sources like active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel not used.	Attainment	Attainment
Hydrogen sulfide	<ul style="list-style-type: none"> • 1 hour 	<ul style="list-style-type: none"> • 0.03 parts per million 	<ul style="list-style-type: none"> • Not Applicable 	Colorless, flammable, poisonous. Respiratory irritant. Neurological damage and premature death. Headache, nausea. Strong odor.	Industrial processes such as: refineries and oil fields, asphalt plants, livestock operations, sewage treatment plants, and mines. Some natural sources like volcanic areas and hot springs.	Unclassified	Not Applicable
Vinyl chloride	<ul style="list-style-type: none"> • 24 hours 	<ul style="list-style-type: none"> • 0.01 parts per million 	<ul style="list-style-type: none"> • Not Applicable 	Neurological effects, liver damage, cancer. Also considered a toxic air contaminant.	Industrial processes.	Not Applicable	Not Applicable
Respirable Particulate Matter	<ul style="list-style-type: none"> • Annual • 24 hours 	<ul style="list-style-type: none"> • 20 micrograms per cubic meter • 50 micrograms per cubic meter 	<ul style="list-style-type: none"> • Not Applicable • 150 micrograms per cubic meter 	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many toxic & other aerosol and solid compounds are part of respirable particulate matter.	Dust- and fume-producing industrial and agricultural operations; combustion smoke & vehicle exhaust; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources.	Nonattainment	Nonattainment (Moderate)

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Pollutant	Average Time	California Standard	National Standard	Principal Health and Atmospheric Effects	Typical Sources	California Attainment Status	Federal Attainment Status
Fine Particulate Matter	<ul style="list-style-type: none"> • Annual • 24 hours 	<ul style="list-style-type: none"> • 12 micrograms per cubic meter • Not Applicable 	<ul style="list-style-type: none"> • 12.0 micrograms per cubic meter • 35 micrograms per cubic meter 	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter – a toxic air contaminant – is in the fine particulate matter size range. Many toxic & other aerosol and solid compounds are part of fine particulate matter.	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical and photochemical reactions involving other pollutants including nitrogen oxides, sulfur oxides, ammonia, and reactive organic gases.	Nonattainment	Nonattainment (Serious)
Sulfates	<ul style="list-style-type: none"> • 24 hours 	<ul style="list-style-type: none"> • 25 micrograms per cubic meter 	<ul style="list-style-type: none"> • Not Applicable 	Premature mortality and respiratory effects. Contributes to acid rain. Some toxic air contaminants attach to sulfate aerosol particles.	Industrial processes, refineries and oil fields, mines, natural sources like volcanic areas, salt-covered dry lakes, and large sulfide rock areas.	Attainment	Not Applicable
Visibility Reducing Particles	<ul style="list-style-type: none"> • 8 hours 	<ul style="list-style-type: none"> • Visibility of 10 miles or more 	<ul style="list-style-type: none"> • Not Applicable 	Reduces visibility. Produces haze.	See particulate matter above. May be related more to aerosols than to solid particles.	Unclassified	Not Applicable
Lead	<ul style="list-style-type: none"> • Calendar quarter • 30-day average • Rolling 3-month average 	<ul style="list-style-type: none"> • Not Applicable • 1.5 micrograms per cubic meter • Not Applicable 	<ul style="list-style-type: none"> • 1.5 micrograms per cubic meter • Not Applicable • 0.15 micrograms per cubic meter 	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also a toxic air contaminant and water pollutant.	Lead-based industrial processes like battery production and smelters. Lead paint, leaded gasoline. Aerially deposited lead from older gasoline use may exist in soils along major roads.	Attainment	Attainment

Notes: All standards are based on measurements at 25 degrees Celsius and 1 atmosphere pressure; national standards shown are the primary (health effects) standards

Table 2.2.5-2. Status of State Implementation Plans Relevant to the Project Area

Name	Status
Ozone	Adopted June 2016
Suspended Particulate Matter	Adopted September 2007
Fine Particulate Matter	Adopted November 2018
Carbon Monoxide	Not Applicable
Nitrogen Dioxide	Not Applicable
Sulfur dioxide	Not Applicable
Lead	Not Applicable

Source: Caltrans 2019.

Table 2.2.5-3. Air Quality Concentrations for the Past 3 Years Measured at the Tracy-Airport (Air Resources Board #39271) and Stockton-Hazelton Street (Air Resources Board # 39252) Monitoring Stations

Pollutant	Standard	2015	2016	2017
<i>Ozone</i>				
Max 1-hour concentration		0.107	0.109	0.093
No. days exceeded: • State • Federal	• 0.09 parts per million • Not Applicable	• 4 • Not Applicable	• 4 • Not Applicable	• 0 • Not Applicable
Max 8-hour concentration		0.091	0.092	0.082
No. days exceeded: • State • Federal	• 0.070 parts per million • 0.070 parts per million	• 21 • 19	• 19 • 19	• 7 • 5
<i>Carbon Monoxide</i>				
Max 1-hour concentration		2.3	1.7	2.3
No. days exceeded: • State • Federal	• 20 parts per million • 35 parts per million	• 0 • 0	• 0 • 0	• 0 • 0
Max 8-hour concentration		1.5	1.3	1.9
No. days exceeded: • State • Federal	• 9.0 parts per million • 9 parts per million	• 0 • 0	• 0 • 0	• 0 • 0

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Pollutant	Standard	2015	2016	2017
<i>Suspended Particulate Matter</i>				
Max 24-hour concentration		55.3	66.5	92.6
No. days exceeded: • State • Federal	<ul style="list-style-type: none"> • 50 micrograms per cubic meter • 150 micrograms per cubic meter 	<ul style="list-style-type: none"> • 4 • 0 	<ul style="list-style-type: none"> • 5 • 0 	<ul style="list-style-type: none"> • 7 • 0
Max annual concentration		32	28	29
Exceeded: State	<ul style="list-style-type: none"> • 20 micrograms per cubic meter 	• Yes	• Yes	• Yes
<i>Fine Particulate Matter</i>				
Max 24-hour concentration		58.8	43.7	53.7
No. days exceeded: • Federal	<ul style="list-style-type: none"> • 35 micrograms per cubic meter 	<ul style="list-style-type: none"> • 12 	<ul style="list-style-type: none"> • 4 	<ul style="list-style-type: none"> • 16
Max annual concentration		12.7	11.8	12.0
Exceeded: • State • Federal	<ul style="list-style-type: none"> • 12 micrograms per cubic meter • 12.0 micrograms per cubic meter 	<ul style="list-style-type: none"> • Yes • Yes 	<ul style="list-style-type: none"> • Yes • Yes 	<ul style="list-style-type: none"> • Yes • Yes
<i>Nitrogen Dioxide</i>				
Max 1-hour concentration		35 parts per billion	28 parts per billion	40.5 parts per billion
No. days exceeded: • State • Federal	<ul style="list-style-type: none"> • 0.18 parts per million • 100 parts per billion 	<ul style="list-style-type: none"> • 0 • 0 	<ul style="list-style-type: none"> • 0 • 0 	<ul style="list-style-type: none"> • 0 • 0
Max annual concentration		6 parts per billion	5 parts per billion	5 parts per billion
Exceeded: • State • Federal	<ul style="list-style-type: none"> • 0.030 parts per million • 53 parts per billion 	<ul style="list-style-type: none"> • No • No 	<ul style="list-style-type: none"> • No • No 	<ul style="list-style-type: none"> • No • No

Source: Caltrans 2019.

Sensitive Receptors

Sensitive receptors are facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of sensitive receptors include residences, recreational facilities, schools (including daycares), hospitals, and religious facilities. There are various rural residents adjacent to Manthey Road, the closest of which is within 200 feet of the right-of-way. The Mossdale County Park and Dell'Osso Farms are also adjacent to the roadway.

Environmental Consequences

Regional Conformity

The proposed project is listed in the San Joaquin Council of Government's financially constrained 2018 Regional Transportation Plan/ Sustainable Communities Strategy, which was adopted by San Joaquin Council of Governments on June 28, 2018, and Federal Highway Administration and Federal Transit Administration made a regional conformity determination finding on December 3, 2018. The project is also included in San Joaquin Council of Government's financially constrained 2019 Federal Transportation Improvement Program. San Joaquin Council of Government's 2019 Transportation Improvement Program was determined to conform by Federal Highway Administration and Federal Transit Administration on December 3, 2018. The design concept and scope of the proposed project is consistent with the project description in the 2018 Regional Transportation Plans/ Sustainable Communities Strategy and 2019 Federal Transportation Improvement Program, and the open-to-traffic assumptions of the San Joaquin Council of Government's regional emissions analysis. Photocopies of relevant pages from the Regional Transportation Plan/ Sustainable Communities Strategy and Federal Transportation Improvement Program are included in Appendix B of the Air Quality Technical Report.

Project Level Conformity

Carbon Monoxide

As shown in Table 2.2.5-1, the proposed project is in an attainment area for carbon monoxide. Therefore, no project-level conformity analysis is necessary for carbon monoxide.

Particulate Matter

As shown in Table 2.2.5-1, the proposed project is in a nonattainment area for fine particulate matter and particles of suspended particulate matter. However, it is not considered a project of air quality concern for fine particulate matter because it does not meet the definition of a project of air quality concern as defined in United States Environmental Protection Agency's Transportation Conformity Guidance. A discussion of the proposed project compared to project of air quality concern, as defined by 40 Code of Federal Regulations 93.123(b)(1), is provided below. Based on this, particulate matter hot-spot analysis is not required.

New or expanded highway projects that have a significant number of or significant increase in diesel vehicles

The project does not involve a new or expanded highway. Maximum annual average daily traffic on roadway segments in the project area under design-year (2040) conditions would not exceed 20,000. Heavy-duty trucks represent 3.5 percent of this annual average daily traffic, resulting in a maximum truck annual average daily traffic of 700. Relative to the No-Build Alternative, implementation of the Build Alternative would reduce truck annual average daily traffic on Manthey Road north of Mossdale Village. While truck annual average daily traffic on all other segments would slightly increase, predicted truck volumes would be well below United States Environmental Protection Agency's guidance criteria of 10,000 vehicles per day (the maximum truck volume would be 700, and the maximum truck volume increase, relative to the No-Build Alternative, would be 53).

Projects affecting intersections that are at Level of Service D, E, or F with a significant number of diesel vehicles or those that will change to level of service D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project

All intersections in the project area would operate at level of service B or better under opening and design-year conditions, as indicated in the Traffic Operations Analysis Report prepared for the project in September 2014.

New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location

The project has no bus or rail terminal component, and it does not affect any bus terminals or transfer points.

Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location

The project will not expand any bus terminal, rail terminal, or related transfer point that will increase the number of diesel vehicles congregating at any single location.

Projects in or affecting locations, areas, or categories of sites that are identified in the fine particulate matter- or suspended particulate matter-applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

The project site is not in or does not affect locations, areas, or categories of sites that are identified in a suspended particulate matter or fine particulate matter implementation plan. The immediate project area is not considered to be a site of violation or possible violation.

The Build Alternative requires interagency consultation through San Joaquin Council of Government's interagency consultation process. United States Environmental Protection Agency and Federal Highway Administration issued concurrence that the

project is not a project of air quality concern on August 11, 2016, and October 3, 2016, respectively. A detailed fine particulate matter and suspended particulate matter hot-spot analysis was not completed because the Federal Clean Air Act and 40 Code of Federal Regulations 93.116 requirements are met without an explicit hot-spot analysis. Documentation of the interagency consultation is included in Appendix C of the Air Quality Report (Caltrans 2019).

Additional Environmental Analysis

Long-Term Operational Emissions

Long-term air quality impacts are those associated with motor vehicles operating on the roadway network, predominantly those operating in the project vicinity.

Emissions of reactive organic gases, nitrogen oxides, carbon monoxide, particles of 2.5 micrometers and smaller, particles of 10 micrometers or smaller, and sulfur dioxide for existing year (2013), opening year (2023), and design year (2040), with and without project conditions, were evaluated through modeling using the Caltrans EMFAC model (Version 6.0) and vehicle activity data provided by the project traffic engineer.

Table 2.2.5-4 summarizes the modeled emissions by scenario and compares emissions under the Build Alternative to emissions under No-Build and existing conditions. The differences in emissions between with- and without-project conditions represent emissions generated directly from implementing the Build Alternative. Vehicular emission rates are anticipated to lessen in future years due to continuing improvements in engine technology and the retirement of older, higher-emitting vehicles.

The emissions analysis presented in Table 2.2.5-4 indicates that operation of the Build Alternative under design year (2040) conditions would increase particles of 10 micrometers or smaller, particles of 2.5 micrometers and smaller, and sulfur dioxide emissions compared to existing conditions and would decrease reactive organic gasses, nitrogen oxides and carbon monoxide emissions. These results are primarily due to factors external to the project. The increase in particulate matter is due to background growth in vehicle miles traveled between 2013 and 2040, as particulate matter emissions are primarily a function of vehicle miles traveled. The decreases in other pollutants are due to expected improvements in vehicle engine technology, fuel efficiency, and turnover in older, more heavily polluting vehicles, which reduces exhaust emissions.

Emissions effects resulting from implementation of the Build Alternative under opening (2023) and design year (2040) conditions are obtained through a comparison of with-project emissions to without-project emissions. As shown in Table 2.2.5-4, implementation of the Build Alternative would result in no change or decreases of all criteria pollutant emissions compared to no-build conditions. This is an air quality benefit. This reduction is attributed to the overall decrease in vehicle miles traveled between with- and without-project conditions.

Table 2.2.5-4. Operational Criteria Pollutant Emissions (tons per year)

Scenario (Analysis Year)	Reactive Organic Gasses	Nitrogen Oxides	Carbon Monoxide	Suspended Particulate Matter	Fine Particulate Matter	Sulfur Dioxide
Existing year (2013)	1,246	194	746	22	11	2
Opening year (2023) No-Build Alternative	737	90	312	25	10	2
Opening year (2023) Build Alternative	731	90	310	24	10	2
Design year (2040) No-Build Alternative	694	45	313	44	18	3
Design year (2040) Build Alternative	689	44	311	44	18	3
<i>Comparison to Existing Conditions</i>						
Design year (2040) Build Alternative	-557	-150	-435	22	7	1
<i>Comparison to No-Build Conditions</i>						
Opening year (2023) Build Alternative	-6	-1	-2	<0	<0	<0
Design year (2040) Build Alternative	-5	<0	-2	<0	<0	<0

Carbon Monoxide

Caltrans' Transportation Project-Level Carbon Monoxide Protocol provides qualitative screening procedures to determine whether new roadway projects have the potential to contribute to new or worsen existing carbon monoxide violations of the ambient air quality standards. The Build Alternative was qualitatively screened using the carbon monoxide Protocol. Through this screening process, it was determined that the Build Alternative is not expected to result in a new exceedance of either the state or federal ambient air quality standard for carbon monoxide. Refer to the Air Quality Report for the detailed screening analysis (Caltrans 2019).

Particulate Matter

As described above, the Build Alternative do not meet the definition of a project of air quality concern. Accordingly, is not expected to result in a new or more severe exceedance of either the state or federal ambient air quality standard for Fine Particulate Matter or Respirable Particulate Matter.

Nitrogen Dioxide

As a surrogate for nitrogen dioxide emissions that would result from the proposed project, nitrogen oxides emissions were estimated for the existing (2013) baseline, the No-Build Alternative, and the Build Alternative for opening year (2023) and design year (2040) using project-specific traffic data, Caltrans EMFAC (Version 6.0), and California Air Resources Board's EMFAC2014 model. As shown in Table 2.2.5-4, during opening year (2023), the Build Alternative would be responsible for the net annual decrease of 0.6 ton of nitrogen oxide relative to the No-Build Alternative. At design year (2040), the Build Alternative would be responsible for the net annual

emissions decrease of 0.3 ton of nitrogen oxides, relative to the No-Build Alternative. During opening year (2023) and design year (2040), nitrogen oxides emissions for the Build Alternative and No-Build Alternative would be less than under existing (2013) conditions, due to improvements in engine emissions technologies, as well as the retirement of older vehicles.

Mobile Source Air Toxics

For Build Alternative, the amount of Mobile Source Air Toxics emitted would be proportional to vehicle miles traveled assuming that other variables such as fleet mix are the same for each alternative. The daily vehicle miles traveled estimated for the Build Alternative is slightly lower (0.8%) than that for the No-Build Alternative because of decreased travel over the bridge relative to alternative routes. This decrease in vehicle miles traveled would lead to lower Mobile Source Air Toxics emissions for Build Alternative along the corridor. Emissions will also likely be lower than present levels in the design year as a result of United States Environmental Protection Agency's national control programs that are projected to reduce annual Mobile Source Air Toxics emissions by over 90 percent between 2010 and 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, vehicle miles traveled growth rates, and local control measures. However, the magnitude of the United States Environmental Protection Agency-projected reductions is so great, even after accounting for vehicle miles traveled growth, that Mobile Source Air Toxics emissions in the study area are likely to be lower in the future in nearly all cases.

Construction (Short-term) Impacts

During construction, short-term degradation of air quality is expected from the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other activities related to construction. Emissions from construction equipment powered by gasoline and diesel engines are anticipated and would include carbon monoxide, nitrogen oxides, volatile organic compounds, directly emitted Fine Particulate Matter and particles of 10 micrometers or smaller, and toxic air contaminants, such as diesel particulate matter. Ozone is not directly emitted from construction activities; it is a regional pollutant that is formed from nitrogen oxides and volatile organic compounds in the presence of sunlight and heat.

Construction emissions were estimated using the latest Sacramento Metropolitan Air Quality Management District Road Construction Model (Version 8.1.0). While the model was developed for Sacramento conditions in terms of fleet emission factors, silt loading, and other model assumptions, it is considered adequate for estimating road construction emissions by the San Joaquin Valley Air Pollution Control District (in its guidance) and is used for that purpose in this project analysis.

Construction emissions were estimated for the Build Alternative using detailed equipment inventories and project construction scheduling information provided by the project designer. Construction-related emissions for the Build Alternative are presented in Tables 2.2.5-5. The emissions presented are based on the best

information available at the time of calculations. The emissions represent the peak annual construction emissions that would be generated by each alternative.

Table 2.2.5-5. Construction-Period Emissions Estimates (tons/year)

Construction Year	Reactive Organic Gases	Nitrogen Oxides	Carbon Monoxide	Respirable Particulate Matter	Fine Particulate Matter	Sulfur Dioxide
Year 1	0.3	3.0	2.4	7.8	1.7	<0.1
Year 2	0.8	8.3	6.7	12.3	2.8	<0.1

Source: Caltrans 2019.

Implementation of Caltrans Standard Specifications and fugitive dust control measures, as described below, under *Avoidance, Minimization, and/or Mitigation Measures*, will reduce air quality impacts resulting from construction activities. Please note that although these measures are anticipated to reduce construction-related emissions, the reductions cannot be quantified at this time.

Construction activities will not last for more than 5 years at one general location, so construction-related emissions do not need to be included in regional and project-level conformity analyses (40 Code of Federal Regulations 93.123(c)(5)).

Naturally Occurring Asbestos

According to maps prepared by the State of California and the California Department of Conservation, Division of Mines and Geology, there are no geologic features normally associated with naturally occurring asbestos (i.e., serpentine rock or ultramafic rock near fault zones) in or near the project area. Accordingly, there is no potential for impacts related to naturally occurring asbestos emissions during construction activities. However, demolition of the existing bridge would be subject to United States Environmental Protection Agency's National Emissions Standards for Hazardous Air Pollutants and California Air Resources Board's Airborne Toxic Control Measures if asbestos-containing material were used in the original bridge construction.

Lead

Lead is normally not an air quality issue for transportation projects unless the project involves disturbance of soils containing high levels of aerially deposited lead or painting or modification of structures with lead-based coatings where lead can become airborne. Due to the location of the project site above the San Joaquin River, the potential for aerially deposited lead below the existing structure is low, as sediments do not typically settle for extensive periods of time. Testing for aerially deposited lead had not been conducted at the time of preparation of this report. It is not known whether lead-based paint was used for striping previously on the existing Manthey Road Bridge. If encountered, disturbance of lead paint must meet United States Environmental Protection Agency and air district rules, pursuant to Caltrans Standard Specifications regarding air pollution control.

Valley Fever

Valley Fever is not an air pollutant, but a disease caused by inhaling *Coccidioides immitis* fungus spores. The spores are found in certain types of soil and become airborne when the soil is disturbed. San Joaquin County is the 11th most affected county by Valley Fever in the state (approximately 3 percent of hospitalizations due to Valley Fever in California in 2017 occurred in San Joaquin County).

The presence of *Coccidioides immitis* in San Joaquin County does not guarantee that construction activities would result in an increased incidence of Valley Fever. Propagation of *Coccidioides immitis* is dependent on climatic conditions, with the potential for growth and surface exposure highest following early seasonal rains and long dry spells. Although *Coccidioides immitis* spores can be released when areas are disturbed by earthmoving activities, receptors must be exposed to and inhale the spores to be at increased risk of contracting Valley Fever. Moreover, exposure to *Coccidioides immitis* does not guarantee that an individual will become ill—approximately 60 percent of people exposed to the fungal spores are asymptomatic and show no signs of an infection.

While a number of factors influence receptor exposure and development of Valley Fever, earthmoving activities during construction could release *Coccidioides immitis* spores if filaments are present and other soil chemistry and climatic conditions are conducive to spore development. Receptors within several miles of the construction area therefore may be exposed to an increased risk of inhaling *Coccidioides immitis* spores and subsequent development of Valley Fever. Dust control measures are the primary defense against infection. Implementation of the fugitive dust control plan outlined as minimization measures would avoid dusty conditions, and routine watering would reduce the risk of contracting Valley Fever.

Avoidance, Minimization, and/or Mitigation Measures

Implement California Department of Transportation Standard Specifications

The construction contractor must comply with Caltrans Standard Specifications regarding Air Quality, and Emissions Reductions (2015). Caltrans Standard Specifications regarding Air Pollution Control specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances. Caltrans Standard Specifications regarding Emissions Reductions ensures that construction activities adhere to the most recent emissions reduction regulations mandated by California Air Resources Board.

Adhere to San Joaquin Valley Air Pollution Control District Rule 9510

As required by San Joaquin Valley Air Pollution Control District Rule 9510, the City will prepare and submit an air impact assessment to the San Joaquin Valley Air Pollution Control District. The air impact assessment includes the calculation of emissions generated by the project and the emission reductions required by the provisions set forth in the rule. The air impact assessment must be submitted to the San Joaquin Valley Air Pollution Control District no later than applying for final

discretionary approval, and offsite mitigation fees, if applicable, must be paid to the San Joaquin Valley Air Pollution Control District before issuance of the first grading/building permit, whichever comes first. Required onsite emission reductions and potential offsite emission reduction fees (if necessary) will be calculated through the permitting process, as dictated by Rule 9510, to reduce construction-related nitrogen oxides emissions by 20 percent suspended particulate matter exhaust emissions by 45 percent, compared to the statewide fleet average.

Implement a Dust Control Plan

To comply with San Joaquin Valley Air Pollution Control District Regulation VIII Requirements, construction contractors will prepare and submit a dust control plan for approval by the San Joaquin Valley Air Pollution Control District at least 30 days prior to any earthmoving or construction activities. Potential measures that might be included in the dust control plan to control the generation of construction-related suspended particulate matter emissions could include the following.

- Pre-activity
 - Pre-water the work site
 - Plan work in phases to reduce the amount of surface area disturbed at any one time.
- Active operations
 - Apply water to dry areas during leveling, grading, trenching, and earthmoving activities.
 - Construct and maintain wind barriers and apply water or dust suppressants to the disturbed surface areas.
- Inactive operations, including after work hours, weekends, and holidays
 - Apply water or dust suppressants on disturbed surface areas to form a visible crust and restrict vehicle access to maintain the visible crust.
- Temporary stabilization of areas that remain unused for 7 or more days
 - Restrict vehicular access and apply and maintain water or dust suppressants on all unvegetated areas.
 - Establish vegetation on all previously disturbed areas.
 - Apply and maintain gravel at all previously disturbed areas.
 - Pave previously disturbed areas.
- Unpaved access and haul roads, traffic, and equipment storage areas
 - Apply water or dust suppressants to unpaved haul and access roads.
 - Post a speed limit of not more than 15 miles per hour; place signs at each entrance and again every 500 feet.
 - Apply water or dust suppressants to vehicle traffic and equipment storage areas.

- Wind events
 - Apply water to control fugitive dust during wind events, unless unsafe to do so, using water-application equipment.
 - Cease activities that disturb the soil whenever visible dust emissions cannot be effectively controlled.
- Outdoor handling and storage of bulk materials
 - Apply water or dust suppressants to storage piles.
 - Cover storage piles with tarps, plastic, or other suitable material and anchor the piles in a manner that prevents the cover from being removed by wind action.
 - Install and maintain wind barriers with less than 50 percent porosity around the storage piles and apply water or dust suppressants.
 - Use a three-sided structure with less than 50 percent porosity that is at least as high as the storage piles.
- Onsite transport of bulk materials
 - Limit vehicle speed on the work site to 15 miles per hour.
 - Load all haul trucks such that the freeboard is not less than 6 inches when transported across any paved public access road.
 - Apply a sufficient amount of water to the top of the load to limit visible dust emissions.
 - Cover haul trucks with a tarp or other suitable cover.
- Offsite transport of bulk materials
 - Clean or cover the interior of emptied truck cargo compartments before leaving the site.
 - Prevent spillage or loss of bulk materials from holes or other openings in the cargo compartment's floor, sides, and tailgates.
- Outdoor transport using a chute or conveyor
 - No open chutes or conveyors.
 - Fully enclose all chutes or conveyors.
 - Use water spray equipment to sufficiently wet the materials.
 - Wash or screen transported materials to remove fine particulates (particles of 10 micrometers or smaller).

Climate Change

Neither United States Environmental Protection Agency nor the Federal Highway Administration has issued explicit guidance or methods to conduct project-level greenhouse gas analysis. The Federal Highway Administration emphasizes concepts of resilience and sustainability in highway planning, project development,

design, operations, and maintenance. Because there have been requirements set forth in California legislation and executive orders on climate change, the issue is addressed in Chapter 3, *CEQA Evaluation*, of this document. The CEQA analysis may be used to inform the NEPA determination for the project.

2.2.6 Noise and Vibration

Regulatory Setting

NEPA and CEQA provide the broad basis for analyzing and abating highway-traffic noise effects. The intent of these laws is to promote the general welfare and foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between NEPA and CEQA.

California Environmental Quality Act

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

National Environmental Policy Act and 23 Code of Federal Regulations 772

For highway transportation projects with Federal Highway Administration (and Caltrans, as assigned) involvement, the federal-Aid Highway Act of 1970 and the associated implementing regulations (23 Code of Federal Regulations 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations include noise abatement criteria that are used to determine when a noise impact would occur. The noise abatement criteria differ depending on the type of land use under analysis. For example, the noise abatement criteria for residences (67 A-weighted decibels) is lower than the noise abatement criteria for commercial areas (72 A-weighted decibels). The following table lists the noise abatement criteria for use in the NEPA 23 Code of Federal Regulations 772 analysis.

Table 2.2.6-1. Noise Abatement Criteria

Activity Category	Noise Abatement Criteria, Hourly A-Weighted Noise Level, $L_{eq}(h)$	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B ^a	67 (Exterior)	Residential.
C ^a	67 (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A–D or F.
F	No noise abatement criteria — reporting only	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical, etc.), and warehousing.
G	No noise abatement criteria — reporting only	Undeveloped lands that are not permitted.

^a Includes undeveloped lands permitted for this activity category.

Figure 2.2.6-1 lists the noise levels of common activities to enable readers to compare the actual and predicted highway noise levels discussed in this section with common activities.

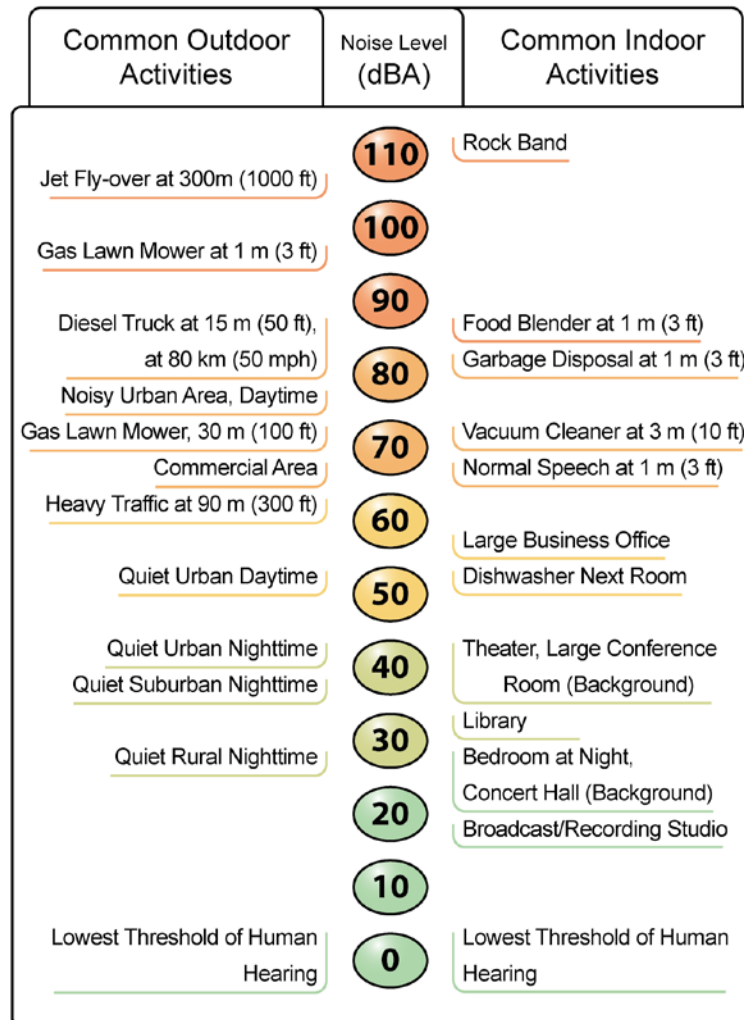


Figure 2.2.6-1 Noise Levels of Common Activities

According to the Caltrans' Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, May 2011, a noise impact occurs when the predicted future noise level associated with the project substantially exceeds the existing noise level (defined as a 12 A-weighted decibels or more increase) or when the future noise level with the project approaches or exceeds the noise abatement criteria. Approaching the noise abatement criteria is defined as coming within 1 A-weighted decibels of the noise abatement criteria.

If it is determined that the project will have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications.

Caltrans' Traffic Noise Analysis Protocol sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. A minimum 7 A-weighted decibels reduction in the

future noise level must be achieved for an abatement measure to be considered feasible. Other considerations include topography, access requirements, other noise sources, and safety considerations. The reasonableness determination is basically a cost-benefit analysis. Factors used in determining whether a proposed noise abatement measure is reasonable include: residents' acceptance and the cost per benefited residence.

Affected Environment

The following analysis is based on the November 2017 Noise Study Report for the project.

A field investigation was conducted to identify land uses that could be subject to traffic and construction noise impacts resulting from the proposed project. Single-family residences were identified as Activity Category B land uses in the project area. Outdoor recreational uses and parks were identified as Activity Category C land uses. A review of the City's most recent development plans for the study area indicated that no permits have been issued for undeveloped land within the environmental study area. As such, undeveloped areas are evaluated as Activity Category G use areas. Commercial (Activity Category F) and undeveloped (Activity Category G) land uses do not have Noise Abatement Criteria.

Traffic noise from I-5 and State Route 120 contribute significantly to ambient noise levels in the study area.

Although all land uses were evaluated in this analysis, as required by the Protocol, noise abatement was considered only for areas of frequent human use that would benefit from a lower noise level. Modeled noise receivers are shown in Figure 2.2.6-2.



Environmental Consequences

Build Alternative

Operational Noise

Federal Highway Administration defines a Type I project as a proposed federal or federal-aid highway project for the construction of a highway on a new location or the physical alteration of an existing highway that significantly changes either the horizontal or vertical alignment of the highway. The proposed project is considered to be a Type I project because it involves the construction of a roadway in a new location.

Traffic noise modeling results for existing and design year conditions under the preferred alternative are shown in Table 2.2.6-2. Predicted worst-case traffic noise levels for both design-year no-build and design year build conditions were found to have a range of values between 56 to 77 A-weighted decibels hourly equivalent sound level. As described above, commercial uses and open space areas do not include areas of outdoor frequent human use and are therefore not considered noise-sensitive.

Table 2.2.6-2. Impact Assessment and Predicted Noise Levels, Preferred Alternative

Receiver I.D.	Land Use (Activity Category)	Location	Existing Noise Level, hourly equivalent sound level, A-weighted decibels	Design Year Noise Level without Project, hourly equivalent sound level, A-weighted decibels	Design Year Noise Level with Project, hourly equivalent sound level, A-weighted decibels	Design Year Noise Level without Project minus Existing Conditions hourly equivalent sound level, A-weighted decibels	Design Year Noise Level with Project minus No Project Conditions hourly equivalent sound level, A-weighted decibels	Design Year Noise Level with Project minus Existing Conditions hourly equivalent sound level, A-weighted decibels	Impact Type (None, or Future noise conditions approach or exceed the Noise Abatement Criteria)
R01	Residential (B)	Brookhurst Boulevard subdivision	57	58	63	+1	+5	+6	None
R02	Residential (B)	Brookhurst Boulevard subdivision	57	59	59	+2	0	+2	None
R03	Residential (B)	Brookhurst Boulevard subdivision	61	62	64	+1	+2	+3	None
R04	Residential (B)	Brookhurst Boulevard subdivision	58	60	62	+2	+2	+4	None
R05	Residential (B)	Brookhurst Boulevard subdivision	58	60	62	+2	+2	+4	None
R06	Residential (B)	Brookhurst Boulevard subdivision	62	63	64	+1	+1	+2	None

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Receiver I.D.	Land Use (Activity Category)	Location	Existing Noise Level, hourly equivalent sound level, A-weighted decibels	Design Year Noise Level without Project, hourly equivalent sound level, A-weighted decibels	Design Year Noise Level with Project, hourly equivalent sound level, A-weighted decibels	Design Year Noise Level without Project minus Existing Conditions hourly equivalent sound level, A-weighted decibels	Design Year Noise Level with Project minus No Project Conditions hourly equivalent sound level, A-weighted decibels	Design Year Noise Level with Project minus Existing Conditions hourly equivalent sound level, A-weighted decibels	Impact Type (None, or Future noise conditions approach or exceed the Noise Abatement Criteria)
R07	Residential (B)	Brookhurst Boulevard subdivision	61	63	63	+2	0	+2	None
R08	Residential (B)	Brookhurst Boulevard subdivision	60	61	62	+1	+1	+2	None
R09	Residential (B)	Brookhurst Boulevard subdivision	59	60	60	+1	0	+1	None
R10	Residential (B)	Brookhurst Boulevard subdivision	61	63	63	+2	0	+2	None
R11	Residential (B)	Brookhurst Boulevard subdivision	58	59	60	+1	+1	+2	None
R12	Residential (B)	River Islands future subdivision	55	56	56	+1	0	+1	None
R13	Residential (B)	River Islands future subdivision	57	58	58	+1	0	+1	None
R14	Commercial (F)	Dell'Osso Family Farm	67	69	69	+2	0	+2	None
R15-ST-1	Commercial (F)	Dell'Osso Family Farm	65	66	67	+1	+1	+2	None
R16	Park (C)	Mossdale County Park	65	66	69	+1	+3	+4	Future noise conditions approach or exceed the Noise Abatement Criteria
R17	Park (C)	Mossdale County Park	64	65	66	+1	+1	+2	Future noise conditions approach or exceed the Noise Abatement Criteria
R18-ST-2	Park (C)	Mossdale County Park	66	67	68	+1	+1	+2	Future noise conditions approach or exceed the Noise Abatement Criteria

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Receiver I.D.	Land Use (Activity Category)	Location	Existing Noise Level, hourly equivalent sound level, A-weighted decibels	Design Year Noise Level without Project, hourly equivalent sound level, A-weighted decibels	Design Year Noise Level with Project, hourly equivalent sound level, A-weighted decibels	Design Year Noise Level without Project minus Existing Conditions hourly equivalent sound level, A-weighted decibels	Design Year Noise Level with Project minus No Project Conditions hourly equivalent sound level, A-weighted decibels	Design Year Noise Level with Project minus Existing Conditions hourly equivalent sound level, A-weighted decibels	Impact Type (None, or Future noise conditions approach or exceed the Noise Abatement Criteria)
R19	Undeveloped (G)	Golden Valley Parkway	64	66	66	+2	0	+2	None
R20	Undeveloped (G)	Golden Valley Parkway	64	65	66	+1	+1	+2	None
R21	Residential (B)	Manthey Road	67	69	68	+2	-1	+1	Future noise conditions approach or exceed the Noise Abatement Criteria
R22	Residential (B)	Manthey Road	69	71	71	+2	0	+2	Future noise conditions approach or exceed the Noise Abatement Criteria
R23	Residential (B)	Manthey Road	67	68	68	+1	0	+1	Future noise conditions approach or exceed the Noise Abatement Criteria
R24-LT-1	Residential (B)	Manthey Road	68	69	69	+1	0	+1	Future noise conditions approach or exceed the Noise Abatement Criteria
R25	Residential (B)	Manthey Road	66	68	68	+2	0	+2	Future noise conditions approach or exceed the Noise Abatement Criteria
R26	Residential (B)	Manthey Road	69	70	70	+1	0	+1	Future noise conditions approach or exceed the Noise Abatement Criteria

*Chapter 2 • Affected Environment, Environmental Consequences,
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Receiver I.D.	Land Use (Activity Category)	Location	Existing Noise Level, hourly equivalent sound level, A-weighted decibels	Design Year Noise Level without Project, hourly equivalent sound level, A-weighted decibels	Design Year Noise Level with Project, hourly equivalent sound level, A-weighted decibels	Design Year Noise Level without Project minus Existing Conditions hourly equivalent sound level, A-weighted decibels	Design Year Noise Level with Project minus No Project Conditions hourly equivalent sound level, A-weighted decibels	Design Year Noise Level with Project minus Existing Conditions hourly equivalent sound level, A-weighted decibels	Impact Type (None, or Future noise conditions approach or exceed the Noise Abatement Criteria)
R27	Residential (B)	Manthey Road	68	69	69	+1	0	+1	Future noise conditions approach or exceed the Noise Abatement Criteria
R28	Residential (B)	Manthey Road	65	67	68	+2	+1	+3	Future noise conditions approach or exceed the Noise Abatement Criteria
R29-ST-3	Residential (B)	Manthey Road	69	71	71	+2	0	+2	Future noise conditions approach or exceed the Noise Abatement Criteria
R30	Residential (B)	Manthey Road	66	67	67	+1	0	+1	Future noise conditions approach or exceed the Noise Abatement Criteria
R31	Residential (B)	Manthey Road	70	72	72	+2	0	+2	Future noise conditions approach or exceed the Noise Abatement Criteria
R32	Residential (B)	Manthey Road	68	69	69	+1	0	+1	Future noise conditions approach or exceed the Noise Abatement Criteria
R33	Residential (B)	Manthey Road	76	77	77	+1	0	+1	Future noise conditions approach or exceed the Noise Abatement Criteria

*Chapter 2 • Affected Environment, Environmental Consequences,
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Receiver I.D.	Land Use (Activity Category)	Location	Existing Noise Level, hourly equivalent sound level, A-weighted decibels	Design Year Noise Level without Project, hourly equivalent sound level, A-weighted decibels	Design Year Noise Level with Project, hourly equivalent sound level, A-weighted decibels	Design Year Noise Level without Project minus Existing Conditions hourly equivalent sound level, A-weighted decibels	Design Year Noise Level with Project minus No Project Conditions hourly equivalent sound level, A-weighted decibels	Design Year Noise Level with Project minus Existing Conditions hourly equivalent sound level, A-weighted decibels	Impact Type (None, or Future noise conditions approach or exceed the Noise Abatement Criteria)
R34-ST-4	Undeveloped (G)	Sadler Oak Road	64	66	68	+2	+2	+4	None
R35	Residential (B)	Sadler Oak Road subdivision	60	61	62	+1	+1	+2	None
R36	Residential (B)	Sadler Oak Road subdivision	61	63	63	+2	0	+2	None
R37	Residential (B)	Sadler Oak Road subdivision	62	63	64	+1	+1	+2	None
R38	Residential (B)	Sadler Oak Road subdivision	61	62	63	+1	+1	+2	None
R39	Residential (B)	Sadler Oak Road subdivision	61	62	63	+1	+1	+2	None
R40	Residential (B)	Sadler Oak Road subdivision	61	62	63	+1	+1	+2	None
R41	Residential (B)	Sadler Oak Road subdivision	61	63	64	+2	+1	+3	None
R42	Residential (B)	Sadler Oak Road subdivision	60	61	62	+1	+1	+2	None
R43	Residential (B)	Sadler Oak Road subdivision	60	62	62	+2	0	+2	None
R44	Residential (B)	Sadler Oak Road subdivision	60	62	62	+2	0	+2	None
R45	Residential (B)	Sadler Oak Road subdivision	62	64	64	+2	0	+2	None
R46	Residential (B)	Sadler Oak Road subdivision	60	61	62	+1	+1	+2	None

Traffic noise levels would approach or exceed the noise abatement criteria for Activity Category B and Activity Category C land uses at 16 receiver locations.

Traffic noise levels are predicted to increase at receiver locations by a maximum of 6 decibels under the design-year build conditions. The 6 decibels increase does not exceed the noise impact threshold of 12 decibels. However, because traffic noise levels are predicted to exceed the noise abatement criteria for noise sensitive land uses under the proposed project, adverse noise impacts are predicted to occur, and therefore noise abatement must be considered.

Operational Vibration

Rubber tired vehicles are not a significant source of groundborne vibration. There would be no impact due to vibration from operation of the project.

Construction Noise

During construction of the project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction.

Two types of short-term noise impacts would occur during project construction. The first type would be from construction crew commutes and the transport of construction equipment and materials to the project site, which would incrementally raise noise levels on access roads leading to the site. The pieces of heavy equipment for grading and construction activities would be moved onsite, where they would remain for the duration of each construction phase and would not add to the daily traffic volume in the project vicinity. A high single-event noise exposure potential at a maximum level of 87 A-weighted decibels maximum sound levels from trucks passing at 50 feet would exist. However, the projected construction traffic would be minimal when compared to existing traffic volumes on other affected streets, and the associated long-term noise level change would not be perceptible. Therefore, construction-related worker commutes and equipment transport noise impacts would be short-term and would not be adverse.

The second type of short-term noise impact would be from construction activities. Construction is performed in distinct steps, each of which has its own mix of equipment and consequently its own noise characteristics. These various sequential phases would change the character of the noise generated and the noise levels along the project alignment as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase.

Typical noise levels at a receiver distance of 50 feet from an active construction area may be up to 91 A-weighted decibels maximum sound levels during the noisiest road construction phases. The site preparation phase, which includes grading and paving, tends to generate the highest noise levels because the noisiest construction equipment is earthmoving equipment. Earthmoving and compacting equipment includes machinery such as bulldozers, front loaders, compactors, scrapers, and graders. Typical operating cycles for earthmoving equipment may involve 1 or 2 minutes of full-power operation followed by 3 or 4 minutes at lower power settings.

Construction of the new bridge would require the use of pile drivers in addition to other heavy earthmoving equipment. Pile driving generates noise levels of up to 96 A-weighted decibels maximum sound levels at 50 feet.

Construction noise would be short-term, intermittent, and would cease once work is complete. No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with provisions in the *Noise Control* section of the Caltrans Standard Specifications and applicable local noise standards. Although not required, implementing the following measures would minimize the temporary noise impacts from construction.

- All equipment will have sound-control devices that are no less effective than those provided on the original equipment. No equipment will have an unmuffled exhaust.
- As directed by the City, the contractor will implement appropriate additional noise mitigation measures, including changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, and installing acoustic barriers around stationary construction noise sources.

Accordingly, no adverse impacts from construction of the project would be expected.

Construction Vibration

Construction of Golden Valley Parkway may result in the operation of heavy equipment in close proximity to residential properties, especially in the Sadler Oak subdivision. Vibration from construction could intermittently be noticeable inside of buildings.

Construction of the new bridge would require the use of pile drivers in addition to other heavy earthmoving equipment, however the residence nearest to the bridge construction area would be about 250 feet away. At this distance vibration from pile driving is unlikely to be noticeable.

Use of heavy construction equipment would be temporary and cease once construction is complete. The types of equipment scheduled for use in the work areas adjacent to residential areas (i.e. dozers, scrapers, rollers) would produce a level of vibration that may be intermittently noticeable, but since construction would be done during daytime hours, vibration from construction is not expected to result in a negative community reaction. The level of groundborne vibration would not exceed thresholds for building damage. Therefore, no adverse impacts would be expected.

No-Build Alternative

Under the No-Build Alternative, no noise effects related to the project, resulting from traffic or construction, would occur.

Avoidance, Minimization, and/or Noise Abatement Measures

An acoustical analysis was conducted for Noise Barrier A, which would extend along the northbound side edge-of-shoulder of the proposed alignment of Golden Valley Parkway under the build alternative. The location of the barrier as evaluated in the noise model is shown in Figure 2.2.6-2. The barrier was modeled at a length of approximately 3,000 feet, extending from Stewart Road to Sadler Oak Road.

Under design-year conditions, freeway traffic on I-5 would contribute significantly to ambient noise levels in the study area. Neither I-5 nor State Route 120 are included in improvements for the Manthey Road Bridge Replacement Project. Traffic noise from State Route 120 also contributes significantly to ambient noise levels south of the railroad tracks at Mossdale County Park. At residences where future noise levels approach or exceed the Noise Abatement Criteria for Activity Category B use, the predicted increase in traffic noise levels due to the project would range from -1 to +2 decibels, relative to future no project conditions (R-21 through R-32 in Table 2.2.6-2). For park use, there would be an increase of 3 decibels at one location in Mossdale County Park.

Noise from traffic on I-5 and State Route 120 is the dominant source of noise in the study area, but noise levels from these freeways would not be reduced by Noise Barrier A. While Noise Barrier A would be located to address noise resulting from the proposed project, the barrier would have no effect on noise from I-5 and State Route 120. At a height of 20 feet, Noise Barrier A would provide a maximum of 2 decibels of noise reduction, which is lower than the minimum noise reduction requirement of 5 decibels for noise barriers. Therefore, Noise Barrier A is not considered to be feasible.

Noise abatement measures for operation of the proposed project were found not to be feasible. However, the increase in traffic noise under future project conditions compared to future no project conditions would be less than 3 decibels at residences, and a maximum of 3 decibels in Mossdale County Park. An increase of this magnitude would generally not be noticeable. Therefore, though there would be an increase in noise levels, there would be no adverse effect.

No adverse noise impacts are predicted to occur during construction of the proposed project. Therefore, noise abatement measures were not evaluated further in this analysis.

2.3 Biological Environment

2.3.1 Natural Communities

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

Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value.

Under California Fish and Game Code Sections 1600–1616, the California Department of Fish and Wildlife regulates activities that would interfere with the natural flow of—or substantially alter the channel, bed, or bank of—a lake, river, or stream, including disturbance of riparian vegetation. The California Department of Fish and Wildlife requires a Lake and Streambed Alteration Agreement for these activities. Requirements to protect the integrity of biological resources and water quality are often conditions of streambed alteration agreements. California Department of Fish and Wildlife may establish conditions that include avoiding or minimizing vegetation removal, implementing standard erosion control measures, limiting use of heavy equipment, limiting work periods to avoid impacts on fisheries and wildlife resources, and requiring restoration of degraded sites or compensation for permanent habitat losses. Aquatic resources (e.g., streams and ponds) that are regulated by California Department of Fish and Wildlife are present in the biological study area. The proposed project would result in modification of the bed, bank, or channel of the San Joaquin River; therefore, a Lake and Streambed Alteration Agreement will be required.

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed below in Section 2.3.4 *Threatened and Endangered Species*. Wetlands and other waters are also discussed below in Section 2.3.1, *Natural Communities*.

Affected Environment

This section is informed by the Natural Environmental Study completed for this project in December 2018 and updated in March 2020. The natural communities of special concern in the biological study area are riparian woodland/riparian scrub, tidal perennial drainage, and seasonal emergent wetland (discussed in Section 2.3.2, *Wetlands and Other Waters*) (Figure 2.3.1-1).

In the biological study area, riparian woodland occurs along the east bank of the San Joaquin River, the west bank south of the railroad bridge, and at the base of the railroad embankment west of Stewart Road. Riparian scrub occurs along the west bank of the river north of the railroad bridge. Most of both riverbanks are covered with riprap. Riparian scrub along the west riverbank grows in the riprap and is primarily weedy herbaceous species, with scattered cottonwood, oak, and willow saplings.

The riparian woodland overstory at the base of the railroad embankment west of Stewart Road is predominantly valley oak, with tree-of-heaven saplings. The understory is a mix of annual grasses and forbs, including beardless wild rye, poison hemlock, and milk thistle.

The river and riparian habitat within the study area provide connectivity between habitats for special-status wildlife downstream and upstream of the study area,

including western pond turtle, riparian brush rabbit, and several special-status and non-special-status migratory birds.

Environmental Consequences

Build Alternative

Implementation of the Build Alternative would require trimming and removing of riparian habitat during removal of the existing bridge structure and construction of the new bridge, temporary access roads, and roadway approaches.

The Build Alternative would result in permanent impacts on up to 0.07 acre of riparian woodland and 0.07 acre of riparian scrub within the area designated as the limits of disturbance. Temporary disturbance of an additional 0.08 acre of riparian woodland and 0.09 acre of riparian scrub would occur during construction for equipment access.

State and federal regulations would require avoidance, minimization, and compensatory mitigation for the loss of riparian habitat. The loss or disturbance of riparian forest vegetation is considered adverse because it provides a variety of important ecological functions and values. California Department of Fish and Wildlife will require a Lake and Streambed Alteration Agreement for construction within the riparian habitat.

The Build Alternative would create an additional barrier to wildlife movement along both banks of the San Joaquin River for terrestrial species; however, considering current conditions both in the study area and areas up and downstream of the project area the banks of the San Joaquin River do not provide a dense, contiguous riparian corridor for the movement of terrestrial amphibians, reptiles, and mammals. There currently exists obstacles downstream of the project site, which include the existing Manthey Bridge and the I-5 bridge. Birds will have less vegetation to use along the river, but their movement would not be substantially impeded.

Implementation of the measures described under Avoidance, Minimization, and/or Mitigation Measures below would compensate for temporary and permanent loss of riparian habitat, minimize impacts on tidal perennial drainage habitat, and avoid impacts on the seasonal emergent wetland habitat located near the construction area. Compensation would be based on the Unified Land Development Code restrictions regarding planting on levees. Because the Build Alternative would result in a net gain of riverbed area after removal of the existing bridge piers, no compensatory mitigation would be required.

No-Build Alternative

Under the No Build Alternative, the existing Manthey Road Bridge would remain in its current location and no construction would occur. As such, there would be no effects to natural communities.



Figure 2.3.1-1 Biological Study Area—Sheet 1 of 4



Figure 2.3.1-1 Biological Study Area—Sheet 2 of 4

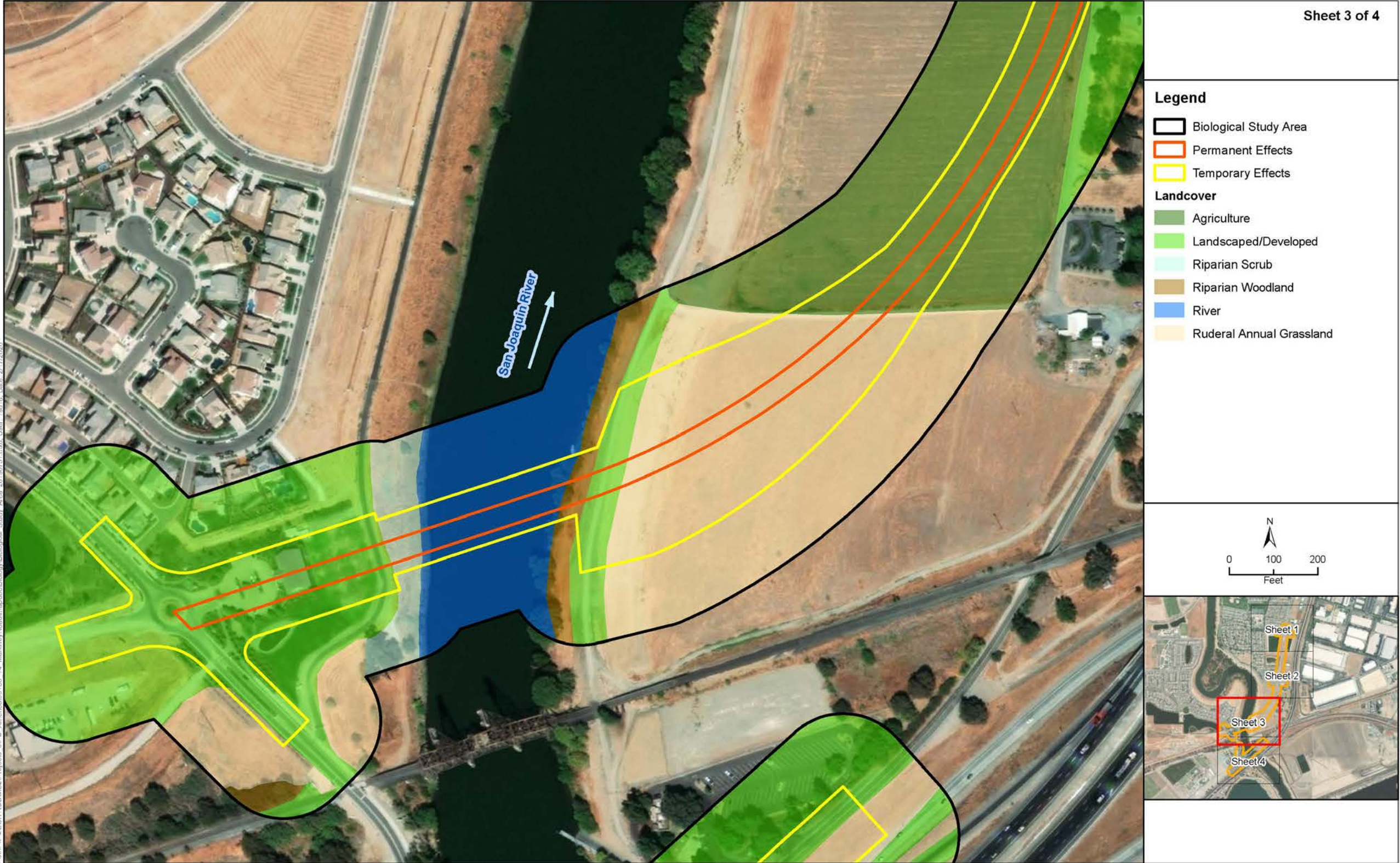


Figure 2.3.1-1 Biological Study Area—Sheet 3 of 4

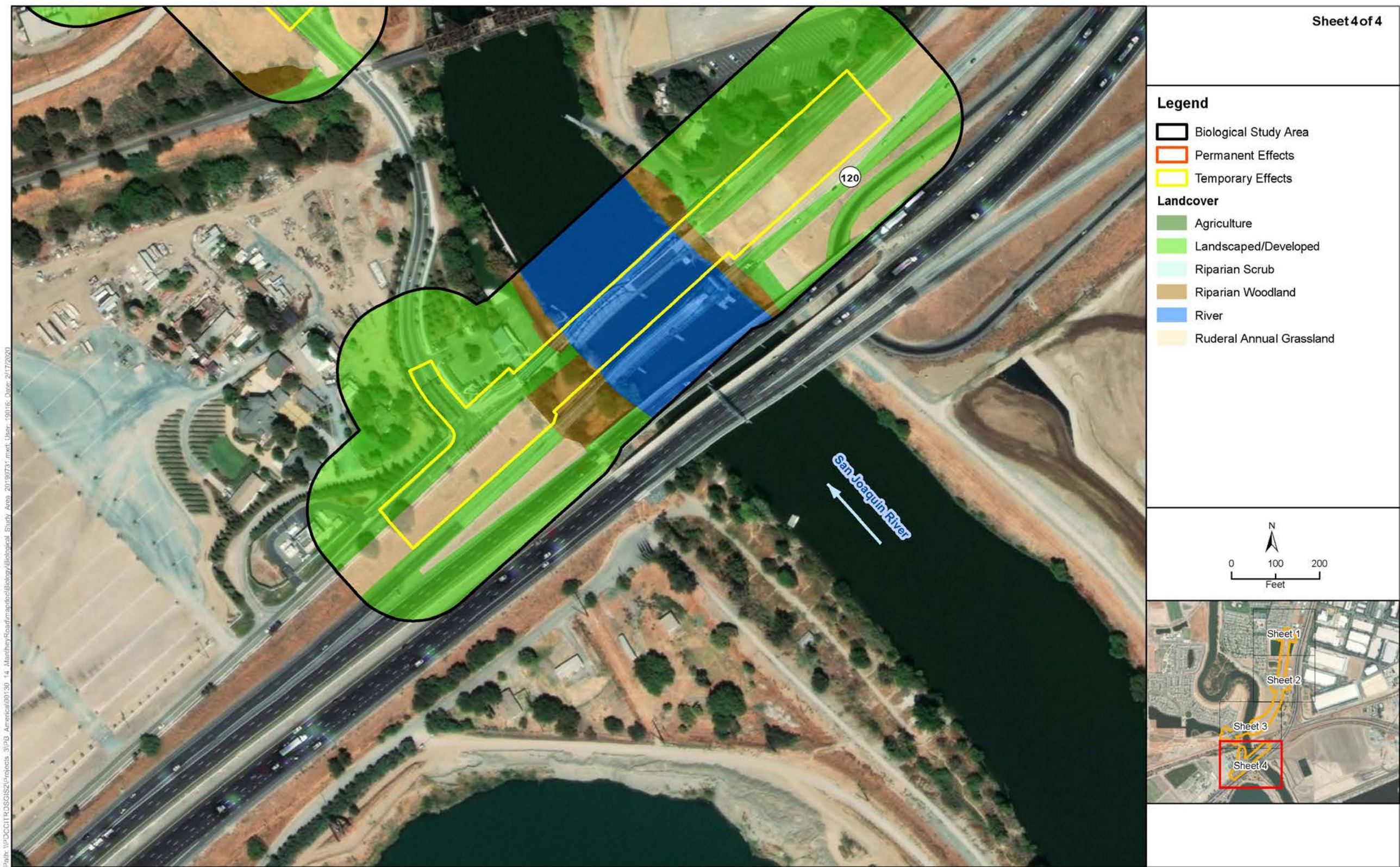


Figure 2.3.1-1 Biological Study Area—Sheet 4 of 4

Avoidance, Minimization, and/or Mitigation Measures

Install Orange Construction Fencing between the Construction Area and Adjacent Sensitive Biological Resources

The City and/or its contractor will install orange construction fencing between the construction area and adjacent sensitive biological resource areas. Sensitive biological resources that occur adjacent to the construction area that could be directly affected by the project include natural communities of special concern, special-status wildlife habitats, and protected trees to be avoided.

Orange construction fencing around sensitive areas will be installed as one of the first orders of work and prior to equipment staging. The protected areas will be designated as environmentally sensitive areas and clearly identified on the construction plans prior to construction bid. Before construction begins, the construction contractor will work with the engineer and a resource specialist to verify the locations for the orange construction fencing and will place stakes around the sensitive resource sites to indicate these locations. The fencing will be installed before construction activities are initiated, maintained throughout the construction period, and removed after completion of construction.

To prevent snakes and other ground-dwelling animals from being caught in the orange construction fencing, it will be placed with at least a 1-foot gap between the ground and the bottom of the fencing. Fencing will be inspected weekly and repairs made promptly, if needed.

Conduct Environmental Awareness Training for Construction Employees

The City will retain a qualified biologist to conduct environmental awareness training for construction crews before project implementation. The awareness training will be provided to all construction personnel to brief them on the need to avoid effects on sensitive biological resources (e.g., native trees, natural communities of special concern, and special-status species habitats in and adjacent to the construction area). The education program will include a brief review of the special-status species with the potential to occur in the biological study area (including their life history, habitat requirements, and photographs of the species). The training will identify the portions of the biological study area in which the species may occur, as well as their legal status and protection. The program also will cover the restrictions and guidelines that must be followed by all construction personnel to reduce or avoid effects on these species during project implementation, as well as the ramifications for non-compliance, which will include the steps to be taken if a sensitive species is found within the construction area (i.e., notifying the crew foreman, who will call a designated biologist). In addition, construction employees will be educated about the importance of controlling and preventing the spread of invasive plant infestations. An environmental awareness handout that describes and illustrates sensitive resources to be avoided during project construction and identifies all relevant permit conditions will be provided to each person. The crew foreman will be responsible for ensuring that crew members adhere to the guidelines and restrictions. Education programs

will be conducted for appropriate new personnel as they are brought on the job during the construction period.

Conduct Biological Monitoring

An appointed monitor, trained by a qualified biologist, will ensure that activities are being conducted in accordance with the agreed upon project schedule and agency conditions of approval. If any violations are noted or if any sensitive species are encountered, the appointed monitor will contact the project biologist for guidance. A qualified biologist will be available to conduct site visits as required.

Certain activities will require a biological monitor to be present for the duration of the activity or during the initial disturbance of an area to ensure that there is no take of state or federally listed species and no violation of the Migratory Bird Treaty Act.

Mitigation Measure BIO-1. Compensate for Temporary Effects on and Permanent Loss of Riparian Woodland and Riparian Scrub (Including Shaded Riverine Aquatic Cover)

The City will comply with regulatory requirements determined as part of the Streambed Alteration Agreement for the work that would occur within the San Joaquin River, including riparian habitat mitigation. The City will compensate for construction-related effects and permanent loss of up to 0.07 acre of riparian woodland and up to 0.07 acre of riparian scrub at a minimum ratio of 1:1 (1 acre restored for every 1 acre permanently affected). The actual compensation ratios will be determined through coordination with the California Department of Fish and Wildlife as part of the permitting process. In addition, temporary loss of up to 0.08 acre riparian woodland and up to 0.09 acre of riparian scrub that cannot be restored onsite will be mitigated. The City will purchase mitigation bank credits to compensate for temporary and permanent losses of riparian woodland and riparian scrub on the waterside slope of the existing levees, including riparian woodland supporting Shaded Riverine Aquatic cover habitat.

Because compliance with the United States Army Corps of Engineers levee vegetation policy, the Unified Land Development Code, and other engineering constraints limit the ability to achieve full onsite restoration of temporary impacts and compensation for permanent impacts, the purchase of mitigation bank credits will be needed to achieve no net loss of existing in-kind riparian and Shaded Riverine Aquatic cover habitat values.

The riparian mitigation may also benefit Swainson's hawk, white-tailed kite, yellow-breasted chat, yellow warbler, and western red bat. Depending on the exact location, this mitigation could also benefit riparian brush rabbit.

The City will purchase riparian habitat credits from an approved mitigation bank near the project, such as the Cosumnes Floodplain Mitigation Bank, Fremont Landing Conservation Bank, or Liberty Island Conservation Bank. If no suitable mitigation bank options are available at the time of construction, the City will pay into the

National Fish and Wildlife Foundation Sacramento District in-lieu fee program. The final compensation ratio of restored or created riparian habitat for each acre of riparian habitat removed will be approved by California Department of Fish and Wildlife in order to result in no net loss of riparian habitat.

In addition to mitigating for the loss of riparian forest habitat, specific measures will be included to compensate for the loss of Shaded Riverine Aquatic cover (area and linear feet). However, the acreage will not be duplicated, such that the acreage of riparian forest habitat restored for Shaded Riverine Aquatic cover mitigation will apply toward riparian forest habitat mitigation requirements. National Marine Fisheries Service recommends revegetating onsite at a 3:1 ratio (3 units replaced for every 1 unit of affected habitat) with native riparian species to replace Shaded Riparian Aquatic cover habitat. Shaded Riverine Aquatic cover mitigation will include the following riparian replacement requirements:

- Replace the 0.016 acre of temporary loss of Shaded Riverine Aquatic cover vegetation at a 1:1 replacement ratio (i.e., 0.016 acre) and the 0.014 acre of permanent loss of Shaded Riverine Aquatic cover vegetation at a 3:1 replacement ratio (i.e., 0.042 acre) by purchasing a total of 0.058 acre (0.016 acre + 0.042 acre) of Shaded Riverine Aquatic cover credits.
- Shaded Riverine Aquatic cover credits will need to be purchased from a National Marine Fisheries Service-approved mitigation bank within the approved service area for the project that provides riparian forest floodplain conservation credits as offsite compensation for impacts on federally listed anadromous salmonids, designated critical habitat, and essential fish habitat for Chinook salmon.

2.3.2 Wetlands and Other Waters

Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (33 United States Code 1344), is the primary law regulating the wetlands and surface waters. One purpose of the Clean Water Act is to regulate the discharge of dredged or fill material into waters of the 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. The lateral limits of jurisdiction over non-tidal water bodies extend to the ordinary high water mark, in the absence of adjacent wetlands. When adjacent wetlands are present, Clean Water Act jurisdiction extends beyond the ordinary high water mark to the limits of the adjacent wetlands. To classify wetlands for the purposes of the Clean Water Act, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the Clean Water Act.

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

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

Ordinarily, projects that do not meet the criteria for a Regional or Nationwide Permit may be permitted under one of the United States Army Corps of Engineers' Individual permits. There are two types of Individual Permits: Standard permits and Letters of Permission. For Individual permits, the United States Army Corps of Engineers decision to approve is based on compliance with United States Environmental Protection Agency's Section 404(b)(1) Guidelines (40 Code of Federal Regulations 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines (Guidelines) were developed by the United States Environmental Protection Agency in conjunction with the United States Army Corps of Engineers and allow the discharge 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 the United States Army Corps of Engineers may not issue a permit if there is a "least environmentally damaging practicable alternative" to the proposed discharge that would have lesser effects on waters of the United States and not have any other significant adverse environmental consequences.

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

At the state level, wetlands and waters are regulated primarily by the State Water Resources Control Board, the Regional Water Quality Control Boards and the California Department of Fish and Wildlife. In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or the Tahoe Regional Planning Agency) may also be involved. Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow or substantially change the bed or

bank of a river, stream, or lake to notify California Department of Fish and Wildlife before beginning construction. If California Department of Fish and Wildlife determines that the project may substantially and adversely affect fish or wildlife resources, a Lake and Streambed Alteration Agreement will be required. California Department of Fish and Wildlife jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the United States Army Corps of Engineers may or may not be included in the area covered by a Lake and Streambed Alteration Agreement obtained from the California Department of Fish and Wildlife.

The Regional Water Quality Control Boards were established under the Porter-Cologne Water Quality Control Act to oversee water quality. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements and may be required even the discharge is already permitted or exempt under the Clean Water Act. In compliance with Section 401 of the Clean Water Act, the Regional Water Quality Control Boards also issue water quality certifications for activities which may result in discharge to waters of the United States. This is most frequently required in tandem with a Section 404 permit request. Please see Section 2.2.2, *Water Quality and Stormwater Runoff*, for more details.

Affected Environment

This section is informed by the Natural Environmental Study, completed in December 2018 and updated in March 2020, and the Biological Assessment, completed in March 2020, and the Aquatic Resources Delineation Report, completed in October 2018. The original delineation field surveys occurred in April and May of 2014 and the Delineation Report was prepared to support the submission of a preliminary Jurisdictional Delineation to the United States Army Corps of Engineers, Sacramento District. The delineation has not yet been verified the United States Army Corps of Engineers.

A total of 5.818 acres of wetlands and other waters were identified in the delineation area and consist of one seasonal emergent wetland (0.125 acre) and tidal perennial drainage (San Joaquin River) (5.693 acres). In accordance with a preliminary Jurisdictional Delineation approach, all of these features were interpreted to be within the scope of United States Army Corps of Engineers jurisdiction under Section 404 of the Clean Water Act.

One excavated pond that supports seasonal freshwater emergent wetland vegetation occurs in the biological study area west of Stewart Road and south of the railroad levee. The wetland boundary is distinct, indicated by the lack of vegetation at the bottom of the slope around the wetland. The wetland is located in a graded construction yard. Based on aerial photographs from 2006 and earlier, the wetland was excavated in an upland area in 2006 during widening improvements to Stewart Road, which is located immediately east of the basin, and was likely constructed as a detention basin. The pond was dry in April and May 2014 and was assumed to be only seasonally wet. This pond is likely to be considered a water of the United States

and a water of the State, regulated by the United States Army Corps of Engineers and Regional Water Quality Control Board, respectively.

San Joaquin River is a tidal perennial drainage that flows under Manthey Road in the delineation area. The river varies from approximately 270 to 330 feet wide at the mean high water line, which is between elevations of 6.6 and 6.8 feet (North American Vertical Datum) in the delineation area. The riverbanks are levees covered with riprap along the lower 15 to 20 feet, except along a short section of the east riverbank north of the railroad bridge, where the riprap appears to have been washed away. In this area, the riparian understory is bare sand partially covered by rafted mats of water hyacinth. The banks are mostly steeply sloped and support riparian woodland/riparian scrub.

Environmental Consequences

Build Alternative

The Build Alternative would result in temporary and permanent impacts on the San Joaquin River, a tidal perennial drainage, in the biological study area. Proposed project elements that would cause these impacts include removal of the existing bridge structure; construction of bridge abutments; and installation of temporary cofferdams or steel casings, temporary trestles or spud piles, scour protection, and cast-in-steel shell piles or cast-in-drilled-hole piles for bridge piers. In addition to direct fill impacts, project activities could indirectly affect water quality within the stream by causing temporary increased sedimentation downstream of the work area.

Permanent impacts would result from placement of piles within the riverbed to support the new bridge structure. The new bridge would include four spans, with a total of six piles to be placed within the mean high water line of the San Joaquin River. The diameter of each bridge pier would be 84 inches, creating a footprint of 38 square feet.

The total amount of fill to be permanently placed in the San Joaquin River for the six 84-inch-diameter piers would be 231 square feet (0.005 acre) for all six piles. With the removal of the piers associated with the existing bridge, the Build Alternative would result in a net gain of 0.04 acre of riverbed area; therefore, no compensatory mitigation would be required.

Temporary impacts of 0.18 acre would occur due to use of cofferdams and temporary trestles. Temporary impacts would be slightly less if a precast girder bridge type is constructed, and spud piles for barges are used in place of trestles for bridge construction and bridge removal; however, the reduction in impact would be less than 0.01 acre.

Both permanent and temporary fill within the mean high water line of the San Joaquin River for bridge piles and cofferdams or steel casings would be regulated by the United States Army Corps of Engineers under a Section 404 nationwide permit. Nationwide Permit #14 (Bridge Projects) would most likely cover the permanent fill resulting from project construction. Work that involves sheet piling (such as

cofferdams) is not considered fill, but requires work within a navigable water, and therefore is regulated by the United States Army Corps of Engineers under Section 10 of the Rivers and Harbors Act.

The seasonal emergent wetland is located outside of the temporary impact area and would not be directly affected by construction of the Build Alternative.

Implementation of the measure described below in *Avoidance, Minimization, and/or Mitigation Measures*, would ensure that construction activities avoid impacts on the seasonal emergent wetland habitat located near the construction area and avoid or minimize impacts on the San Joaquin River within and adjacent to the limits of disturbance associated with construction.

No-Build Alternative

Under the No Build Alternative, the existing Manthey Road Bridge would remain in its current location and no construction would occur; therefore, there would be no effect on wetlands or other waters.

Avoidance, Minimization, and/or Mitigation Measures

Protect Water Quality and Prevent Erosion and Sedimentation in Drainages and Wetlands

The City and/or their construction contractor will comply with all construction site best management practices specified in the Storm Water Pollution Prevention Plan and any other permit conditions to minimize introduction of construction-related contaminants and mobilization of sediment in the San Joaquin River. Broadly, these best management practices will address soil stabilization, sediment control, wind erosion control, vehicle tracking control, non-stormwater management, and waste management practices. The best management practices will be based on the best conventional and best available technology.

The proposed project is subject to stormwater quality regulations established under the National Pollutant Discharge Elimination System, described in Section 402 of the federal Clean Water Act. In California, the National Pollutant Discharge Elimination System program requires that any construction activity disturbing 1 or more acres comply with the statewide General Permit, as authorized by the State Water Resources Control Board. The General Permit requires elimination or minimization of non-stormwater discharges from construction sites and development and implementation of a Storm Water Pollution Prevention Plan for the site. The primary elements of the Storm Water Pollution Prevention Plan 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 best management practices;
- Description of measures to prevent and control toxic materials spills; and

- Description of construction site housekeeping practices.

In addition to these primary elements, the Storm Water Pollution Prevention Plan specifies that the extent of sedimentation and siltation beyond the construction area would be minimized by erosion control and exclusion fencing or other means and that the extent of soil disturbed at any given time would be minimized. The Storm Water Pollution Prevention Plan must be retained at the construction site.

The best management practices will be selected to achieve an acceptable level of sediment removal and represent the best available technology economically achievable; they are subject to review and approval by the City. The City will perform routine inspections of the construction area to verify that the best management practices are properly implemented and maintained. The City will notify contractors immediately of a noncompliance issue and will require compliance.

The best management practices will include, but are not limited to, the following.

- All in-water work within the San Joaquin River will be conducted between June 1 and October 31 to avoid potential impacts on sensitive life stages (migration, spawning, egg and embryo incubation) of special-status fish species.
- Equipment used in and around drainages and wetlands will be in good working order and free of dripping or leaking engine fluids. All vehicle maintenance will be performed at least 300 feet from all streams. Any necessary equipment washing will be carried out where the water cannot flow into drainages or wetlands.
- Develop a hazardous material spill prevention control and countermeasure plan before construction begins. The plan will include strict onsite handling rules to keep construction and maintenance materials from entering the river, including procedures related to refueling, operating, storing and staging construction equipment, and preventing and responding to spills. The plan also will identify the parties responsible for monitoring a spill response. During construction, any spills will be cleaned up immediately according to the spill prevention control and countermeasure plan. The City will review and approve the contractors' spill prevention control and countermeasure plan before allowing construction to begin.
- 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.
- Take any surplus concrete rubble, asphalt, or other rubble from construction that is not reused or recycled to a landfill.
- Prepare and implement an erosion and sediment control plan for the proposed project that will include the following provisions and protocols. The Storm Water Pollution Prevention Plan for the project will detail the applications and type of measures and the allowable exposure of unprotected soils.

- Discharge from dewatering operations, if needed, and runoff from disturbed areas will be made to conform to the water quality requirements of the waste discharge permit issued by the Central Valley Regional Water Quality Control Board.
- Throughout construction of the proposed project, soil exposure will be minimized through use of temporary best management practices, groundcover, and stabilization measures. Apply temporary erosion control measures to contain soil and filter runoff from disturbed areas by berms, vegetated filters, silt fencing, straw bales/wattle, plastic sheeting, catch basins, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, temporary revegetation or other ground cover, or other means necessary. Remove the temporary measures after the working area is stabilized, or as directed by the engineer. The contractor will conduct periodic maintenance of temporary erosion and sediment control measures.
- Exposed dust-producing surfaces where vegetation has been removed will be sprinkled daily, if necessary, until wet; this measure will be controlled to avoid producing runoff. Paved roads will be swept daily following construction activities.
- Enclose exposed stockpiles of dirt or other loose, granular construction materials that could contribute sediment to waterways. Avoid earth or organic material from being deposited or placed where it may be directly carried into a channel. Material stockpiles will be located in non-traffic areas only. Side slopes will not be steeper than 2:1. All stockpile areas will be covered with soil stabilization material or a temporary cover and surrounded by a filter fabric fence and interceptor dike.
- Cover or apply nontoxic soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more) that could contribute sediment to waterways.
- Plant an appropriate seed mix on disturbed areas upon completion of construction.
- The City also will obtain a 401 Water Quality Certification from the Central Valley Regional Water Quality Control Board, which may contain additional best management practices and water quality measures to ensure the protection of water quality.

2.3.3 Animal Species

Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The United States Fish and Wildlife Service, the National Oceanic and Atmospheric Administration's National Marine Fisheries Service, and the California Department of Fish and Wildlife are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under the Federal or State Endangered Species Act. Species listed or proposed for

listing as threatened or endangered are discussed in Section 2.3.4, *Threatened and Endangered Species* below. All other special-status animal species are discussed here, including California Department of Fish and Wildlife fully protected species and species of special concern, and United States Fish and Wildlife Service or National Marine Fisheries Service candidate species.

Federal laws and regulations relevant to wildlife include the following:

- National Environmental Policy Act
- Federal Endangered Species Act
- Magnuson-Stevens Fishery Conservation and Management Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

State laws and regulations relevant to wildlife include the following:

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

Affected Environment

This section was informed by the Natural Environment Study completed in December 2018, and updated in March 2020, for this project.

Sensitive wildlife species that could occur in the biological study area were identified based on a review of existing information and reconnaissance-level field surveys. After reconnaissance-level field surveys were conducted, it was determined that the wildlife species discussed below have the potential to occur in or adjacent to the biological study area. Three federally and/or state-listed species that have the potential to occur in the biological study area are discussed in Section 2.3.4, *Threatened and Endangered Species*.

Wildlife Species

Western Pond Turtle

Western pond turtle is a California species of special concern. Aquatic habitats used by western pond turtles include ponds, lakes, marshes, rivers, streams, and irrigation ditches with a muddy or rocky bottom in grassland, woodland, and open forest areas. Western pond turtles move to upland areas adjacent to watercourses to deposit eggs and overwinter. Turtles have been observed overwintering several hundred meters from aquatic habitat.

No western pond turtles were observed in the biological study area during the reconnaissance-level surveys. The San Joaquin River provides suitable habitat for

the species, and the banks and adjacent uplands may be used for nesting. Although there are no California Natural Diversity Data Base records for the species within approximately 10 miles of the biological study area, not all observations of western pond turtle are reported in the database.

Western Burrowing Owl

Western burrowing owl is a California species of special concern. Suitable habitat must contain burrows with relatively short vegetation and minimal amounts of shrubs or taller vegetation. They most commonly nest and roost in California ground squirrel burrows, but also may use burrows dug by other species, as well as culverts, piles of concrete rubble, and pipes. Although owls forage near their burrows during the breeding season, they have been recorded hunting up to 1.7 miles away. Rodent populations, particularly California vole populations, may greatly influence survival and reproductive success of California burrowing owls.

Focused surveys for western burrowing owl were not conducted. No burrowing owls or sign of burrowing owl were observed during the June 2014 reconnaissance-level field survey. The nearest California Natural Diversity Data Base record for burrowing owl is approximately 2 miles east of the biological study area. The eBird database records an occurrence of burrowing owl on October 9, 2014, approximately 1 mile northwest of the biological study area. The annual grassland and ruderal areas within the limits of disturbance for project construction under Alternative 3 provide potential habitat for the species. A few ground squirrel burrows were observed within the ruderal area just east of the San Joaquin River; however, no ground squirrel burrows were observed in the ruderal areas in the northern portion of the biological study area.

Northern Harrier

Northern harrier is a California species of special concern. Northern harrier is a year-round resident throughout the Central Valley and often is associated with open grassland habitats and agricultural fields. Harriers nest on the ground, mostly within patches of dense, often tall, vegetation in undisturbed areas.

Focused surveys for northern harrier were not conducted, and no harriers were observed during the June 2014 reconnaissance-level field survey. There are no California Natural Diversity Data Base records for this species nesting within 10 miles of the biological study area; however, not all special-status species observations are reported in the database. There is an eBird record of an observation of northern harrier approximately one mile northeast of the biological study area. The ruderal areas and nonnative annual grassland within the limits of disturbance for project construction under the Build Alternative provide potential nesting and foraging habitat for northern harrier.

White-Tailed Kite

White-tailed kite is fully protected by the California Fish and Game Code. White-tailed kites generally inhabit low-elevation grassland, savannah, oak woodland,

wetlands, agricultural, and riparian habitats. Some large shrubs or trees are required for nesting and for communal roosting sites. They forage in undisturbed, open grassland, meadows, farmland, and emergent wetlands.

Focused surveys for white-tailed kite were not conducted, and no kites were observed during the June 2014 reconnaissance-level field survey. The nearest white-tailed kite nesting record in the California Natural Diversity Data Base is approximately 10 miles northeast of the biological study area. There are several eBird records for sightings of white-tailed kite within approximately 2 miles of the biological study area. The ruderal grassland and agricultural areas provide potential nesting and foraging habitat for white-tailed kite, and the riparian woodland provides suitable nesting habitat.

Yellow-Breasted Chat, Modesto Song Sparrow, Yellow Warbler, Loggerhead Shrike, and Other Migratory Birds

Yellow-breasted chat, Modesto song sparrow, yellow warbler, and loggerhead shrike are designated as California species of special concern.

Yellow breasted chat is a rare breeder in much of the Central Valley and part of the southern coastal slope and nests more regularly on the west slope of the Sierra Nevada. Yellow-breasted chat occupies early successional riparian habitats with a well-developed shrub layer and an open canopy. Nesting habitat usually is restricted to the narrow border of streams, creeks, sloughs, and rivers, where the dominant vegetation includes blackberry, wild grape willow, and other plants that form dense thickets and tangles. Yellow-breasted chat breeds from late April through early August.

Modesto song sparrow is a population of song sparrow that occurs from Colusa County south through the Delta to Stanislaus County. The habitat requirements for Modesto song sparrow are largely undescribed, but the birds have been observed in emergent marsh, riparian willow thickets, and riparian forests with a sufficient understory of blackberry and along vegetated irrigation canals and levees. Modesto song sparrow breeds from mid-March to early August.

Yellow warbler occurs as a migrant and summer resident in California from later March through early October. Yellow warbler occurs throughout California but is very rare in the Central Valley. The species is considered largely extirpated as a breeder in the Delta and San Joaquin Valley region. The species generally occupies riparian vegetation close to water along streams and in wet meadows. They are found in willows and cottonwoods and in several other species of riparian trees and shrubs, depending on geographic region. Yellow warblers breed from April to late July.

Loggerhead shrike occurs throughout most of the state, except for the heavily forested areas of the coastal slope, Coast Ranges, Klamath and Siskiyou Mountains, Sierra Nevada and southern Cascades, and high elevations of the Transverse Ranges. Loggerhead shrikes breed in shrublands and open woodlands with grass cover and bare ground. They search for prey from tall shrubs, trees,

fences, and power lines, frequently impaling their prey on sharp, thorny, or multi-stemmed plants and barbed-wire fences. Loggerhead shrikes forage in open areas with short grasses and forbs or bare ground. In the Central Valley, they also use riparian edges. Nests are built in trees or shrubs with dense foliage and are usually hidden well. The nesting period for loggerhead shrikes is March through June

Focused nesting surveys were not conducted within the biological study area for yellow-breasted chat, Modesto song sparrow, yellow warbler, or loggerhead shrike. None of these species, nor any bird nests, were observed during the June 2014 reconnaissance-level survey. The riparian woodland within the biological study area provides suitable nesting habitat for migratory birds, including yellow-breasted chat, Modesto song sparrow, yellow warbler, and loggerhead shrike.

There are several records of Modesto song sparrow within 10 miles of the biological study area, with the closest being approximately 3 miles north of the biological study area. There are no California Natural Diversity Data Base records for yellow-breasted chat, yellow warbler, or loggerhead shrike within approximately 10 miles of the biological study area. However, there are eBird records for observations of yellow warbler, yellow-breasted chat, and loggerhead shrike within 10 miles of the biological study area during the breeding season.

Special-Status Bats

Pallid bat is designated as a California species of special concern. They occur in a variety of habitat, including grasslands, shrublands, and woodlands and are most common in open, dry habitats with rocky areas for roosting. Pallid bats roost alone, in small groups, or gregariously in crevices in rocky outcrops and cliffs, caves, mines, trees hollows, exfoliating tree bark, and various human structures, such as bridges and buildings.

Western red bat is designated as a California species of special concern. Western red bat is typically solitary, roosting primarily in the foliage of trees or shrubs. Day roosts are commonly found in edge habitats adjacent to streams or open fields. In the Central Valley, they are more common in areas with wide strips of mature cottonwoods and sycamores. They are also known to roost in orchard trees, particularly in walnut orchards.

The existing Manthey Road Bridge, buildings, landscaped areas with large trees, and riparian woodland provide suitable roosting habitat for bats, including western red bat (riparian woodland and landscaped areas with large trees) and pallid bat (all habitats). The expansion joints visible from either bank appear to be suitable for roosting bats. The areas of the bridge that are over the water were not readily visible from the riverbanks. Evidence of roosting bats (i.e., extensive guano) was observed underneath the railroad bridge that is between the limits of disturbance of the two alternatives. There are no California Natural Diversity Data Base records for occurrences of western red bat within 10 miles of the biological study area. There is one California Natural Diversity Data Base record for an occurrence of pallid bat approximately 9 miles southwest of the biological study area.

Fish Species

White Sturgeon

White sturgeon is not listed under the Federal Endangered Species Act, and critical habitat has not been designated. Although white sturgeon is not listed under California Endangered Species Act, the species is considered a California species of special concern. California Department of Fish and Wildlife classifies the current status of white sturgeon as High Concern. White sturgeon is a recreationally important species in the Delta, and California Department of Fish and Wildlife has established special angling regulations (e.g., slot and bag restrictions) for white sturgeon to protect the declining population within the San Francisco Estuary and its tributaries.

The San Joaquin River provides suitable habitat for white sturgeon. Adult white sturgeon move from the waters of San Francisco Bay into the Delta and lower Sacramento River (and presumably the San Joaquin River) during the late fall and winter to spawn. Spawning typically occurs between February and June over deep gravel riffles or in deep holes with swift currents and rock bottoms. After the eggs hatch in 4 to 12 days (the duration of egg incubation is inversely related to water temperature), the larvae drift downstream to the estuary where food is abundant. Little is known about the movements, habitat use, and feeding habits of white sturgeon. Juvenile white sturgeon have been captured in the Delta during all months of the year and tagging studies suggest that most white sturgeon remain in the estuary and Sacramento and San Joaquin Rivers year-round.

Focused surveys were not conducted within the biological study area for white sturgeon. However, it is well documented that white sturgeon use the Delta for year-round rearing and as a migration corridor during upstream (adult) and downstream (adult and larvae/juvenile) migration, based on the salvage of white sturgeon at the Central Valley Project Tracy Fish Collection Facility, the California State Water Project Skinner Delta Fish Protective Facility in the south Delta, and other studies. From January 2002 through May 2016, white sturgeon were salvaged in all months of the year. In the San Joaquin River, adult white sturgeon have been captured by anglers between Stockton and the Highway 140 bridge (well upstream of the biological study area). Spawning and egg incubation do not occur in the biological study area.

Central Valley Fall- and Late-Fall-Run Chinook Salmon

Central Valley fall- and late-fall-run Chinook salmon are being discussed because this evolutionarily significant unit is a federal species of concern and essential fish habitat for Chinook salmon has been designated for the San Joaquin River. The Central Valley fall- and late-fall-run Chinook salmon evolutionarily significant unit consists of all naturally spawned populations of fall- and late-fall-run Chinook salmon in the Sacramento and San Joaquin River basins and their tributaries east of the Carquinez Strait. On April 15, 2004, the Central Valley fall- and late-fall-run Chinook salmon ESU was identified by National Marine Fisheries Service as a Species of Concern. The Central Valley fall- and late-fall-run Chinook salmon evolutionarily

significant unit is not listed under California Endangered Species Act. However, Central Valley late fall-run Chinook salmon is classified as a Class 2 Species of Special Concern by California Department of Fish and Wildlife. Presently, the San Joaquin River in the vicinity of the biological study area is far from any migration routes of late fall-run Chinook salmon; therefore, this run is not discussed any further.

Adult fall-run Chinook salmon enter the San Joaquin River from October to early January, with a peak in November, and spawn from late October to January, with a peak in November. Adults spawn within a few days or weeks of reaching their spawning grounds.

Focused surveys were not conducted within the biological study area for fall-run Chinook salmon. However, it is well documented that fall-run Chinook salmon use the lower San Joaquin River and Delta as a migration corridor during upstream (adult) and downstream (juvenile) migration. The temporal occurrence and relative abundance of fall-run Chinook salmon in the biological study area can be inferred based on juvenile fish monitoring surveys (trawls) conducted by United States Fish and Wildlife Service and California Department of Fish and Wildlife at Mossdale. Based on data collected from January 2001 through March 2016, juvenile fall-run sized Chinook salmon have occurred in the biological study area from December to July, with most being caught in April, May, and June. Spawning and egg incubation do not occur in the biological study area.

River Lamprey

River lamprey are a California species of special concern. Although river lamprey is widely believed to be in decline, the species' exact status is uncertain, partly because it is often overlooked and seldom studied. Both historical and current abundance and distribution data are lacking.

River lamprey are semelparous (i.e., they die after spawning) anadromous fish with long freshwater rearing periods. Adults return to freshwater to spawn in fall and winter but spawning usually occurs in February through May in gravely riffles. Juvenile river lamprey (ammocoetes) remain in silty backwater habitats, where they filter feed on various microorganisms for approximately 3–5 years before migrating to the ocean during late spring periods after completing the transformation from ammocoete to adult.

Focused surveys were not conducted within the biological study area for river lamprey and the species is not prone to capture by trawls. However, their presence is assumed, and adults are assumed to be present seasonally (fall and winter) during their upstream migration to spawning habitat. Juveniles (ammocoetes) are assumed to be present year-round in the biological study area.

Pacific Lamprey

Pacific lamprey is a federal species of concern and a California species of special concern. California Department of Fish and Wildlife classifies the current status of

the species as Moderate Concern. Critical habitat for Pacific lamprey has not been designated.

Adult Pacific lamprey spend the predatory phase of the life in the ocean and migrate into freshwater streams from January through June to spawn. Most movement occurs at night. Like river lamprey, Pacific lamprey are semelparous (i.e., they die after spawning) anadromous fish with long freshwater rearing periods. Adults spawn by constructing a nest in gravelly areas of streams containing relatively fast velocities and depths of 1–5 feet. After hatching, young (ammocoetes) spend a short period in the nest before being washed downstream to areas of soft sand or mud and burrow tail first into the substrate.

Focused surveys were not conducted within the biological study area for Pacific lamprey and the species is not prone to capture by trawls. Pacific lamprey use the biological study area for migration (adults and juveniles) and possibly rearing; no spawning occurs in the biological study area. Because of their extended freshwater residency as ammocoetes, Pacific lamprey may be present in the biological study area year-round.

Sacramento Splittail

Sacramento splittail was listed as threatened under Federal Endangered Species Act on February 8, 1999. This listing was challenged by two lawsuits. On June 23, 2000, the Federal Eastern District Court of California found the listing to be unlawful and on September 22 of the same year, remanded the determination back to the United States Fish and Wildlife Service for reevaluation of their original listing decision. Upon further evaluation, United States Fish and Wildlife Service removed Sacramento splittail from the threatened species list on September 22, 2003. On August 13, 2009, the Center for Biological Diversity challenged the 2003 decision to remove splittail from the threatened species list. However, on October 7, 2010, United States Fish and Wildlife Service found that listing of Sacramento splittail was not warranted.

Sacramento splittail is not listed under California Endangered Species Act. Sacramento splittail is designated by California Department of Fish and Wildlife as a California species of special concern.

Adult splittail are adapted for living in estuarine waters with widely fluctuating environmental conditions. They are found mostly in the Delta, Suisun Bay, Suisun Marsh, lower Napa and Petaluma Rivers, and other parts of the San Francisco estuary.

Adult splittail exhibit a gradual movement upstream during winter and spring, presumably to forage and spawn in flooded areas. They have been observed to leave Suisun Bay and the Delta during December through March, and it appears that the Yolo and Sutter Bypasses provide important spawning habitat in years when the bypasses are flooded. Splittail spawn in late April and May in Suisun Marsh and between early March and May in the upper Delta and lower reaches and flood

bypasses of the Sacramento and San Joaquin Rivers and on the Cosumnes River Preserve. Spawning has been observed to occur as early as January and may continue through early July. After hatching, larval splittail are commonly found in shallow, vegetated areas near spawning habitat. Larvae eventually move into deeper and more open-water habitat as they grow and become juveniles. For example, young-of-year (juvenile) splittail frequently occur in the flood bypasses when these areas are inundated during late winter and spring.

Focused surveys were not conducted within the biological study area for Sacramento splittail. However, the temporal occurrence and relative abundance of Sacramento splittail in the biological study area can be inferred based on juvenile fish monitoring surveys (trawls) conducted by United States Fish and Wildlife Service and California Department of Fish and Wildlife at Mossdale. Based on data collected from January 2001 through March 2016, splittail occur in the biological study area from January to September, with a peak in May, June, and July, and in November. Generally, splittail abundance within the biological study area appears to be low during September to March. Sacramento splittail use the San Joaquin River within the biological study area for migration (adults and juveniles), rearing (juveniles), and possibly spawning (adults).

Environmental Consequences

Build Alternative

Wildlife Species

Western Pond Turtle

Implementation of the Build Alternative would require some temporary in-channel work that could result in injury and mortality to pond turtles. Construction activities also could temporarily discourage pond turtles from foraging and basking near the project site, affecting western pond turtle behavior. Construction activities would affect upland areas that could be used by turtles for nesting (riverbanks and adjacent ruderal grasslands). Approximately 3.38 acres of ruderal grassland would be permanently affected, and 6.74 acres would be temporarily affected, in addition to an unquantified amount of riverbank.

Western Burrowing Owl

Construction activities could result in injury or direct mortality of western burrowing owl eggs, juveniles, and adults, if they are occupying the work area during ground-disturbing activities. Construction activities also could disrupt burrowing owl behavior, including nesting activity, if the owls are occupying nearby habitats. The Build Alternative would result in the permanent losses of 3.38 acres of ruderal grassland that provides suitable foraging and nesting habitat for burrowing owl and 1.54 acres of agricultural land that provides suitable foraging habitat for burrowing owl and suitable nesting habitat on its periphery. The Build Alternative would also result in temporary losses of 6.74 acres of ruderal grassland and 2.43 acres of agricultural lands that provide suitable habitat for burrowing owl.

Northern Harrier

Construction activities could result in the disturbance or loss of a northern harrier nest, if a nest is present in or near the construction area. These activities could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. The presence of construction crews and equipment and the noise from pile driving could disrupt normal behaviors, including nesting. The Build Alternative would result in the permanent loss of 4.92 acres of suitable foraging and nesting habitat for northern harrier (3.38 acres of ruderal grassland and 1.54 acres of dry farmed wheat) and the temporary loss of 9.17 acres of foraging and nesting habitat (6.74 acres of ruderal grassland and 2.43 acres of dry farmed wheat).

White-Tailed Kite

Construction activities could result in the disturbance or loss of a white-tailed kite nest, if a nest is present in or near the construction area. These activities could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. The presence of construction crews and equipment and the noise from pile driving could disrupt normal behaviors, including nesting. Because white-tailed kite is fully protected, removal of trees with active nests and activities that may result in loss of white-tailed kites are prohibited. The Build Alternative would result in the permanent loss of 4.92 acres of suitable foraging habitat for white-tailed kite (3.38 acres of ruderal grassland and 1.54 acres of dry farmed wheat) and the temporary loss of 9.17 acres of foraging habitat (6.74 acres of ruderal grassland and 2.43 acres of dry farmed wheat). The Build Alternative would also result in the permanent loss of 0.07 acre and the temporary loss of 0.08 acre of riparian woodland that provides suitable nesting habitat for white-tailed kite.

Yellow-Breasted Chat, Modesto Song Sparrow, Yellow Warbler, Loggerhead Shrike and Other Migratory Birds

Construction activities could result in disturbance or loss of yellow-breasted chat, Modesto song sparrow, yellow warbler, and loggerhead shrike nests, if nests are present in or near the construction area. These activities could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. The presence of construction crews and equipment and the noise from pile driving could disrupt normal behaviors, including nesting. The Build Alternative would result in the permanent loss of 0.07 acre and the temporary loss of 0.08 acre of riparian woodland that provides suitable nesting habitat for yellow-breasted chat, Modesto song sparrow, yellow warbler, loggerhead shrike, and other migratory birds.

Special-Status Bats

Bridge removal, tree removal and trimming, construction noise and vibrations, and other construction activities could result in direct effects on roosting bats, including the destruction of active roosts and the loss of individual, or roost failures.

Fish Species

Potential project effects on fish species and their habitat include both short-term and long-term effects. Short-term effects include temporary construction-related impacts on fish and aquatic habitat that may last from a few hours to days (e.g., suspended sediment and turbidity, pile driving and general construction noise, artificial lighting). Long-term effects (addition of overwater structure, loss of aquatic habitat [substrate and water column], loss of Shaded Riverine Aquatic cover habitat) typically would last months or years or would be permanent. These effects are generally due to physical alteration of important habitat attributes of the channel, shoreline, and adjacent bank. Short-term effects on special-status fish species were evaluated qualitatively based on general knowledge of the impact mechanisms and species' responses to construction actions. Long-term effects were measured in terms of the area and/or linear feet of artificial shade, aquatic habitat, and Shaded Riverine Aquatic cover habitat affected by the proposed project.

White Sturgeon

Pile Driving Noise

The proposed project would result in the implementation of sequential construction activities that would generate variable intensities of underwater noise. The primary sources of underwater noise associated with these sequential construction activities include driving of the cast-in-steel shell piles or cast-in-drilled-hole pile temporary steel casings with an impact hammer for the in-water piers for the new bridge, driving the 14- to 18-inch diameter steel piles for the temporary trestles that would be used to construct the new bridge and demolish the existing bridge, and installing and removing the spud piles to anchor the barges (if barges are used). Additional sources of underwater noise associated with the project would occur during installation and removal of temporary sheet piles with a vibratory hammer to isolate the in-water piers during bridge removal and during drilling for the cast-in-drilled-hole piles for the new bridge abutments. Only the driving of piles with an impact hammer is expected to produce sound levels that could result in injury to fish.

Impact pile driving is of concern because of the intensity of sounds and known occurrences of fish kills associated with impact pile driving. The effects of pile driving noise on fish may include behavioral responses, physiological stress, temporary and permanent hearing loss, tissue damage (auditory and non-auditory), and direct mortality. In general, factors that may influence the magnitude of effects include the species, life stage, and size of fish; type and size of pile and hammer; frequency and duration of pile driving; site characteristics (e.g., water depth); and distance of fish from the source of the underwater sound.

Table 2.3.3-1 presents a summary of the pile driving assumptions used in the analysis, including assumptions related to pile location (i.e., on land, in water, within bubble curtain), pile size and type (i.e., steel pipe pile, steel H pile, steel shell), the number of piles to be installed (i.e., total and number per day), type of driver to be used (i.e., impact, vibratory), engineer's best estimate of total pile strikes (i.e., per pile and day), sound attenuation (i.e., bubble curtain, none), and underwater sound level assumptions. Because a specific pile type and total number of piles have not been determined for the temporary trestles, Table 2.3.3-1 presents pile driving assumptions for all possible pile driving scenarios, both with and without sound attenuation (i.e., bubble curtains).

The assessment of underwater noise impacts on fish is based on the overlap of construction activities (timing, location, duration) with the spatial and temporal distribution of sensitive species and life stages, as well as the expected fish behavior if encountering underwater noise. Limiting in-water construction activities to between June 1 and October 31, a period when the abundance of special-status fish in the biological study area is reduced, would reduce the potential exposure of fish populations to pile driving noise.

During in-water pile driving activities, the use of an impact driver would be limited to driving only the piles that are needed for the piers of the new bridge, the temporary trestles, and the barges. All of the 48-inch cast-in-drilled-hole piles would be drilled, and all of the temporary sheet piles for the cofferdams would be installed and extracted using a vibratory driver. Use of a vibratory driver and drilling rigs is not expected to produce sound levels that result in injury to fish. Vibratory pile driving is a preferred method for minimizing the exposure of fish to potentially harmful pile driving sounds. Consequently, the following assessment focuses on the potential for injury to fish based on predicted noise levels associated with impact pile driving.

Because it is difficult to predict how far piles would be advanced with a vibratory hammer before impact driving would be needed to complete the installation, the following results are based on the estimated maximum number of strikes that would be needed with an impact hammer to fully install each pile and represent a worst-case scenario for underwater sound levels. Actual underwater sound levels from driving piles would likely be less than the levels reported here because some portion of the pile installation is expected to be accomplished with a vibratory hammer, thereby reducing the total number of strikes needed with an impact hammer to install each pile.

Table 2.3.3-1. Pile Driving Assumptions and Impact Hammer Noise Analysis for Manthey Road Bridge Project

Pile Location	Pile Diameter/ Type	Driver	Total Number of Piles to be Installed	Land or Water Installation	Piles per Day	Engineer's Estimate of Strikes per Pile	Total Strikes per Day	Attenuation (decibels)	Underwater Sound Level Assumptions					Cumulative Sound Exposure Level at Reference Distance	Transmission Loss Constant	Distance (m) to Threshold			
																Onset of Physical Injury			Behavior Root Mean Square decibels
									Peak decibels	Cumulative Sound Exposure Level decibels									
										Fish ≥ 2 g	Fish < 2 g								
									Peak	Sound Exposure Level	Root Mean Square	Reference Distance (m)	Source for Sound Level Assumptions			206 decibels	187 decibels	183 decibels	150 decibels
Proposed Project —No Attenuation																			
Abutments 1 & 5	36-inch diameter cast- in-drilled-hole Pile	Drilled2	12	Land	2	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Temporary Trestle (for cast in place Box Girder Bridge Type)	14- to 18-inch steel H piles	Combination of vibratory hammer and impact hammer driver	80	Water	8	1,800	14,400	0	208	177	189	10	Caltrans 2015. Table I.2-3 Hazel Bridge H pile in water.	219	15	14	631	631	3,981
		Combination of vibratory hammer and impact hammer driver	48	Land	8	1,800	14,400	0	198	167	179	10	Caltrans 2015. Table I.2-3 Hazel Bridge H pile in water (minus 10 decibels for land- based pile)	209	15	3	136	136	858
	14- to 18-inch diameter steel pipe piles	Combination of vibratory hammer and impact hammer driver	80	Water	8	1,800	14,400	0	208	176	187	10	Caltrans 2015. Table I.2-3 Stockton wastewater treatment plant pipeline 20-inch pipe pile in water.	218	15	14	541	541	2,929
		Combination of vibratory hammer and impact hammer driver	48	Land	8	1,800	14,400	0	198	171	183	10	Caltrans 2015. Table I.2-3 Stockton wastewater treatment plant pipeline 20-inch pipe pile on land.	213	15	3	251	251	1,585
Temporary Trestle (for precast Girder Bridge Type)	14- to 18-inch steel H piles	Combination of vibratory hammer and impact hammer driver	84	Water	8	1800	14,400	0	208	177	189	10	Caltrans 2015. Table I.2-3 Hazel Bridge H pile in water.	219	15	14	631	631	3,981
		Combination of vibratory hammer and impact hammer driver	48	Land	8	1,800	14,400	0	198	167	179	10	Caltrans 2015. Table I.2-3 Hazel Bridge H pile in water (minus 10 decibels for land- based pile)	209	15	3	136	136	858
	14- to 18-inch diameter steel pipe piles	Combination of vibratory hammer and impact hammer driver	84	Water	8	1,800	14,400	0	208	176	187	10	Caltrans 2015. Table I.2-3 Stockton wastewater treatment plant pipeline 20-inch pipe pile in water.	218	15	14	541	541	2,929
		Combination of vibratory hammer and impact hammer driver	48	Land	8	1,800	14,400	0	198	171	183	10	Caltrans 2015. Table I.2-3 Stockton wastewater treatment plant pipeline 20-inch pipe pile on land.	209	15	3	251	251	1,585
Piers 2 to 4	84-inch diameter pile steel shells	Combination of vibratory hammer and impact hammer driver	6	Water	1/4 to 1/2 (2–4 days/ pile)	5,000	2500	0	216	192	202	10	Caltrans 2015. Table I.2-3. Values for 84-in pile interpolated from data for large diameter piles.	226	15	46	3,969	6,310	29,286

Pile Location	Pile Diameter/ Type	Driver	Total Number of Piles to be Installed	Land or Water Installation	Piles per Day	Engineer's Estimate of Strikes per Pile	Total Strikes per Day	Attenuation (decibels)	Underwater Sound Level Assumptions					Cumulative Sound Exposure Level at Reference Distance	Transmission Loss Constant	Distance (m) to Threshold			
									Onset of Physical Injury			Behavior Root Mean Square decibels							
									Peak decibels	Cumulative Sound Exposure Level decibels									
										Fish ≥ 2 g	Fish < 2 g								
									Peak	Sound Exposure Level	Root Mean Square	Reference Distance (m)	Source for Sound Level Assumptions			206 decibels	187 decibels	183 decibels	150 decibels
Barge Spud Piles for Bridge Construction (If barges used)	14- to 18-inch steel H piles	Combination of vibratory hammer and impact hammer driver	64	Water	8	1,800	14,400	0	208	177	189	10	Caltrans 2015. Table I.2-3 Hazel Bridge H pile in water.	219	15	14	631	631	3,981
	14- to 18-inch diameter steel pipe piles	Combination of vibratory hammer and impact hammer driver	64	Water	8	1,800	14,400	0	208	176	187	10	Caltrans 2015. Table I.2-3 Stockton wastewater treatment plant pipeline 20-inch pipe pile in water.	218	15	14	541	541	2,929
Temporary Trestle for Bridge Removal	14- to 18-inch steel H piles	Combination of vibratory hammer and impact hammer driver	50	Water	8	1,800	14,400	0	208	177	189	10	Caltrans 2015. Table I.2-3 Hazel Bridge H pile in water.	219	15	14	631	631	3,981
		Combination of vibratory hammer and impact hammer driver	12	Land	8	1,800	14,400	0	198	167	179	10	Caltrans 2015. Table I.2-3 Hazel Bridge H pile in water (minus 10 decibels for land- based pile)	209	15	3	136	136	858
	14- to 18-inch diameter steel pipe piles	Combination of vibratory hammer and impact hammer driver	50	Water	8	1,800	14,400	0	208	176	187	10	Caltrans 2015. Table I.2-3 Stockton wastewater treatment plant pipeline 20-inch pipe pile in water.	218	15	14	541	541	2,929
		Combination of vibratory hammer and impact hammer driver	12	Land	8	1,800	14,400	0	198	171	183	10	Caltrans 2015. Table I.2-3 Stockton wastewater treatment plant pipeline 20-inch pipe pile on land.	213	15	3	251	251	1,585
Barge Spud Piles for Bridge Removal (If barges used)	14- to 18-inch steel H piles	Combination of vibratory hammer and impact hammer driver	16	Water	8	1,800	14,400	0	208	177	189	10	Caltrans 2015. Table I.2-3 Hazel Bridge H pile in water.	219	15	14	631	631	3,981
	14- to 18-inch diameter steel pipe piles	Combination of vibratory hammer and impact hammer driver	16	Water	8	1,800	14,400	0	198	167	179	10	Caltrans 2015. Table I.2-3 Hazel Bridge H pile in water (minus 10 decibels for land- based pile)	218	15	14	541	541	2,929
Proposed Project—With Attenuation																			
Temporary Trestle for cast in place Box Girder Bridge Type (with attenuation) ¹	14- to 18-inch steel H piles	Combination of vibratory hammer and impact hammer driver	80	Water	8	1,800	14,400	5	203	172	184	10	Caltrans 2015. Table I.2-3 Hazel Bridge H pile in water (minus 5 decibels for attenuation)	214	15	6	293	293	1,848
	14- to 18-inch diameter steel pipe piles	Combination of vibratory hammer and impact hammer driver	80	Water	8	1,800	14,400	5	203	171	182	10	Caltrans 2015. Table I.2-3 Stockton wastewater treatment plant pipeline 20-inch pipe pile in water (minus 5 decibels for attenuation)	213	15	6	251	251	1,359

Pile Location	Pile Diameter/ Type	Driver	Total Number of Piles to be Installed	Land or Water Installation	Piles per Day	Engineer's Estimate of Strikes per Pile	Total Strikes per Day	Attenuation (decibels)	Underwater Sound Level Assumptions					Cumulative Sound Exposure Level at Reference Distance	Transmission Loss Constant	Distance (m) to Threshold			
																Onset of Physical Injury			Behavior Root Mean Square decibels
									Peak decibels	Cumulative Sound Exposure Level decibels									
										Fish ≥ 2 g	Fish < 2 g								
206 decibels	187 decibels	183 decibels	150 decibels																
Temporary Trestle for precast Girder Bridge Type (with attenuation) ¹	14- to 18-inch steel H piles	Combination of vibratory hammer and impact hammer driver	84	Water	8	1,800	14,400	5	203	172	184	10	Caltrans 2015. Table I.2-3 Hazel Bridge H pile in water (minus 5 decibels for attenuation)	214	15	6	293	293	1,848
	14- to 18-inch diameter steel pipe piles	Combination of vibratory hammer and impact hammer driver	84	Water	8	1,800	14,400	5	203	171	182	10	Caltrans 2015. Table I.2-3 Stockton wastewater treatment plant pipeline 20-inch pipe pile in water (minus 5 decibels for attenuation)	213	15	6	251	251	1,359
Piers 2 to 4 (with attenuation) ¹	84-inch diameter pile steel shells	Combination of vibratory hammer and impact hammer driver	6	Water	1/4 to 1/2 (2–4 days/ pile)	5,000	2,500	5	211	187	197	10	Caltrans 2015. Table I.2-3. Values for 84-in pile interpolated from data for large diameter piles (minus 5 decibels for attenuation)	221	15	22	1,842	2,929	13,594
Barge Spud Piles for Bridge Construction (If barges used) (with attenuation)	14- to 18-inch steel H piles	Combination of vibratory hammer and impact hammer driver	64	Water	8	1,800	14,400	5	203	172	184	10	Caltrans 2015. Table I.2-3 Hazel Bridge H pile in water (minus 5 decibels for attenuation)	214	15	6	293	293	1,848
	14- to 18-inch diameter steel pipe piles	Combination of vibratory hammer and impact hammer driver	64	Water	8	1,800	14,400	5	203	171	182	10	Caltrans 2015. Table I.2-3 Stockton wastewater treatment plant pipeline 20-inch pipe pile in water (minus 5 decibels for attenuation)	213	15	6	251	251	1,359
Temporary Trestle for Bridge Removal (with attenuation)	14- to 18-inch steel H piles	Combination of vibratory hammer and impact hammer driver	50	Water	8	1,800	14,400	5	203	172	184	10	Caltrans 2015. Table I.2-3 Hazel Bridge H pile in water (minus 5 decibels for attenuation)	214	15	6	293	293	1,848
	14- to 18-inch diameter steel pipe piles	Combination of vibratory hammer and impact hammer driver	50	Water	8	1,800	14,400	5	203	171	182	10	Caltrans 2015. Table I.2-3 Stockton wastewater treatment plant pipeline 20-inch pipe pile in water (minus 5 decibels for attenuation)	213	15	6	251	251	1,359
Barge Spud Piles for Bridge Removal (If barges used) (with attenuation)	14- to 18-inch steel H piles	Combination of vibratory hammer and impact hammer driver	16	Water	8	1,800	14,400	5	203	172	184	10	Caltrans 2015. Table I.2-3 Hazel Bridge H pile in water (minus 5 decibels for attenuation)	214	15	6	293	293	1,848

Note: Cofferdam steel sheet piles will be driven with a vibratory driver. There are no injury criteria for vibratory pile driving because vibratory driving is not known to cause injury to fish. Accordingly, vibratory driving is not evaluated.

¹ Assumes the use of an attenuation system such as a bubble curtain or dewatered cofferdams. 5 decibels attenuation is conservatively assumed.

² Drilling does not introduce a significant amount of vibratory energy into the ground or water and is therefore not evaluated.

³ National Marine Fisheries Service recommends that a transmission loss coefficient of 15 be used unless measured site-specific data is available. No site-specific data is available. Because of the small size of the channel and bends in the channel sound will likely attenuate at a much greater rate. This would reduce the calculated effect distance.

⁴ Where source data is not available for piles driven on land, values are estimated by subtracting 10 decibels from data for piles driven in water.

⁵ Because of uncertainties associated with predicting audibility or detectability at distances beyond 500 to 1,000 meters Caltrans recommends that the predicted effects area not extend more than more than 1,000 meters from the pile driving activity. Calculated distances greater than 1,000 meters are shown for general reference.

Injury Thresholds for Pile Driving Noise

The ability to predict impacts of pile driving noise on listed fish species currently is limited by a lack of information on the key variables and mechanisms linking pile driving sounds with the biological responses of the species of concern. Beginning in 2004, Caltrans—in coordination with the Federal Highway Administration, Oregon Department of Transportation, and Washington Department of Transportation—established a Fisheries Hydroacoustic Working Group to coordinate and improve information related to the assessment of underwater noise impacts on fish from pile driving. Other member agencies include National Marine Fisheries Service (West Coast Region, formerly Northwest and Southwest Regions), United States Fish and Wildlife Service, and California Department of Fish and Wildlife.

The following assessment is based on application of interim noise criteria established by the Fisheries Hydroacoustic Working Group in 2008 (Table 2.3.3-2). These criteria are considered preliminary thresholds for assessing the potential for injury to listed fish species. The peak sound pressure level is considered the maximum sound pressure level a fish can receive from a single strike without injury. The cumulative sound exposure level is considered the total amount of acoustic energy that a fish can receive from a single or multiple strikes without injury. Insufficient data are currently available to support the establishment of a noise threshold for behavioral effects; however, National Marine Fisheries Service generally assumes that a noise level of 150 decibels root mean square is an appropriate threshold for behavioral effects. Caltrans has developed technical guidance on the application of these criteria to pile driving projects.

Table 2.3.3-2. Interim Criteria for Injury to Fish from Pile Driving Activities

Interim Criteria	Agreement in Principle
Peak sound pressure level (sound pressure level)	206 decibels referenced to 1 micro Pascal (for all sizes of fish)
Cumulative sound exposure level (sound exposure level)	187 decibels referenced to 1 micro Pascal ² -second—for fish size ≥ 2 grams 183 decibels referenced to 1 micro Pascal ² -second—for fish size < 2 grams
Behavioral (root mean square)	150 decibels referenced to 1 micro Pascal (for all sizes of fish)

The potential for physical injury to fish from exposure to pile driving sounds was evaluated using the National Marine Fisheries Service Pile Driving Calculator, a spreadsheet model developed by National Marine Fisheries Service to calculate the distances from the pile that sound attenuates to the peak or cumulative criteria. These distances define the area in which the criteria are expected to be exceeded as a result of impact pile driving (potential impact area). The National Marine Fisheries Service spreadsheet calculates these distances based on estimates of the single-strike sound levels for each pile type (measured at 10 meters [32.8 feet] from the pile) and the rate at which sound attenuates with distance. To account for the

exposure of fish to multiple pile driving strikes, the model computes a cumulative sound exposure level for multiple strikes based on the single-strike sound exposure level and the number of strikes per day or pile driving event.

Estimated single-strike sound levels were based on measured sound levels produced by similar piles. The standard sound attenuation rate of 4.5 decibels per doubling of distance was used in the absence of other data. The estimated number of pile strikes per day was provided by the project engineers. Because special-status fish in the biological study area could be smaller than 2 grams during the beginning of the in-water work period (June 1 to October 31) and at other times of the year when spud piles would be driven to anchor the barges (if used), the more protective cumulative sound exposure level threshold of 183 decibels is used to evaluate potential pile driving sounds from driving piles with an impact hammer.

Steel Piles for Temporary Trestles (Both Bridge Girder Types)

Temporary trestles would be installed to support work platforms during bridge removal and bridge construction. The total number of piles that would be installed to support the temporary trestles would vary depending on which bridge girder type is used for the new bridge: cast in place box girder or precast girder. Each bridge girder type would require different trestle configurations with a different number of piles (total number and number driven in water) needed to construct the trestle. For the cast in place box girder bridge type, a total of up to 128 14- to 18-inch-diameter steel piles would be required to construct the temporary trestle, of which 80 piles would be installed in water and 48 piles would be installed on land (Table 2.3.3-1). For the precast girder bridge type, a total of up to 132 14- to 18-inch-diameter steel piles would be required to construct the temporary trestle, of which 84 piles would be installed in water and 48 piles would be installed on land (Table 2.3.3-1).

Separate temporary trestles would be used for bridge removal and for bridge construction. The temporary trestle for bridge construction would be installed over an approximately 3-week period in June in the first year of construction and would remain in place throughout the duration of bridge construction. Once the new bridge is constructed, the trestle for bridge removal would be installed over an approximately 2-week period in June of the third year of construction and would remain in place throughout the duration of bridge removal. The bridge construction and bridge removal trestles would use similar piles and installation, except that up to 62 14- to 18-inch-diameter steel piles would be required to construct the temporary trestle for bridge removal, of which 50 piles would be installed in water and 12 piles would be installed on land (Table 2.3.3-1).

The analysis of noise impacts assumed that up to eight piles would be driven in a day by one operating pile driver, requiring up to a total of 14,400 strikes each day with the impact hammer to drive and test all eight piles (Table 2.3.3-1). Two pile types and pile sizes are being considered: 14- to 18-inch steel H-piles and 14- to 18-inch-diameter steel pipe piles. Both pile types have been evaluated separately for noise impacts using single-strike sound levels and assuming that 18-inch-diameter

piles are used. Other than the total number of piles installed in water and on land, there would be no difference in pile driving assumptions for the temporary trestles for the two bridge girder types.

14- to 18-Inch Steel H Piles

For piles installed in water, impact driving of 14- to 18-inch steel H-piles is expected to produce a single-strike peak sound pressure level of 208 decibels and a single-strike sound exposure level of 177 decibels (measured at 10 meters [32.8 feet] from the pile) (Table 2.3.3-1); the single-strike peak sound pressure level exceeds the interim criteria (Table 2.3.3-2). Peak sound pressure levels above the interim threshold (206 decibels) would extend 14 meters (46 feet) from the source pile. Based on an assumed maximum rate of 14,400 strikes per day (eight piles per day at 1,800 strikes per pile, with one pile driver operating), cumulative sound exposure levels exceeding the interim threshold (183 decibels for fish weighing less than 2 grams) would occur out to 631 meters (2,070 feet) away from the source pile. Use of a sound attenuation device, such as a bubble curtain, would reduce the potential impact area associated with peak sound pressure levels to less than 10 meters (32.8 feet) and the potential impact area associated with cumulative sound exposure levels to an estimated 293 meters (961 feet) (Table 2.3.3-1).

For piles installed on land, impact driving of 14- to 18-inch-diameter steel H-piles is expected to produce a single-strike peak sound pressure level of 198 decibels and a single-strike sound exposure level of 167 decibels (measured at 10 meters [32.8 feet] from the pile) (Table 2.3.3-1); the single-strike peak sound pressure level would not exceed the interim criteria (Table 2.3.3-2). Peak sound pressure levels above the interim threshold (206 decibels) would extend less than 10 meters (32.8 feet) from the source pile. Based on an assumed maximum rate of 14,400 strikes per day (eight piles per day at 1,800 strikes per pile, with one pile driver operating), cumulative sound exposure levels exceeding the interim threshold (183 decibels for fish weighing less than 2 grams) would occur out to 136 meters (446 feet) away from the source pile (Table 2.3.3-1). Because the piles would be driven on land, there would be no opportunity to further attenuate noise levels.

14- to 18-Inch-Diameter Steel Pipe Piles

For piles installed in water, impact driving of 14- to 18-inch-diameter steel pipe piles is expected to produce a single-strike peak sound pressure level of 208 decibels and a single-strike sound exposure level of 176 decibels (measured at 10 meters [32.8 feet] from the pile) (Table 2.3.3-1); the single-strike peak sound pressure level exceeds the interim criteria (Table 2.3.3-2). Peak sound pressure levels above the interim threshold (206 decibels) would extend 14 meters (46 feet) from the source pile. Based on an assumed maximum rate of 14,400 strikes per day (eight piles per day at 1,800 strikes per pile, with one pile driver operating), cumulative sound exposure levels exceeding the interim threshold (183 decibels for fish weighing less than 2 grams) would occur out to 541 meters (1,775 feet) away from the source pile. Use of a sound attenuation device, such as a bubble curtain, would reduce the potential impact area associated with peak sound pressure levels to less than 10

meters (32.8 feet) and the potential impact area associated with cumulative sound exposure levels to an estimated 251 meters (824 feet) (Table 2.3.3-1).

For piles installed on land, impact driving of 14- to 18-inch-diameter steel pipe piles is expected to produce a single-strike peak sound pressure level of 198 decibels and a single-strike sound exposure level of 171 decibels (measured at 10 meters [32.8 feet] from the pile) (Table 2.3.3-1); the single-strike peak sound pressure level does not exceed the interim criteria (Table 2.3.3-2). Peak sound pressure levels above the interim threshold (206 decibels) would extend less than 10 meters (32.8 feet) from the source pile. Based on an assumed maximum rate of 14,400 strikes per day (eight piles per day at 1,800 strikes per pile, with one pile driver operating), cumulative sound exposure levels exceeding the interim threshold (183 decibels for fish weighing less than 2 grams) would occur out to 251 meters (824 feet) away from the source pile (Table 2.3.3-1). Because the piles would be driven on land, there would be no opportunity to further attenuate noise levels.

Steel Shell Piles for Permanent Bridge Piers

Construction of the new bridge would require driving a total of six piles (for Piers 2 to 4) to support the new four-span bridge. The 84-inch-diameter pile steel shells would be embedded 90 to 125 feet beneath the existing river bottom. All six piles would be installed in the San Joaquin River, in water depths ranging from approximately 5 to 13 feet.

The piles would be installed in one construction season. In-water piles would be within bubble curtains using trestle- or barge-mounted cranes. The pile steel shells first would be positioned and allowed to sink under their own weight and/or pushed into the river bottom. The shells would be advanced further with a vibratory hammer to the maximum extent possible, and then driven to the required depth using an impact pile driver. Installation of the pile steel shells would occur in the proposed in-water work window of June 1 to October 31. After the steel shell is installed, further work on the foundation within the steel shell can continue outside of the in-water work window.

For the analysis, it was assumed that driving each pile to the required depth would take from 2 to 4 days and up to 2,500 strikes per day (one-quarter to one-half pile per day at 5,000 strikes per pile) with the impact hammer to drive and test each pile (Table 2.3.3-1).

84-Inch-Diameter Piles

Impact driving of the 84-inch-diameter pile steel shells for in-water Piers 2 to 4 is expected to produce a single-strike peak sound pressure level of 216 decibels and a single-strike sound exposure level of 192 decibels (measured at 10 meters [32.8 feet] from the pile) (Table 2.3.3-1). The single-strike peak sound pressure level and single-strike sound exposure level exceed the interim criteria (Table 2.3.3-2). Peak sound pressure levels above the interim threshold (206 decibels) would extend 46 meters (151 feet) from the source pile. Based on an assumed maximum rate of

2,500 strikes per day (one-half pile per day), cumulative sound exposure levels exceeding the interim threshold (183 decibels for fish weighing less than 2 grams) would occur out to 6,310 meters (20,703 feet) away from the source pile (Table 2.3.3-1). Use of a sound attenuation device, such as a bubble curtain, would reduce the potential impact area associated with peak sound pressure levels to 22 meters (72 feet) and the potential impact area associated with cumulative sound exposure levels to 2,929 meters (9,610 feet) (Table 2.3.3-1).

Steel Piles for Temporary Barge Installation (If Barges Used)

Barges may be used instead of temporary trestles to provide a floating work platform during bridge removal as well as for bridge construction for the precast girder bridge type. For bridge removal, up to two barges may be used. For bridge construction with the precast girder bridge type, up to three barges may be used. Each barge would be secured in place using four 14- to 18-inch steel H-piles or 14 to 18-inch-diameter steel pipe (spud piles) driven into the channel bottom as the temporary trestle piles after each move.

For the analysis, it was assumed that up to eight spud piles would be driven in a single day each time barges are moved, requiring up to a total of 14,400 strikes with the impact hammer to drive and test all piles (Table 2.3.3-1). Two pile types and pile sizes are being considered: 14- to 18-inch steel H-piles and 14- to 18-inch-diameter steel pipe piles. Noise impacts associated with both pile types have been evaluated separately, using single-strike sound levels assuming that 18-inch-diameter piles are used.

Impact driving of 14- to 18-inch steel H-piles is expected to produce a single-strike peak sound pressure level of 208 decibels and a single-strike sound exposure level of 177 decibels (measured at 10 meters [32.8 feet] from the pile) (Table 2.3.3-1); the single-strike peak sound pressure level exceeds the interim criteria (Table 2.3.3-2). Peak sound pressure levels above the interim threshold (206 decibels) would extend 14 meters (46 feet) from the source pile. Based on an assumed maximum rate of 14,400 strikes per day (eight piles per day at 1,800 strikes per pile, with one pile driver operating), cumulative sound exposure levels exceeding the interim threshold (183 decibels for fish weighing less than 2 grams) would occur out to 631 meters (2,070 feet) away from the source pile. Use of a sound attenuation device, such as a bubble curtain, would reduce the potential impact area associated with peak sound pressure levels to less than 10 meters (32.8 feet) and the potential impact area associated with cumulative sound exposure levels an estimated 293 meters (961 feet) (Table 2.3.3-1).

Impact driving of 14- to 18-inch-diameter steel pipe piles is expected to produce a single-strike peak sound pressure level of 208 decibels and a single-strike sound exposure level of 176 decibels (measured at 10 meters [32.8 feet] from the pile) (Table 2.3.3-1); the single-strike peak sound pressure level exceeds the interim criteria (Table 2.3.3-2). Peak sound pressure levels above the interim threshold (206 decibels) would extend 14 meters (46 feet) from the source pile. Based on an

assumed maximum rate of 14,400 strikes per day (eight piles per day at 1,800 strikes per pile, with one pile driver operating), cumulative sound exposure levels exceeding the interim threshold (183 decibels for fish weighing less than 2 grams) would occur out to 541 meters (1,775 feet) away from the source pile. Use of a sound attenuation device, such as a bubble curtain, would reduce the potential impact area associated with peak sound pressure levels to less than 10 meters (32.8 feet) and the potential impact area associated with cumulative sound exposure levels to an estimated 251 meters (824 feet) (Table 2.3.3-1).

Sheet Piles for Temporary Cofferdams

Cofferdams would be installed to demolish the three in-water piers of the existing bridge. The sheet piles for the cofferdams would be installed and removed with a vibratory pile driver; therefore, this method of installation and removal would not generate high underwater noise levels. The sheet piles for the cofferdams would be installed and removed during the in-water construction period (June 1 to October 31).

Increased Exposure to Contaminants

Disturbance and resuspension of river bottom sediments during in-water construction pose a risk to fish species because of potential increases in the exposure to contaminated sediments.

Mud and silt characterize bottom substrate in the project area. Contaminants in the substrate that show elevated concentrations (i.e., Section 303[d] impairments for San Joaquin River and Southern Delta Waterways) include mercury, pesticides (i.e., Chlorpyrifos, Diazinon, dichlorodiphenyltrichloroethane), and other unknown toxicities. Impairments for the broader Delta waterways include heavy metals such as selenium, cadmium, and nickel. Resuspension of sediments with adsorbed metals during in-water construction has the potential to degrade water quality and food resources in the biological study area. In addition, suspended particulate material could be transported to other locations in the San Joaquin River as a result of transport by river and tidal currents, thus leading to potential degradation of water quality and food resources beyond the biological study area. Juvenile and sub-adult white sturgeon may be present in the biological study area year-round and may be more susceptible than other fish species to contaminated sediments through direct external contact with sediments and ingestion of sediments along with benthic food organisms. Their long lifespan allows them to accumulate high body burdens of contaminants, with the potential to reach concentrations with deleterious physiological effects.

In-water construction would be limited to pile driving for temporary trestles, installation and removal of sheet piles for cofferdams and installation of steel casings. Because in-water construction with the potential to disturb channel substrates would be limited to daylight hours each day, disturbance of channel substrate and the potential for increased contaminants would be temporary and localized and of short duration. Assuming that mobilization of sediment is also an

indication of contaminant mobilization, the proposed in-water construction methods and construction best management practices should minimize the potential for increased contaminants.

Contaminant Spills

Construction activities that occur in or near the San Joaquin River channel can result in the discharge of contaminants that are potentially lethal to fish. Operation of heavy equipment, cranes, pile drivers, drilling rigs, tugboats, and other construction equipment during bridge removal and construction can result in spills and leakage of fuel, lubricants, hydraulic fluids, and coolants. Other sources of potential contamination include asphalt, wet concrete, and other materials that may come into direct contact with surface water during construction activities. For example, water that is displaced from within pile steel shells as concrete is being poured could be discharged accidentally to the river, thereby contaminating the river with uncured concrete (which can raise pH) and related compounds.

Juvenile and sub-adult white sturgeon may be present in the biological study area year-round and may be more susceptible than other fish species to contaminants through direct external contact with contaminated sediments and ingestion of contaminated sediments or benthic food organisms. Their long lifespan allows them to accumulate high body burdens of contaminants, with the potential to reach concentrations with deleterious physiological effects.

Erosion and Mobilization of Sediment

Site clearing, earthwork, driving of pile steel casings, driving and removal of piles for the temporary trestles, and vibrating and removal of sheet piles for cofferdams would result in disturbance of soil and riverbed sediments, potentially causing temporary increases in turbidity and suspended sediments in the San Joaquin River. In addition, dewatering and soil removal from the inside of the cofferdams could result in temporary increases in turbidity and suspended sediments in the river, if water (and associated spoils) from within the cofferdams is not properly disposed of or contained and treated before being discharged back to the river.

The potential for disturbance of riverbed sediments and associated increases in sedimentation and turbidity in the San Joaquin River is anticipated to be greatest during activities to extract the piles used for the temporary trestles and cofferdams; these activities would result in greater disturbance to riverbed sediments than would occur during installation. In addition, construction of temporary trestles would result in more disturbance to river bottom sediments than the use of barges because of the greater number of piles that would need to be driven and removed for the trestles compared to the barges.

Juvenile and sub-adult white sturgeon may be present in the biological study area year-round and may be more susceptible than other fish species to sediments because of their benthic nature and greater reliance on benthic food organisms.

Loss of Aquatic Habitat

Installation of the sheet piles for the temporary cofferdams and installation of the piles for the temporary trestles (or spud piles for barges if used instead of trestles) would result in the temporary loss of aquatic habitat (substrate and water column) including foraging and rearing habitat for juvenile and sub-adult sturgeon. This temporary loss of aquatic habitat would be equal to the cumulative area (substrate) and volume (water column) of the in-water (i.e., below mean high water line) cofferdams and piles. No permanent loss of aquatic habitat would result from the installation of temporary cofferdams or piles for the temporary trestles or barges. In addition, no permanent loss of aquatic habitat would result from placement of the approximately 300 cubic yards and 2,700 square feet of rock slope protection at the bridge abutments because all of this rock slope protection will be located above the ordinary high water mark. The proposed project would result in a permanent net gain of aquatic habitat because the in-water footprint of the new bridge would be smaller than the in-water footprint of the existing bridge. These impacts are discussed below.

Installation of temporary cofferdams for bridge removal and piles for the temporary trestles for bridge removal and new bridge construction would result in a net temporary loss of approximately 2,539 to 5,636 square feet (0.06 to 0.13 acre) of substrate habitat and a net temporary loss of approximately 21,289 to 47,143 cubic feet of water column habitat below the mean high water line (Table 2.3.3-3). If barges are used instead of trestles for bridge removal and bridge construction, the net temporary loss of substrate habitat and water column habitat below the mean high water line would be slightly less than the temporary loss of this habitat for temporary trestles (Table 2.3.3-4). Independent of whether temporary trestles or barges are used during bridge removal and construction, there would be a net permanent increase (gain) of 1,797 square feet (0.04 acre) of substrate habitat and net permanent increase (gain) of 13,817 cubic feet of water column habitat below the mean high water line associated with the project (Table 2.3.3-3).

Table 2.3.3-3. Amount of Temporarily and Permanently Affected Aquatic Habitat below the Mean High Water Line in the San Joaquin River Resulting from the Proposed Project (Trestle Option)

Feature/Habitat	Manthey Road Bridge (Existing Conditions)	New Bridge (With-Project Conditions)	Net Change: Temporary Impact	Net Change: Permanent Impact
<i>Temporary Cofferdams^a</i>				
Substrate area (square feet)	Not Applicable	2,400–5,400	2,400–5,400	Not Applicable
Water column volume (cubic feet)	Not Applicable	19,920–44,820	19,920–44,820	Not Applicable
<i>Temporary Trestle Piles^b</i>				
Substrate area (square feet)	Not Applicable	139–236 ^c	139–236 ^c	Not Applicable
Water column volume (cubic feet)	Not Applicable	1,369–2,323 ^c	1,369–2,323 ^c	Not Applicable
<i>Permanent Bridge Piers</i>				
Substrate area (square feet)	2,028	231	Not Applicable	(1,797)
Water column volume (cubic feet)	16,189	2,372	Not Applicable	(13,817)
TOTALS				
Substrate area (square feet)			2,539–5,636 ^c	(1,797)
Water column volume (cubic feet)			21,289–47,143 ^c	(13,817)

Values in parentheses represent negative values (i.e., a reduction in area/volume relative to existing conditions).

^a Assumes cofferdams are needed for bridge removal only.

^b Separate trestles required for bridge construction and bridge removal.

^c Area affected depends on trestle configuration to construct cast in place box girder or precast girder, and whether 14-inch or 18-inch piles are used to install temporary trestles.

The temporary impact on the substrate and water column from constructing the new bridge piers would result in minimal short-term effects on rearing and foraging habitat for sturgeon. The net gain in substrate and water column habitat associated with the smaller footprint of the new bridge piers would result in a small, beneficial effect on rearing and foraging habitat for sturgeon over the long term.

Table 2.3.3-4. Amount of Temporarily Affected Aquatic Habitat below the Mean High Water Line in the San Joaquin River Resulting from the Proposed Project (Barge Option)

Feature/Habitat	Manthey Road Bridge (Existing Conditions)	New Bridge (With-Project Conditions)	Net Change (Temporary Impact)
<i>Temporary Cofferdams^a</i>			
Substrate area (square feet)	Not Applicable	7,486	2,400–5,400
Water column volume (cubic feet)	Not Applicable	38,500	19,920–44,820
<i>Temporary Barges</i>			
Substrate area (square feet)	Not Applicable	11–21	11–21
Water column volume (cubic feet)	Not Applicable	113–185	113–185
TOTALS			
Substrate area (square feet)			2,411–5,421
Water column volume (cubic feet)			20,033–45,005

^a Depends on cofferdam dimensions.

Temporary and Permanent Loss of Shaded Riverine Aquatic Cover

Implementation of the proposed project would require that vegetation be trimmed or removed to demolish the existing Manthey Road Bridge and to construct temporary access roads and the new bridge and roadway approaches.

Construction of the proposed project would result in the temporary loss of up to 0.08 acre and the permanent loss of up to 0.07 acre of riparian woodland within the biological study area, of which approximately 0.031 acre (0.016 acre of temporary loss and 0.014 acre of permanent loss) is below the mean high water line and contributes to overhead (shade) and instream Shaded Riverine Aquatic cover. Clearing of the existing riparian woodland that contributes to Shaded Riverine Aquatic cover would result in the temporary loss of up to 271 linear feet and the permanent loss of up to 62 linear feet of overhead Shaded Riverine Aquatic cover (shade) along the shoreline of the San Joaquin River (Table 2.3.3-5).

Table 2.3.3-5. Impacts on Overhead Shaded Riverine Aquatic Cover Vegetation in the Biological Study Area

Riverbank	Temporary Loss (feet)	Permanent Loss (feet)
Right ^a	271	62
Left ^a	0	0
Total	271	62

^a Right and left banks are from the perspective of facing downstream.

Riparian vegetation is important in controlling stream bank erosion, contributing to instream structural diversity and habitat complexity, and maintaining undercut banks. In addition, canopy cover (overhanging vegetation [a form of Shaded Riverine Aquatic cover]) maintains shade that is necessary to reduce thermal input and provides an energy input to the aquatic habitats in the form of fallen leaves and insects (a food source for fish). Shaded Riverine Aquatic cover also provides fish with protection from predators in the form of undercut banks, branches, roots, and instream woody material (e.g., logs).

United States Fish and Wildlife Service mitigation policy identifies California's riparian habitats, including Shaded Riverine Aquatic cover habitat, as a Resource Category 2 habitat. The designation criterion for habitat in Resource Category 2 is "habitat to be impacted is of high quality for evaluation species and is relatively scarce or becoming scarce on a national basis or in the ecoregion section," for which "no net loss of in-kind habitat value" is recommended. In addition, National Marine Fisheries Service will likely recommend revegetating on site at a 3:1 ratio (3 units replaced for every 1 unit of affected habitat) with native riparian species to facilitate the development of Shaded Riverine Aquatic cover habitat.

Fish Entrapment in Cofferdams

Cofferdams would be required to remove existing in-water piers during bridge removal. Cofferdams would be constructed of sheet piles; when installed, each cofferdam would be approximately 25 feet wide and 50 feet long. Cofferdams would be installed during the proposed in-water construction period (June 1 to October 31), when listed fish species generally are either absent or their abundance is reduced, although it may be necessary to remove one or more sheet piles during winter or spring, if floodwaters are predicted to overtop cofferdams. Fish would be at risk of entrapment following closure of the cofferdams.

Increases in Impervious Surface Area and Stormwater Runoff

The proposed project would result in 5,866 square feet (0.13 acre) of added impervious surface that would have the potential to increase runoff volume in the San Joaquin River. Traffic loads would not increase as a result of the project; therefore, loading of vehicle-related particulates onto the bridge deck attributable to the project is expected to be unchanged relative to existing conditions.

Heavy metals, oil, grease, and polycyclic aromatic hydrocarbons are common pollutants in road runoff. Some of these pollutants can accumulate in stream sediments with lethal and sublethal consequences for fish and other aquatic species, particularly during "first flush" rain events. Polycyclic aromatic hydrocarbons are organic compounds—containing only carbon and hydrogen—that occur in motor vehicle exhaust, petroleum products, materials associated with asphalt, and various other municipal and industrial sources. Polycyclic aromatic hydrocarbons are widely distributed in the environment and are significant environmental pollutants because of their carcinogenicity and tendency to bioaccumulate. Polycyclic aromatic hydrocarbons are readily absorbed by fish and other aquatic organisms and,

depending on concentration, can lead to lethal and deleterious sublethal effects in these organisms. Polycyclic aromatic hydrocarbons tend to adsorb to any particulate matter, including fine sediment; therefore, relative concentrations of polycyclic aromatic hydrocarbons in aquatic ecosystems are generally highest in sediments, followed by aquatic biota and the water column. There is evidence that urban runoff containing roadway sediment may be a primary source for polycyclic aromatic hydrocarbon input to aquatic habitats and that a significant contribution to the polycyclic aromatic hydrocarbons content of roadway sediment comes from materials associated with asphalt.

Although the new bridge would represent added impervious surface area, the proposed project would not result in a substantial increase in impervious surface area in the project area relative to existing conditions because the new bridge would replace the existing Manthey Road Bridge, and existing traffic would use the new bridge. In addition, stormwater runoff from the new bridge would be routed off the bridge. Therefore, the proposed project is not anticipated to contribute to a cumulative water quality impact during operations.

Increase in Overwater Structure

Overwater structures can alter underwater light conditions and provide potentially favorable holding conditions for juvenile and adult fish, including species that prey on juvenile fishes. Temporary shading attributable to the presence of the temporary trestles, or barges if used, during bridge removal and bridge construction and permanent shading from the new bridge have the potential to reduce primary productivity of affected habitats and increase the number of predatory fishes (e.g., striped bass, largemouth bass) holding in the biological study area and/or their ability to prey on juvenile fishes.

Temporary trestle shading could occur year-round if the work platform is not removed during winter and spring. The temporary trestles would be 40 feet wide with 30-foot spans and would extend across the entire width of the river, with additional 20-foot-long extensions at proposed pier locations. If barges are used for bridge removal and bridge construction, up to three barges, each approximately 40 feet wide and 150 feet long (6,000 square feet [0.14 acre]), would be present year-round and provide a total of 18,000 square feet (0.41 acre) of temporary over-water structure. Because the barges would be moved periodically as bridge removal and bridge construction progress, the effects of barge shading would be more localized than the use of trestles.

Project construction would create up to approximately 19,032 square feet (0.44 acre) of temporary over-water structure from temporary trestles. Up to 18,000 square feet (0.41 acre) of temporary over-water structure would be created if barges are used instead of trestles for bridge removal and bridge construction. Approximately 17,490 square feet (0.40 acre) of permanent over-water structure would be created as a result of the new bridge at a location where no over-water structure currently exists. (National Marine Fisheries Service has indicated that the existing bridge should not

be considered part of the environmental baseline; therefore the analysis of shade impacts on critical habitat should assume the addition of the entire footprint of the new bridge).

Table 2.3.3-6. Amount of Overwater Structure (Shade) on the San Joaquin River under Existing and With-Project Conditions, and the Net Increase Attributable to the Project

Overwater Structure	Square Feet [Acre] of Shaded Area ^a Existing	Square Feet [Acre] of Shaded Area ^a With-Project	Square Feet [Acre] of Shaded Area ^a Net Increase
Trestles (temporary)	Not Applicable	19,032 [0.44] ^b	19,032 [0.44] ^b
Barges (temporary)	Not Applicable	18,000 [0.41]	18,000 [0.41]
Bridge (permanent)	11,624 [0.27]	17,490 [0.40]	5,866 [0.13]

^a Based on width of river at mean high water line.

^b A separate 8,045 square feet of overwater structure associated with the temporary trestle to demolish the existing bridge would occur in the third construction season. However, it would not shade the river at the same time as the temporary trestle for bridge construction.

Introduction of Aquatic Invasive Species

During construction, the operation of barges and other in-water equipment originating from regions or areas outside the project area could result in the introduction and subsequent spread of aquatic invasive species, including among others the Asian overbite clam (*Corbula amurensis*), quagga mussel (*Dreissena bugensis*), zebra mussel (*Dreissena polymorpha*), hydrilla (*Hydrilla verticillata*), and Brazilian elodea (*Egeria densa*). These species can adversely affect native fishes and other ecologically and economically important species through a number of mechanisms, including competition for resources, predation, parasitism, interbreeding, disease transmission, or changes in the physical or chemical attributes of aquatic habitat.

Increase in Direct Lighting on San Joaquin River

Temporary lighting of work areas to facilitate nighttime security and/or construction, especially at construction sites adjacent to or over the San Joaquin River, and permanent lighting associated with the new bridge may result in increased nighttime light intensity on the water surface of the San Joaquin River. Increases in direct lighting of the San Joaquin River at night may affect the migratory behavior of juvenile fish, alter behavior of animals that prey on fish (e.g., piscivorous birds, mammals, and fish) in adjacent and affected habitats, or make juvenile fish more visible to predators, thereby leading to increased mortality of some fish species through increased predation.

Central Valley Fall- and Late Fall-Run Chinook Salmon Evolutionarily Significant Unit

Effects of the Build Alternative on Central Valley fall-run Chinook salmon would be the same as those described for white sturgeon, except that juvenile fall-run Chinook

salmon may be at higher risk for injury or mortality related to pile driving than adult Chinook salmon and adult and juvenile white sturgeon because of their smaller size and presumed greater sensitivity to noise impacts. Central Valley fall-run Chinook salmon habitats also are protected under the Magnuson-Stevens Act as essential fish habitat. The San Joaquin River, including the portion within the biological study area, is considered essential fish habitat for Chinook salmon. Effects of the Build Alternative on Chinook salmon essential fish habitat would be the same as the habitat effects described for white sturgeon.

River Lamprey

Effects of the Build Alternative on river lamprey would be the same as those described for white sturgeon, except that river lamprey ammocoetes (larvae) may be at higher risk for injury or mortality related to pile driving than adult and juvenile white sturgeon because of their decreased mobility and their smaller size and presumed greater sensitivity to noise impacts than sturgeon.

Pacific Lamprey

Effects of the Build Alternative on Pacific lamprey would be the same as those described for white sturgeon, except that Pacific lamprey ammocoetes (larvae) may be at higher risk for injury or mortality related to pile driving than adult and juvenile white sturgeon because of their decreased mobility and their smaller size and presumed greater sensitivity to noise impacts than sturgeon.

Sacramento Splittail

Effects of the Build Alternative on Sacramento splittail would be the same as those described for white sturgeon, except that juvenile and adult splittail may be at higher risk for injury or mortality related to pile driving than adult and juvenile white sturgeon because of their smaller size and presumed greater sensitivity to noise impacts.

No-Build Alternative

Under the No Build Alternative, no construction would occur and, therefore, no impacts on fish and aquatic habitat related to suspended sediment and turbidity, pile driving and general construction noise, artificial lighting, temporary loss of aquatic habitat [substrate and water column], loss of Shaded Riverine Aquatic cover habitat, and added overwater structure would occur as described above.

Avoidance, Minimization, and/or Mitigation Measures

In addition to avoidance and minimization measures to install orange construction fencing between the construction area and adjacent sensitive resources, conduct environmental awareness training for construction employees, and conduct biological monitoring and Mitigation Measure Bio-1 to compensate for effects on riparian woodland and riparian scrub discussed in Section 2.3.1, *Natural Communities*, and the avoidance and minimization measure to protect water quality and prevent erosion and sedimentation in drainages and wetlands discussed in

Section 2.3.2, *Wetlands and Other Waters*, the following avoidance, minimization, and mitigation measures would be necessary for effects on animal species.

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

To avoid potential injury to or mortality of western pond turtles, the City will retain a qualified biologist to conduct a preconstruction survey for western pond turtles within 24 hours of the start of construction. A biologist will also conduct a survey immediately prior to work being conducted along the shoreline of the river. The biologist will survey the aquatic habitat, riverbanks, and adjacent ruderal grassland habitat within the construction area.

A biological monitor will be present during ground disturbing activities occurring along the shoreline. If a turtle is found within the immediate work area, the biological monitor will stop work in that area until the turtle is able to move out of the work area on its own or a biologist with a current Scientific Collecting Permit and a Memorandum of Understanding from California Department of Fish and Wildlife specifically to relocate western pond turtle for the project will move the turtle out of the work area, approximately 50 feet away, and along the river shoreline so they may safely retreat into the water.

Conduct Surveys for Western Burrowing Owl and Implement Protective Measures if Found

A qualified biologist will conduct two separate preconstruction surveys for burrowing owl no less than 14 days prior to and within 24 hours of initiating ground-disturbing activities within suitable habitat. The preconstruction survey area will encompass the designated work area (including staging and access areas) and a 500-foot buffer around this area where access is permitted.

If an active burrow is present near a work area during the nesting season (February 1 to August 31), a qualified biologist will establish a no-activity zone that extends a minimum of 250 feet around the burrow. If burrowing owls are present at the site during the non-breeding season (September 1 through January 31), a qualified biologist will establish a no-activity zone that extends a minimum of 150 feet around the burrow.

If a designated no-activity zone for breeding or non-breeding burrowing owls cannot be established, a wildlife biologist experienced in burrowing owl behavior will evaluate site-specific conditions and, in coordination with the California Department of Fish and Wildlife, recommend a smaller buffer (if possible) that minimizes the potential to disturb the owls (and still allows reproductive success during the breeding season). The site-specific buffer will be established by taking into consideration the type and extent of the proposed activity occurring near the occupied burrow, the duration and timing of the activity, the sensitivity and habituation of the owls to existing conditions, and the dissimilarity of the proposed

activity to background activities. The wildlife biologist will monitor all construction activities that occur within the reduced buffer.

If burrowing owls are present within the direct disturbance area and cannot be avoided during the non-breeding season (generally September 1 through January 31), passive relocation techniques (e.g., installing one-way doors at burrow entrances) will be used. Passive relocation also may be used during the breeding season (February 1 through August 30) if a qualified biologist, coordinating with California Department of Fish and Wildlife, determines through site surveillance that the burrow is not occupied by a breeding pair, young, or eggs. Passive relocation will be accomplished by installing one-way doors (e.g., modified dryer vents or other California Department of Fish and Wildlife-approved methods). The one-way doors will be left in place for a minimum of 1 week and monitored daily to ensure that the owls have left the burrow. The burrow will be excavated using hand tools, and a section of flexible plastic pipe (at least 3 inches in diameter) will be inserted into the burrow tunnel during excavation to maintain an escape route for any animals that may be inside the burrow.

Conduct Vegetation Removal during the Non-Breeding Season and Conduct Preconstruction Surveys for Nesting Migratory Birds, Including Special-Status Birds

The City and/or its construction contractor will remove vegetation during the non-breeding season for most migratory birds (generally between September 15 and January 1) to the extent practicable.

If construction activities (including vegetation removal) would occur during the breeding season, the City will retain a qualified wildlife biologist with knowledge of the relevant species to conduct nesting surveys before the start of construction. A minimum of three separate surveys will be conducted for migratory birds, including raptors. Surveys will include a search of all trees and shrubs, ruderal areas, and grassland vegetation that provide suitable nesting habitat within the limits of disturbance. In addition, a 500-foot area around the limits of disturbance will be surveyed for nesting raptors. Surveys should occur during the height of the breeding season (March 1 to June 1), with one survey occurring in each of 2 consecutive months within this peak period and the final survey occurring 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 will be established around the site to avoid disturbance or destruction of the nest site 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 construction area (this date varies by species). The extent of these buffers will be determined by the biologist in coordination with the California Department of Fish and Wildlife 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.

Conduct Preconstruction Surveys for Roosting Bats and Implement Protective Measures, if Necessary

To avoid and minimize potential impacts on pallid bat, western red bat, and non-special-status bat species, the City will implement the following surveys and restrictions, as appropriate based on the timing of activities:

Preconstruction Bridge Surveys

Prior to the replacement of Manthey Road Bridge, a biologist experienced with bats will conduct a detailed survey of the bridge, looking for evidence of roosting bats, including areas over the river (this effort may require the use of a boat), no less than 2 months prior to demolition of the existing bridge.

If bat sign is detected, biologists will conduct an evening visual emergence survey of the bridge, from a half hour before sunset to 1–2 hours after sunset for a minimum of 2 nights no more than 2 months prior to when bridge work would be taking place. Night-vision goggles and/or full-spectrum acoustic detectors will be used during emergence surveys to assist in species identification. All emergence surveys will be conducted during favorable weather conditions (calm nights with temperatures conducive to bat activity and no precipitation predicted).

If a potentially active bat roost is in the bridge, passive monitoring with full-spectrum bat detectors will be used to assist in determining species present. A minimum of 4 nights of acoustic monitoring surveys will be conducted no more than 2 months prior to when construction would be taking place. If site security allows, detectors will be set to record bat calls for the duration of each night. To the extent possible, all monitoring will be conducted during favorable weather conditions (calm nights with temperatures conducive to bat activity and no precipitation predicted). The biologists will analyze the bat call data using appropriate software and will prepare a report that will be submitted to the City and the California Department of Fish and Wildlife.

Preconstruction Tree Surveys

Within 2 weeks prior to tree trimming or removal, a qualified biologist will examine trees to be removed or trimmed for suitable bat roosting habitat. High-quality habitat features (e.g., large tree cavities, basal hollows, loose or peeling bark, larger snags) will be identified and the area around these features searched for bats and bat sign (e.g., guano, culled insect parts, staining). Riparian woodland and stands of mature broadleaf trees will be considered potential habitat for solitary foliage roosting bat species.

If bat sign is detected, biologists will conduct an evening visual emergence survey of the source habitat feature, from a half hour before sunset to 1–2 hours after sunset for a minimum of 2 nights within the season that construction would be taking place. Night-vision goggles and/or full-spectrum acoustic detectors will be used during

emergence surveys to assist in species identification. All emergence surveys will be conducted during favorable weather conditions (calm nights with temperatures conducive to bat activity and no precipitation predicted).

If a potentially active bat roost is identified within a tree proposed for removal, passive monitoring with full-spectrum bat detectors will be used to assist in determining species present. A minimum of 4 nights of acoustic monitoring surveys will be conducted within the season that construction would be taking place. If site security allows, detectors should be set to record bat calls for the duration of each night. To the extent possible, all monitoring will be conducted during favorable weather conditions (calm nights with temperatures conducive to bat activity and no precipitation predicted). The biologists will analyze the bat call data using appropriate software and prepare a report that will be submitted to the City and California Department of Fish and Wildlife.

Protective Measures

Avoidance and minimization measures may be necessary if it is determined that bats are using the bridge or trees as roost sites, or if sensitive bats species are detected during acoustic monitoring. Appropriate measures will be determined in coordination with California Department of Fish and Wildlife and may include any combination of the measures listed below.

- Trees will be removed in pieces, rather than felling the entire tree.
- If a maternity roost is located, whether solitary or colonial, that roost will remain undisturbed with a buffer as determined in consultation with California Department of Fish and Wildlife until September 15 or until a qualified biologist has determined that the roost is no longer active.
- If a non-maternity roost in a tree is found, every effort should be made to avoid the roost, as methods to evict bats from trees are largely untested.
- If a non-maternity roost is found within the bridge or trees that cannot be avoided, eviction will be attempted using procedures designed in consultation with California Department of Fish and Wildlife to reduce the likelihood of mortality of evicted bats. In all cases, the following stipulations will be observed.
 - Eviction will not occur before September 15 and will match the timeframe for tree removal approved by California Department of Fish and Wildlife for nesting birds and other sensitive wildlife.
 - Qualified biologists will carry out or oversee the eviction tasks and will monitor the tree trimming/removal.
 - Eviction will take place late in the day or in the evening to reduce the likelihood of evicted bats falling prey to diurnal predators.
 - Eviction will take place during weather and temperature conditions conducive to bat activity.

- Structural changes may be made to the roost, to create conditions in the roost that are undesirable to roosting bats and encourage the bats to leave on their own (e.g., open additional portals so that temperature, wind, light and precipitation regime in the roost change). Structural changes to the roost will be authorized by California Department of Fish and Wildlife and will be performed without harming bats.
- Non-injurious harassment at the roost site, such as ultrasound deterrents or other sensory irritants, may be used to encourage bats to leave on their own. Prior to bridge work and/or tree removal/trimming and after other eviction efforts have been attempted, any confirmed roost site (bridge or tree) will be gently shaken or repeatedly struck with a heavy implement such as a sledge hammer or an axe; several minutes should pass before beginning bridge work, felling trees, or trimming limbs to allow bats time to arouse and leave the roost. The biologists will search downed vegetation for dead and injured bats. The presence of dead or injured bats will be reported to California Department of Fish and Wildlife. Injured bats will be transported to the nearest California Department of Fish and Wildlife-permitted wildlife rehabilitation facility.

Conduct All In-Water Construction Activities between June 1 and October 31, and only during Daylight Hours

The City proposes to conduct all in-water activities (including construction of the new bridge and removal of the existing bridge) between June 1 and October 31 to avoid or minimize causing disturbance and injury to, or mortality of, special-status fish species in the affected reaches of the San Joaquin River. In addition, in-water work will be conducted only during daylight hours to provide fish in the affected reaches of the San Joaquin River, with an extended quiet period during nighttime hours for feeding and unobstructed passage.

Limiting in-water construction to the June 1 to October 31 period would achieve several goals:

- In-water construction with the potential to generate harmful levels of underwater noise (e.g., driving piles with an impact hammer) would avoid the primary migration and spawning periods of special-status fish species.
- The timing of in-water construction would be concurrent with the period special-status fish species, including listed species, are less abundant in, or absent from, the affected reaches of the San Joaquin River.
- The length of the in-water construction period would be maximized by starting June 1, thereby limiting the number of construction seasons that in-water construction would be needed and the number of fish year classes potentially exposed to in-water construction effects.

Implement Measures to Minimize Exceedance of Interim Threshold Sound Levels during Pile Driving

The City will require the contractor to implement the following measures to minimize the exposure of listed fish species to potentially harmful underwater sounds during each construction season that impact pile driving occurs.

- The contractor will first vibrate all piles to the maximum extent practical 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, and will limit the total number of hammer strikes to 14,400 strikes per day (i.e., 1,800 hammer strikes per pile per day) for the piles for the temporary trestles and barges, and 2,500 strikes per day for the piles for the bridge piers.
- Impact pile driving events (days) shall be followed by a minimum period of 12 hours with no impact pile driving to allow the accumulated sound exposure level to reset to zero.
- During impact driving, the City will require the contractor to use a bubble curtain or similar sound attenuation device (e.g., dewatered cofferdam) to minimize the extent to which the interim peak and cumulative in-water sound exposure level thresholds are exceeded (Table 2.3.3-2).

Develop and Implement a Hydroacoustic Monitoring Plan

The City and/or its construction contractor will develop and implement a hydroacoustic monitoring plan. The monitoring plan will be submitted to the resource agencies (California Department of Fish and Wildlife, National Marine Fisheries Service, and United States Fish and Wildlife Service) for approval at least 60 days before the start of project activities. The plan will include the following requirements.

- The City and/or its construction contractor will monitor underwater noise levels during all impact pile driving activities on land and in water to ensure that that peak and cumulative sound exposure levels do not exceed estimated values (Table 2.3.3-1).
- The monitoring plan will describe the methods and equipment that will be used to document the extent of underwater sounds produced by pile driving, including the number, location, distances, and depths of the hydrophones and associated monitoring equipment.
- The monitoring plan will include a reporting schedule that includes provision of daily summaries of the hydroacoustic monitoring results to the resource agencies and more comprehensive reports on a monthly basis during the pile driving season.
- The reports will include the number of piles installed per day, the number of strikes per pile, the interval between strikes, the peak sound pressure level, sound exposure level, and root mean square per strike, and accumulated sound exposure level per day at each monitoring station.

- The City or its contractors will ensure that a qualified fish biologist is onsite during impact pile driving to document any occurrences of stressed, injured, or dead fish. If stressed, injured, or dead fish are observed during pile driving, the City and/or its construction contractor will reduce the number of strikes per day to ensure that fish are no longer showing signs of stress, injury, or mortality.

Monitor Turbidity in the San Joaquin River

The City will require the contractor to monitor turbidity levels in the San Joaquin River during in-water construction activities (e.g., pile driving, extraction of temporary steel casings and/or sheet piles used for cofferdams, and removal of existing piers). Turbidity will be measured using standard water quality monitoring techniques and, as required by the water quality certification for the project to determine whether changes in ambient turbidity levels exceed 20-percent, the threshold derived from the Basins Plan for the Sacramento and San Joaquin Rivers. If it is determined that turbidity levels exceed the 20-percent threshold, the City and/or its contractors will adjust work to ensure that turbidity levels do not exceed the 20-percent threshold.

Implement Cofferdam Restrictions

The following restrictions will be implemented during installation of the cofferdams and cofferdam dewatering.

- The extent of cofferdam footprints will be limited to the minimum necessary to support construction activities.
- Sheet piles used for cofferdams will be installed and removed using a vibratory pile driver.
- Cofferdams will be installed and removed only during the proposed in-water work window (between June 1 and October 31), except in the unlikely event that one or more sheet piles need to be removed to prevent fish entrapment if the cofferdam is overtopped by floodwaters.
- Cofferdams will be capped or opened to avoid entrapping special-status fish species when winter/spring flows are predicted to overtop cofferdams.
- All pumps used during dewatering of cofferdams will be screened according to California Department of Fish and Wildlife and National Marine Fisheries Service guidelines for screens.
- Cofferdam dewatering and fish rescue/relocation from within cofferdams will occur during the proposed in-water work window (between June 1 and October 31) only and will commence as soon as possible following cofferdam closure and commencement of dewatering (discussed below).

Prepare and Implement a Fish Rescue and Relocation Plan

The City and/or its construction contractor will develop and implement a fish rescue and relocation plan to recover any fish trapped in cofferdams. The fish rescue and relocation plan will be submitted to the resource agencies (California Department of Fish and Wildlife, National Marine Fisheries Service, and United States Fish and

Wildlife Service) for approval at least 60 days before initiating activities to install cofferdams. At a minimum, the plan will include the following.

- A requirement that fish rescue and relocation activities will commence immediately after cofferdam closure and that dewatering has sufficiently lowered water levels inside cofferdams to make it feasible to rescue fish.
- A description of the methods and equipment proposed to collect, transfer, and release all fish trapped within cofferdams. Capture methods may include seining, dip netting, and/or electrofishing as approved by California Department of Fish and Wildlife, National Marine Fisheries Service, and United States Fish and Wildlife Service. The precise methods and equipment to be used will be developed cooperatively by California Department of Fish and Wildlife, National Marine Fisheries Service, United States Fish and Wildlife Service, and the project proponent and/or contractor.
- A requirement that only California Department of Fish and Wildlife-, National Marine Fisheries Service-, and United States Fish and Wildlife Service-approved fish biologists will conduct the fish rescue and relocation.
- A requirement that fish biologists will contact California Department of Fish and Wildlife, National Marine Fisheries Service, and United States Fish and Wildlife Service immediately if any listed species are found dead or injured.
- A requirement that a fish rescue and relocation report be prepared and submitted to California Department of Fish and Wildlife, National Marine Fisheries Service, and United States Fish and Wildlife Service within 5 business days following completion of the fish relocation. Data will be provided in tabular form and at a minimum will include the species and number rescued and relocated, approximate size of each fish (or alternatively, approximate size range if a large number of individuals are encountered), date and time of their capture, and general condition of all live fish (e.g., good—active with no injuries, fair—reduced activity with some superficial injuries, poor—difficulty swimming/orienting with major injuries). For dead fish, additional data will include fork length and description of injuries and/or possible cause of mortality if it can be determined.

Prevent the Spread or Introduction of Aquatic Invasive Species

The City or its contractors will implement the following actions to prevent the potential spread or introduction of aquatic invasive species associated with the operation of barges and other in-water construction activities.

- The City or its contractors will coordinate with the California Department of Fish and Wildlife Invasive Species Program to ensure that the appropriate best management practices are implemented to prevent the spread or introduction of aquatic invasive species.
- Educate construction supervisors and managers about the importance of controlling and preventing the spread of aquatic invasive species.

- Train vessel and equipment operators and maintenance personnel in the recognition and proper prevention, treatment, and disposal of aquatic invasive species.
- If feasible, prior to departure of vessels from their place of origin and before in-water construction equipment is allowed to operate within the waters of the San Joaquin River, thoroughly inspect and remove and dispose of all dirt, mud, plant matter, and animals from all surfaces that are submerged or may become submerged, or places where water can be held and transferred to the surrounding water.

Minimize or Avoid Temporary Construction Lighting and Permanent Bridge Lighting from Directly Radiating on Water Surfaces of the San Joaquin River

The City will minimize or avoid the effects of nighttime lighting on special-status fish species by implementing the following actions.

Temporary Construction Lighting

- Avoiding construction activities at night, to the maximum extent practicable.
- Using the minimal amount of lighting necessary to safely and effectively illuminate the work areas.
- Shielding and focusing lights on work areas and away from the water surface of the San Joaquin River, to the maximum extent practicable.

Permanent Bridge Lighting

- Minimizing lighting of the bridge structure for aesthetic purposes.
- Using the minimal amount of lighting necessary to safely and effectively illuminate vehicular, bicycle, and pedestrian areas on the bridge.
- Shielding and focusing lights on vehicular, bicycle, and pedestrian areas and away from the water surface of the San Joaquin River, to the maximum extent practicable.

Mitigation Measure Bio-2. Purchase Channel Enhancement Credits at National Marine Fisheries Service-Approved Anadromous Fish and United States Fish and Wildlife Service-Approved Delta Smelt Conservation Bank for Impacts on Critical Habitat

Permanent impacts on critical habitat, including the permanent shading of up to an additional 55,866 square feet (0.13 acre) of aquatic habitat, will be mitigated through purchase of 1.20 acres of mitigation credits at a National Marine Fisheries Service-approved anadromous fish and a United States Fish and Wildlife Service-approved delta smelt conservation bank.

The City proposes to purchase 1.20 acres of mitigation credits because National Marine Fisheries Service has indicated that the existing bridge should not be included in the environmental baseline, and although National Marine Fisheries

Service would consider 2:1 mitigation for shade impacts, Unites States Fish and Wildlife Service requires 3:1 mitigation for impacts on delta smelt critical habitat, including shallow water habitat. Because the entire channel area (0.40 acre) at the proposed bridge location meets Unites States Fish and Wildlife Service' definition of shallow water habitat, a minimum of 1.20 acres of mitigation credits are needed to meet Unites States Fish and Wildlife Service' 3:1 mitigation ratio for impacts on delta smelt critical habitat.

Avoid the Introduction and Spread of Invasive Plants

The City or its contractor will be responsible for avoiding the introduction of new invasive plants and the spread of invasive plants previously documented in the study area. Accordingly, the following measures will be implemented during construction.

- Educate construction supervisors and managers on weed identification and the importance of controlling and preventing the spread of invasive weeds.
- Minimize surface disturbance to the greatest extent feasible to complete the work.
- Use weed-free erosion-control materials.
- Use locally grown native plant stock and native or naturalized (noninvasive) grass seed during revegetation.

2.3.4 Threatened and Endangered Species

Regulatory Setting

The primary federal law protecting threatened and endangered species is Federal Endangered Species Act: 16 United States Code 9 United States Code Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration (and Caltrans, as assigned), are required to consult with the United States Fish and Wildlife Service and the National Oceanic and Atmospheric Administration's National Fisheries Service to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of the consultation under Section 7 may include a Biological Opinion with an Incidental Take statement or a Letter of Concurrence. Section 7 of Federal Endangered Species Act defines take as "harass, harm, pursue, hunt, shoot, would, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, (California Endangered Species Act), California Fish and Game Code Section 2050, et seq. California Endangered Species Act emphasized 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. California Department of Fish and Wildlife is the agency responsible for implementing California Endangered Species Act. Section 2080 of the California Fish and Game Code prohibits “take” of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the California Fish and Game Code as “hunt, pursue, catch, capture, or kill, or otherwise attempt to hunt, pursue, catch, capture, or kill.” The California Endangered Species Act allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by California Department of Fish and Wildlife. For species listed under both Federal Endangered Species Act and California Endangered Species Act requiring a Biological Opinion under Section 7 of Federal Endangered Species Act, the California Department of Fish and Wildlife may also authorize impacts to California Endangered Species Act species by issuing Consistency Determination under Section 2080.1 of the California Fish and Game Code.

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 fisher 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, Continental Shelf fisher resources, and fishery resources in special areas.

Affected Environment

This section was informed by the Natural Environment Study completed for this project in December 2018 and updated in March 2020. Threatened and endangered species with suitable habitat in the biological study area are discussed here. Seven federally and/or state listed species (Mason’s lilaeopsis [*Lilaeopsis masoni*], riparian brush rabbit [*Sylvilagus bachmani*], Swainson’s hawk [*Buteo swainsoni*], southern distinct population segment of North American green sturgeon [*Acipenser medirostris*], Central Valley spring-run Chinook salmon [*Oncorhynchus tshawytscha*], Delta smelt [*Hypomesus transpacificus*], and longfin smelt [*Spirinchus thaleichthys*]) could occupy the biological study area based on the presence of suitable habitat. Each of these species is discussed below.

A Biological Assessment and essential fish habitat assessment were prepared and submitted by Caltrans to National Marine Fisheries Service in April 2020.

Wildlife Species

Riparian Brush Rabbit

Riparian brush rabbit is designated as a state and federal endangered species. Riparian brush rabbit occupies riparian communities dominated by thickets of willows, wild roses, blackberries, and other successional trees and shrubs. In

addition, when available, they occupy dense, tall stands of herbaceous plants adjacent to patches of riparian shrubs. In general, an open tree canopy appears to be more desirable habitat for riparian brush rabbit than a dense riparian canopy. Riparian brush rabbit is known to occur only in Caswell Memorial State Park on the Stanislaus River and the South Delta in patches of habitat along the San Joaquin River, Paradise Cut, Tom Paine Slough, and railroad rights-of-way in San Joaquin County. Habitat patches in the South Delta are extremely narrow strips—most only a few meters wide—between active farmland and open water.

Protocol-level surveys for riparian brush rabbit have not been conducted. There are numerous records for riparian brush rabbit within 2 miles of the biological study area; the nearest is approximately 750 feet west of the biological study area in an area that is a mix of riparian woodland and riparian scrub along the railroad tracks. The riparian woodland along the east side of the San Joaquin River and north of the railroad in the biological study area represents suitable habitat for riparian brush rabbit. This area has patches of dense understory with Himalayan blackberry and shrubby willows and adjacent herbaceous habitat. The remainder of the riparian habitat is generally not suitable for riparian brush rabbit. The riparian habitat on the east bank adjacent to the existing Manthey Road Bridge is entirely ripped and is vegetated only with tree tobacco and weedy forbs. The west bank adjacent to the bridge has a riparian overstory dominated by a large cottonwood and several tree of heaven; the understory consists mostly of annual grasses and herbaceous vegetation, with a narrow strip of scrubby willows along the ripped shoreline. The remainder of the west bank is heavily ripped and is dominated by weedy herbaceous species and scattered cottonwood, oak, and willow trees, including saplings.

Swainson's Hawk

Swainson's hawk is state listed as threatened. Swainson's hawks forage in grasslands, grazed pastures, alfalfa and other hay crops, and certain grain and row croplands. Vineyards, orchards, rice, and cotton crops are generally unsuitable for foraging because of the density of the vegetation. The majority of Swainson's hawks winter in South America, although some winter in the United States. Swainson's hawk arrives in California in early March to establish nesting territories and breed. They usually nest in large, mature trees. Most nest sites (87 percent) in the Central Valley are found in riparian habitats, primarily because trees are more available there. Swainson's hawks also nest in mature roadside trees and in isolated trees in agricultural fields or pastures. The breeding season is from March through August.

Focused surveys for Swainson's hawk were not conducted. Swainson's hawks were observed in flight over the biological study area—on June 3, 2014, one was flushed from a tree located between the proposed location of Golden Valley Parkway and the parking lot for Mossdale County Park. Another was observed in flight just north of the biological study area on June 3, 2014; two others were observed in flight over the biological study area on May 9, 2016. The California Natural Diversity Data Base contains several records of Swainson's hawks' nests within 10 miles of the biological study area; the nearest record is on the west side of the San Joaquin River between

the limits of project construction disturbance for the new bridge and the removal of the existing Manthey Road bridge. This nest site has been used for several years; the most recent observation of the nest being occupied was in 2009. The nest is located in a large oak tree within an area used for farm equipment storage and residential use. Riparian trees, as well as landscape trees within and adjacent to the biological study area, could be used by Swainson's hawk for nesting. The ruderal and annual grassland areas in the biological study area represent potential foraging habitat.

Fish Species

Southern Distinct Population Segment of North American Green Sturgeon

On January 23, 2003, National Marine Fisheries Service determined that green sturgeon are composed of two populations, a northern and a southern distinct population segment. The northern distinct population segment consists of populations extending from the Eel River northward, and the southern distinct population segment consists of populations south of the Eel River to the Sacramento River. The Sacramento River supports the southernmost spawning population of green sturgeon. On April 7, 2006, National Marine Fisheries Service listed the southern distinct population segment of green sturgeon as threatened under Federal Endangered Species Act. Critical habitat for green sturgeon was designated on October 9, 2009 and includes the San Joaquin River within the legal Delta (including the portion encompassed by the biological study area).

Green sturgeon is not listed under California Endangered Species Act. In California, green sturgeon is classified as a species of special concern. The California Department of Fish and Wildlife classifies green sturgeon as a High Concern. On March 20, 2006, emergency green sturgeon regulations were put into effect by the California Department of Fish and Game (now California Department of Fish and Wildlife), requiring a year-round zero bag limit of green sturgeon in all areas of the state.

Green sturgeon are the most widely distributed sturgeon species, known to range from nearshore waters of Mexico to the Bering Sea. Despite this large geographic range, the only known spawning locations for green sturgeon occur in the Klamath, Sacramento, and Rogue rivers. In the southern distinct population segment, adults and juveniles occur in the upper Sacramento River, where the majority of spawning occurs. Incidental capture of larval green sturgeon in salmon out-migrant traps indicates that the lower Feather River may be a principal spawning area but spawning there has never been substantiated. There is no documentation of green sturgeon currently spawning in the San Joaquin River. Based on California Department of Fish and Wildlife sturgeon angler report-card data, however, adult green sturgeon have been caught in the San Joaquin River between Stockton and the Highway 140 bridge, and the reported timing of these captures has coincided with the spawning migration period of green sturgeon in the Sacramento River.

Green sturgeon also are the most marine species of sturgeon, making extensive oceanic migrations and coming into freshwater rivers only to spawn. Adults migrate into rivers to spawn between late February and late July, and spawn between March and July, with a peak from mid-April to mid-June. In the Central Valley, spawning occurs in the Sacramento River upstream of Hamilton City, perhaps as far upstream as Keswick Dam and possibly in the lower Feather River. It is not known whether green sturgeon spawn the San Joaquin River; however, green sturgeon would be expected to spawn well upstream of the biological study area, based on spawning habitat preferences observed in the Sacramento River.

Based on the year-round salvage of juvenile green sturgeon at the California State Water Project and federal Central Valley Project pumps in the south Delta, juvenile green sturgeon use the Delta for rearing presumably year-round. Adult and juvenile sturgeon are benthic (bottom) feeders but may also take small fish. Juveniles in the Sacramento–San Joaquin estuary feed primarily on opossum shrimp and amphipods.

A number of threats and stressors exist for green sturgeon. Main threats and stressors include reduced spawning habitat as a result of dam construction, migration barriers, exposure to toxins, harvest, reduced rearing habitat, increased water temperatures, dredging, and nonnative aquatic species, and entrainment.

Focused surveys for green sturgeon were not conducted. However, it is well documented that green sturgeon use the Delta for year-round rearing and as a migration corridor during upstream (adult) and downstream (juvenile) migration, based on the salvage of green sturgeon at the Central Valley Project Tracy Fish Collection Facility and the California State Water Project Skinner Delta Fish Protective Facility. From January 2002 through December 2018, green sturgeon were salvaged in all months of the year except May. In the San Joaquin River, adult green sturgeon have been captured by anglers between Stockton and the Highway 140 bridge (well upstream of the biological study area), although the number of green sturgeon in the catch was very low, suggesting that the abundance of green sturgeon in the San Joaquin River is probably low. Spawning and egg incubation do not occur in the biological study area.

California Central Valley Steelhead Distinct Population Segment

The California Central Valley steelhead distinct population segment was listed as threatened by the National Marine Fisheries Service on March 19, 1998. On January 5, 2006, National Marine Fisheries Service issued a final listing determination reaffirming the threatened status of California Central Valley steelhead; at the same time, National Marine Fisheries Service adopted the term distinct population segment, in place of evolutionarily significant unit, to describe California Central Valley steelhead and other population segments of this species. California Central Valley steelhead include populations in the Sacramento River downstream of Keswick Reservoir and its large tributaries downstream of impassable dams, the small, perennial tributaries of the mainstem Sacramento River, the San Joaquin River and its large tributaries downstream of the Merced River, inclusive, and the

Delta. National Marine Fisheries Service issued the final rule designating critical habitat for California Central Valley steelhead on September 2, 2005. The San Joaquin River and waterways accessible to California Central Valley steelhead from the San Joaquin River are included as designated critical habitat for California Central Valley steelhead. California Central Valley steelhead are not listed under California Endangered Species Act.

California Central Valley steelhead are included in the Recovery Plan for the evolutionarily significant units of Sacramento River winter-run chinook salmon and Central Valley spring-run chinook salmon and the distinct population segment of Central Valley Steelhead, which was completed in 2014.

Steelhead, a sea-run rainbow trout, exhibit one of the most complex life histories of any salmonid (trout or salmon) species. Steelhead are capable of having an anadromous (sea-run) life history or a freshwater residency. Resident individuals typically are referred to as rainbow trout, and anadromous individuals are called steelhead. Currently, only winter (ocean-maturing) steelhead occur in the Central Valley drainages, although summer steelhead may have been present historically. Presently, the California Central Valley steelhead distinct population segment consists of naturally spawning and hatchery fish. Hatchery fish are raised at four fish hatcheries in the Central Valley, with a combined production target of about 1.6 million fish: Coleman National Fish Hatchery on Battle Creek, Feather River Hatchery on the Feather River, Nimbus Hatchery on the American River, and Mokelumne River Hatchery on the Mokelumne River. It is estimated that from 63 to 92 percent of current steelhead smolt production in the Central Valley is of hatchery origin.

Historical records indicate that adult California Central Valley steelhead enter the mainstem Sacramento River in July, peak in abundance in September and October, and continue migrating through February or March. In the San Joaquin River, adult California Central Valley steelhead begin to migrate between September and the end of December, with a peak in December. Naturally spawning California Central Valley steelhead spawn in relatively high gradient reaches of tributary rivers and streams with cool, clean, well-oxygenated water and suitable spawning gravel. Naturally spawning California Central Valley steelhead occur in the upper Sacramento River and tributaries; Mill, Deer, and Butte creeks; and the Feather, Yuba, American, Mokelumne, Calaveras, and Stanislaus rivers. Spawning occurs from December through April, with most spawning occurring from January through March. Unlike Pacific salmon, some adult California Central Valley steelhead may survive to spawn more than one time, returning to the ocean between spawning migrations.

In the Central Valley, juvenile California Central Valley steelhead typically spend 1–3 years in freshwater before emigrating to the ocean as smolts. Smolts are juvenile salmonids that have undergone a physiological transformation that allows them to switch to a marine environment. Smolt emigration generally occurs from November

through May. After spending 2–3 years in the ocean, California Central Valley steelhead return to their natal stream to spawn as 4- or 5-year-olds.

Because steelhead have a mandatory freshwater residency period, it is critical that suitable conditions for juvenile rearing exist year-round. Juveniles require year-round flows, suitable water temperatures, adequate cover, and abundant food to support growth and survival to the smolt stage. Summer rearing habitat consisting of pools, cool, well-oxygenated water, and sufficient cover is often cited as a major limiting factor for juvenile steelhead in California streams when one or more of these habitat conditions are absent. Juvenile steelhead feed primarily on drifting aquatic organisms and terrestrial insects and occasionally on active benthic invertebrates.

Historically, California Central Valley steelhead were widely distributed in the Sacramento and San Joaquin River drainages. Historical runs may have been up to 1–2 million adult fish annually. An average of 20,540 adults was estimated in the Sacramento River above the Feather River through the 1950s. In the early 1960s, the population of California Central Valley steelhead in the Central Valley was estimated to be 40,000 adults. The magnitude of the decline in California Central Valley steelhead is best illustrated by the observed decline in annual counts of California Central Valley steelhead at the Red Bluff Diversion Dam; from the 10-year (1967–1976) average of 11,187 adults to 2,202 adults annually in the 1990s. Presently, there is no accurate estimate of the current abundance of California Central Valley steelhead. Recent estimates from trawling data in the Delta calculate that approximately 100,000 to 300,000 smolts migrate out to the ocean each year. This number of smolts equals approximately 3,600 female spawners.

Major factors that have contributed to their present status include dams and other barriers, degradation of stream and estuarine habitat, diversions, entrainment, gravel extraction, dredging, aquatic invasive species, loss of genetic integrity from hatchery steelhead production, and natural factors. The loss of historical spawning and rearing habitat as a result of construction of impassable dams is believed to be the principal factor affecting the California Central Valley steelhead distinct population segment. Qualitative information suggests that the California Central Valley steelhead distinct population segment is at a moderate to high risk of extinction.

Focused surveys for California Central Valley steelhead were not conducted. However, it is well documented that California Central Valley steelhead distinct population segment use the biological study area as a migration corridor during upstream (adult) and downstream (juvenile) migration. In addition, juvenile California Central Valley steelhead seasonally use the lower reaches of the Sacramento and San Joaquin Rivers and the Delta for rearing while emigrating to the ocean. The temporal occurrence and relative abundance of juvenile California Central Valley steelhead in the biological study area can be inferred based on juvenile fish monitoring surveys (trawls) conducted by United States Fish and Wildlife Service and California Department of Fish and Wildlife at Mossdale. Based on data collected from January 2001 through December 2018, juvenile California Central Valley steelhead occur in the biological study area from January to June, with a peak in

April, May, and October. Spawning and egg incubation do not occur in the biological study area.

Central Valley Spring-Run Chinook Salmon

Spring-run Chinook salmon currently do not occur in the San Joaquin River, and Central Valley spring-run Chinook salmon are not included on National Marine Fisheries Service' species list; however, efforts are underway to reestablish a population of spring-run Chinook salmon to the San Joaquin River. The Central Valley spring-run Chinook salmon evolutionarily significant unit is federally listed as threatened and listed as threatened under California Endangered Species Act.

Central Valley spring-run Chinook salmon are being restored to the San Joaquin River between Friant Dam and its confluence with the Merced River as part of the San Joaquin River Restoration Program. Although the lower San Joaquin River is outside of the designated nonessential experimental population area, juvenile and adult spring-run Chinook salmon that are part of the nonessential experimental population will continue to be covered by the take prohibitions and exceptions applicable to the non-experimental part of the Central Valley spring-run Chinook salmon evolutionarily significant unit.

Spring-run Chinook salmon use the lower Sacramento River and Delta as a migration corridor during upstream (adult) and downstream (juvenile) migration. The temporal occurrence and relative abundance of spring-run Chinook salmon in the biological study area can be inferred based on juvenile fish monitoring surveys (trawls) conducted by United States Fish and Wildlife Service and California Department of Fish and Wildlife at Mossdale. Based on data collected from January 2001 through March 2016, spring-run sized juvenile Chinook salmon have occurred in the biological study area in December and from March to June, with a peak in April and May. Spawning and egg incubation do not occur in the biological study area. Presently, adults are likely to occur in the biological study area only in winter and spring as strays; however, their occurrence in the San Joaquin River may be more common in the future if efforts to restore a self-sustaining population to the San Joaquin River are successful. If these efforts are successful, adults and juveniles are likely to be present in the biological study area primarily during winter and spring.

Delta Smelt

Delta smelt was federally listed as threatened on March 5, 1993, and critical habitat was designated on December 19, 1994. On April 7, 2010, United States Fish and Wildlife Service ruled that the change in the status of delta smelt from threatened to endangered was warranted, but was precluded by other higher priority listing actions. Delta smelt was listed as a threatened species under California Endangered Species Act on December 9, 1993. In February 2007, an emergency petition was filed with the California Fish and Game Commission to elevate the status of delta smelt from threatened to endangered under California Endangered Species Act. On

March 4, 2009, the California Fish and Game Commission elevated the status of delta smelt to endangered under California Endangered Species Act.

Delta smelt are endemic to the Sacramento–San Joaquin estuary, primarily the Delta and Suisun Bay. In the Delta, delta smelt occur primarily downstream of Isleton on the Sacramento River and downstream of Mossdale on the San Joaquin River. Delta smelt are found seasonally throughout Suisun Bay and less frequently in the larger sloughs of Suisun Marsh. Where they occur, delta smelt typically are found in shallow water (less than 10 feet) where salinity ranges from 2 to 7 parts per thousand, although they have been observed at salinities ranging from 0 to 18.4 parts per thousand. Delta smelt tolerate a wide range of temperatures, from lower than 6 degrees Celsius (43 degrees Fahrenheit) to greater than 25 degrees Celsius (77 degrees Fahrenheit).

Delta smelt are semi-anadromous. During their spawning migration, adults move into the freshwater channels and sloughs of the Delta during December and January. Spawning occurs between January and July, with peak spawning from April through mid-May. Spawning locations in the Delta have not been identified and are inferred from the location of gravid females and larval catches as well as laboratory observations. Larval fish have been observed in Montezuma Slough; Suisun Slough in Suisun Marsh, the Napa River estuary, the Sacramento River above Rio Vista, and Cache, Lindsey, Georgiana, Prospect, Beaver, Hog, Sycamore, and Barker sloughs. In the San Joaquin River, sampling of larval smelt suggests that spawning occurs off Bradford Island, including Fisherman's Cut, False River along the shore zone between Frank's and Webb Tracts, and possibly other areas.

The principal factors contributing to the decline in delta smelt abundance include reductions in outflows and entrainment losses to water diversions, especially by the California State Water Project and Central Valley Project pumping facilities in the south Delta, extremely high river outflows that flush delta smelt and zooplankton out of the system, changes in prey abundance and composition caused by introduced species, predation by nonnative species; toxic substances, including agricultural pesticides, heavy metals, and other compounds, disease, and loss of genetic integrity through interbreeding with the introduced Wakasagi smelt (*Hypomesus nipponensis*).

Focused surveys for delta smelt were not conducted. However, the temporal occurrence of delta smelt in the biological study area can be inferred based on juvenile fish monitoring surveys (trawls) conducted by United States Fish and Wildlife Service and California Department of Fish and Wildlife at Mossdale. Based on data collected from January 2001 through December 2018, a total of 15 delta smelt have been detected in the Mossdale trawls; most were detected in May and June.

Longfin Smelt

The San Francisco Bay-Delta distinct population segment of longfin smelt is a proposed species under Federal Endangered Species Act. On April 2, 2012, United

States Fish and Wildlife Service announced a 12-month finding on a petition to list the Bay-Delta distinct population segment of longfin smelt as threatened or endangered and to designate critical habitat under Federal Endangered Species Act. In its finding, United States Fish and Wildlife Service announced that listing of the Bay-Delta distinct population segment of longfin smelt is warranted, but that listing of longfin smelt was precluded by higher priority actions to amend the Lists of Endangered and Threatened Wildlife and Plants. Upon publication of the 12-month finding, United States Fish and Wildlife Service added the Bay-Delta distinct population segment of longfin smelt to their proposed species list. Critical habitat for longfin smelt has not been designated.

Longfin smelt are a small, euryhaline fish found in open waters of bays and estuaries. Longfin smelt have been collected in West Coast estuaries, ranging from the San Francisco estuary in California to Prince William Sound in Alaska. In California, longfin smelt have also been found in Humboldt Bay and in the estuaries of the Eel, Klamath, and Russian rivers. In the San Francisco estuary, longfin smelt are rarely found upstream of Rio Vista on the Sacramento River and Medford Island on the San Joaquin River. Although adults occur seasonally as far downstream as South San Francisco Bay, they are concentrated primarily in North San Francisco, San Pablo, and Suisun bays. Longfin smelt also are common in nearshore coastal marine waters west of the Golden Gate Bridge in late summer and fall.

Bay-Delta longfin smelt are anadromous, leaving coastal marine areas and the brackish bays in fall and moving upstream to spawn in the freshwater reaches of the lower Sacramento and San Joaquin Rivers in winter and spring. Although spawning of Bay-Delta longfin smelt has not been observed, the location of spawning sites can be inferred from California Department of Fish and Wildlife surveys that collect adult female and larval smelt. Based on these surveys, spawning habitat is presumed to exist in the Cache Slough subregion (Sacramento River Deep Water Ship Channel, Cache-Liberty Island Complex), the West Delta subregion (lower Sacramento River), the eastern Suisun Bay subregion, including upper Grizzly Bay, and Montezuma Slough in the Suisun Marsh subregion. Spawning rarely occurs in the San Joaquin River in the west Delta/south Delta subregions; when it does occur, it is usually downstream of Twitchell Island. The exact location of spawning likely varies from year to year in response to changing environmental conditions.

Adult longfin smelt may spawn as early as November and as late as June, although spawning typically occurs from January through April, based on the occurrence of larvae during this period and the decline in abundance of adult smelt after this period. Spawning occurs primarily over sandy or gravel substrates, rocks, and aquatic plants and when water temperatures are 7.2–14.4 degrees Celsius (45–58 degrees Fahrenheit). Most Bay-Delta longfin smelt live for 2 years, spawn, and then die, although some individuals may spawn as 1- or 3-year-olds. Some longfin smelt, mostly females, survive after spawning and live another year; it is not known whether these fish spawn more than once.

Longfin smelt abundance in the Bay-Delta has declined significantly since the 1980s, and over the last decade abundance has been the lowest in the 40-year history of California Department of Fish and Wildlife's monitoring surveys. Longfin smelt abundance is positively correlated with Delta outflow. Factors affecting the abundance of longfin smelt in the Bay-Delta are multiple and synergistic and likely to be similar to the factors affecting delta smelt.

Focused surveys for longfin smelt were not conducted. However, the temporal occurrence and relative abundance of longfin smelt in the biological study area can be inferred based on juvenile fish monitoring surveys (trawls) conducted by United States Fish and Wildlife Service and California Department of Fish and Wildlife at Mossdale. Based on data collected from January 2001 through March 2016, a total of 17 longfin smelt have been detected in the Mossdale trawls; all were detected in April, May, or June.

Environmental Consequences

Build Alternative

Wildlife Species

Riparian Brush Rabbit

It is unknown whether riparian brush rabbit occupies habitat within the biological study area, although due to the poor quality of the riparian habitat, it is unlikely. It is more likely that the riparian habitat would be used for dispersal, at most. It is unknown what number of individuals could be potentially affected either directly or indirectly by the proposed action. Both adults and young brush rabbit of both sexes have a potential to be exposed to project activities.

Disturbance to riparian brush rabbits during construction, if they occur nearby, would take place over approximately 2 years. This disturbance would include visual disturbance from construction personnel and equipment and noise from construction equipment and pile driving. This activity could disrupt normal behavior, including foraging, dispersal, and breeding.

Construction would permanently reduce the amount of suitable dispersal habitat by 0.07 acre, temporarily disturb 0.08 acre, and create a potential barrier to brush rabbit dispersal along the San Joaquin River, due to the presence of the new bridge and increased noise and activity along the river.

Swainson's Hawk

Construction activities could result in the disturbance or loss of a Swainson's hawk nest, if a nest is present in or near the construction area. These activities could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. The presence of construction crews and equipment and noise from pile driving could disrupt normal behaviors, including nesting.

The Build Alternative would result in the permanent loss of 4.92 acres of suitable foraging habitat for Swainson's hawk (3.38 acres of ruderal grassland and 1.54 acres of dry farmed wheat), and the temporary loss of 9.17 acres of foraging habitat (6.74 acres of ruderal grassland and 2.43 acres of dry farmed wheat). The Build Alternative also would result in the permanent loss of 0.07 acre and the temporary loss of 0.08 acre of riparian woodland habitat that provides suitable nesting habitat for Swainson's hawk.

Fish Species

Potential Build Alternative impacts on threatened and endangered fish species and their habitat include both short-term and long-term effects. Short-term effects include temporary construction-related impacts on fish and aquatic habitat that may last from a few hours to days (e.g., suspended sediment and turbidity, construction noise, artificial lighting). Long-term effects (e.g., addition of overwater structure, loss of aquatic habitat [substrate and water column], loss of Shaded Riverine Aquatic cover habitat) typically would last months or years or would be permanent.

These effects are generally due to physical alteration of important habitat attributes of the channel, shoreline, and adjacent bank. Short-term effects on special-status fish species were evaluated qualitatively, based on general knowledge of the impact mechanisms and the species' responses to construction actions. Long-term effects were measured in terms of the area and/or linear feet of artificial shade, aquatic habitat, and Shaded Riverine Aquatic cover habitat affected by the proposed project.

Southern Distinct Population Segment of North American Green Sturgeon

Green sturgeon may be present in the biological study area during the June 1 to October 31 in-water construction period and when spud piles are periodically driven to anchor the barges after they have been moved (if barges are used). Effects of the Build Alternative on green sturgeon would be the same as those described for white sturgeon (see "Fish Species" in Section 2.3.3, *Animal Species*). Effects of the Build Alternative on green sturgeon critical habitat would be the same as habitat effects described for white sturgeon.

Central Valley Spring-Run Chinook Salmon Evolutionarily Significant Unit

Adult spring-run Chinook salmon are not expected to be present in the biological study area during the June 1 to October 31 in-water construction period, and the abundance of juvenile spring-run Chinook salmon is expected to be relatively low during this period. However, adults and juveniles may be present in greater abundance at other times of the year, when spud piles are periodically driven to anchor the barges after they have been moved (if barges are used). Consequently, project impacts on spring-run Chinook salmon related to driving of spud piles and effects on habitat would be similar to those described for white sturgeon, except that juvenile spring-run Chinook salmon may be at higher risk for injury or mortality related to pile driving than adult spring-run Chinook salmon and adult and juvenile

white sturgeon because of their smaller size and presumed greater sensitivity to noise impacts.

No impacts on designated critical habitat for Central Valley spring-run Chinook salmon would be associated with implementation of the project because the San Joaquin River, including the portion within the biological study area, is not included in the designated critical habitat for Central Valley spring-run Chinook salmon, and the nearest designated critical habitat for Central Valley spring-run Chinook salmon is located in the Sacramento River, approximately 50 miles downstream of the biological study area.

Central Valley spring-run Chinook salmon habitats also are protected under the Magnuson-Stevens Act as essential fish habitat. The San Joaquin River, including the portion within the biological study area, is considered essential fish habitat for Chinook salmon. Effects of the Build Alternative on Chinook salmon essential fish habitat would be the same as the habitat effects described for white sturgeon (see “Fish Species” in Section 2.3.3, *Animal Species*).

Central Valley Steelhead Distinct Population Segment

The abundance of adult and juvenile steelhead in the biological study area is expected to be relatively low during the June 1 to October 31 in-water construction period. However, adults and juveniles may be present in greater abundance at other times of the year when spud piles are periodically driven to anchor the barges after they have been moved (if barges are used). Consequently, project impacts on steelhead related to driving of spud piles and effects on habitat would be similar to those described for white sturgeon, except that juvenile steelhead may be at higher risk for injury or mortality related to pile driving than adult steelhead and adult and juvenile white sturgeon because of their smaller size and presumed greater sensitivity to noise impacts.

Effects of the Build Alternative on Central Valley steelhead critical habitat would be the same as habitat effects described for white sturgeon (see “Fish Species” in Section 2.3.3, *Animal Species*).

Delta Smelt

Delta smelt may be present in the biological study area during the June 1 to October 31 in-water construction period. In addition, they may be present at other times of the year when spud piles are periodically driven to anchor the barges after they have been moved (if barges are used). Consequently, project impacts on delta smelt related to driving of spud piles and effects on habitat, including critical habitat, would be similar to those described earlier for white sturgeon, except that delta smelt may be at higher risk for injury or mortality related to pile driving than white sturgeon because of their smaller size and greater sensitivity to noise impacts (see “Fish Species” in Section 2.3.3, *Animal Species*).

Longfin Smelt

Longfin smelt may be present in the biological study area during the June 1 to October 31 in-water construction period. In addition, they may be present at other times of the year when spud piles are periodically driven to anchor the barges after they have been moved (if barges are used). Consequently, project impacts on longfin smelt related to driving of spud piles and effects on habitat would be similar to those described earlier for white sturgeon (see “Fish Species” in Section 2.3.3, *Animal Species*), except that longfin smelt may be at higher risk for injury or mortality related to pile driving than white sturgeon because of their smaller size and greater sensitivity to noise impacts.

The measures discussed below would ensure that construction activities and elements would avoid or minimize effects on animal species.

No-Build Alternative

Under the No-Build Alternative, no construction of the proposed project would take place, and no effects on threatened or endangered species discussed would occur.

Avoidance, Minimization, and/or Mitigation Measures

Avoidance and minimization measures to install orange construction fencing between the construction area and adjacent sensitive resources, conduct environmental awareness training for construction employees, and conduct biological monitoring discussed in Section 2.3.1, *Natural Communities*, and the avoidance and minimization measure to protect water quality and prevent erosion and sedimentation in drainages and wetlands discussed in Section 2.3.2, *Wetlands and Other Waters*, and to conduct all in-water construction activities between June 1 and October 31 (and only during daylight hours), implement measures to minimize exceedance of interim threshold sound levels during pile driving, develop and implement a hydroacoustic monitoring plan, monitor turbidity in the San Joaquin River, implement cofferdam restrictions, prepare and implement a fish rescue and relocation plan, prevent the spread or introduction of aquatic invasive species, minimize or avoid temporary construction lighting and permanent bridge lighting from directly radiating on water surfaces of the San Joaquin River, and avoid the introduction and spread of invasive plants, discussed in Section 2.3.3, *Animal Species* would avoid and minimize effects on threatened and endangered species as well.

Mitigation Measure BIO-1 to compensate for effects on riparian woodland and riparian scrub discussed in Section 2.3.1, *Natural Communities* and Mitigation Measure BIO-2 to compensate for effects on channel habitat would also address effects on threatened and endangered species.

The following additional avoidance and minimization measures would ensure that there were no adverse effects on threatened and endangered species.

*Conduct Focused Surveys for Nesting Swainson's Hawk prior to Construction, and
Conduct Tree Removal during the Non-Breeding Season*

The City will conduct surveys for nesting Swainson's hawks in the spring 1 year before construction to provide information in preparation for construction (i.e., locations of nests, hawks responses to disturbance, sizes of buffer areas, and anticipated impacts on project schedule). Surveys also will be conducted in the spring of the year of construction to determine whether there are active nests in the current year. Information collected during the first round of surveys will help to focus the second round of surveys. Focused surveys for Swainson's hawk will be conducted within the limits of disturbance and in a buffer area up to 0.5 miles around the limits of disturbance. The size of the buffer area surveyed will be based on the type of habitat present and the line of sight from the construction area to surrounding suitable breeding habitat. Buffer areas containing unsuitable nesting habitat or with an obstructed line of sight to the construction area will not be surveyed. Surveys will follow the methods of the Swainson's Hawk Technical Advisory Committee (2000). A minimum of six surveys will be conducted during the appropriate timeframes discussed in the methods. If needed, biologists will coordinate with the California Department of Fish and Wildlife regarding the extent and number of surveys. Surveys generally will be conducted from February to July. Survey methods and results will be reported to California Department of Fish and Wildlife.

The City and/or its construction contractor will remove or trim trees during the non-breeding season (generally between September 15 and January 1) to the extent feasible.

Avoid and Minimize Impacts on Riparian Brush Rabbit

- A preconstruction survey of the riparian habitat to be disturbed will be conducted immediately prior to the removal of riparian habitat by an individual approved by United States Fish and Wildlife Service and California Department of Fish and Wildlife.
- Immediately following preconstruction surveys, riparian vegetation will be removed using hand tools. All vegetation will be cut to ground level. The vegetation removal will be monitored by the approved biologist to ensure that these activities do not result in injury or mortality of riparian brush rabbit. Any riparian brush rabbits observed during vegetation removal will be allowed to passively disperse outside of the work area or, if necessary, will be captured by the approved biologist. United States Fish and Wildlife Service and California Department of Fish and Wildlife will be contacted immediately if any brush rabbits are observed or captured, and a plan will be developed in consultation with the agencies to relocate any captured animals.
- Immediately following vegetation removal, work areas adjacent to riparian habitats will have tightly woven exclusion fencing (i.e., silt fencing) installed at least 3 feet high above the ground surface between the work area and the riparian habitat. The fencing will extend from the water line up the riverbanks (paralleling the work area) to the top of the adjoining levee (the side nearest the

river such that the levee road is not fenced off). The fencing will continue another 25 feet away from the work area, along the top of the levee, and then curl back toward the river for approximately 10 feet to redirect wildlife back toward the riparian habitat and away from the work area. Because of the sensitivity of the riparian habitat and potential for harming wildlife, the fencing material will not be buried through trenching, but will be weighted down and covered on the inside (toward the work area) with gravel or sand bags such that animals cannot pass underneath the fence and are less able to dig beneath it. In areas where existing development (e.g., pavement or structures) is closer than the top of the levee, the exclusion fence will extend to that limit, and then continue for another 25 feet away from the work area and curl back toward the suitable habitat.

- The limits of the temporary disturbance area adjacent to riparian habitat will be fenced off with orange construction fencing that reaches a height of at least 4 feet. The fencing will be in place prior to and during all construction phases. To prevent rabbits and other ground-dwelling animals from being caught in the orange construction fencing, it will be placed with at least a 1-foot gap between the ground and the bottom of the orange construction fencing.
- Exclusion fencing will be checked weekly by a biological monitor to ensure that it is intact and functioning.
- If a riparian brush rabbit is encountered in a work area, all work will cease immediately. The animal will be allowed to passively move out of the work area and will not be captured unless by an individual authorized by a United States Fish and Wildlife Service biological opinion and a California Department of Fish and Wildlife incidental take permit. United States Fish and Wildlife Service and California Department of Fish and Wildlife will be notified within 24 hours of any observation of riparian brush rabbit.

2.3.5 Invasive Species

Regulatory Setting

On February 3, 1999, President William J. Clinton signed Executive Order 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as “any species including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health.” Federal Highway Administration guidance issued August 10, 1999 directs use of the State’s invasive species list, maintained by the California Invasive Species Council to define the invasive species that must be considered as part of the National Environmental Policy Act analysis for a proposed project.

Affected Environment

This section is informed by the Natural Environment Study completed in December 2018 for this project and updated in March 2020. There were no invasive animal species identified within the project area. The invasive plant species observed in the

biological study area are listed in Table 2.3.5-1. These species occur primarily in ruderal and fallow agricultural areas and at the edges of fields and roads. One species, water hyacinth, is aquatic and occurs in the San Joaquin River. Infestation of the study area by these species is generally limited; they occur primarily as scattered individuals.

Table 2.3.5-1. Invasive Plant Species Identified in the Biological Study Area

Species	The California Department of Food and Agriculture	California Invasive Plant Council
Tree of heaven (<i>Ailanthus altissima</i>)	C	Moderate
Slender wild oat (<i>Avena barbata</i>)	–	Moderate
Wild oat (<i>Avena fatua</i>)	–	Moderate
Common mustard (<i>Brassica nigra</i>)	–	Moderate
Ripgut brome (<i>Bromus diandrus</i>)	–	Moderate
Soft chess (<i>Bromus hordeaceus</i>)	–	Limited
Red brome (<i>Bromus madritensis</i> ssp. <i>rubens</i>)	–	High
Italian thistle (<i>Carduus pycnocephalus</i>)	C	Moderate
Iceplant (<i>Carpobrotus edulis</i>)	–	High
Yellow star-thistle (<i>Centaurea solstitialis</i>)	C	High
Bull thistle (<i>Cirsium vulgare</i>)	C	Moderate
Poison hemlock (<i>Conium maculatum</i>)	–	Moderate
Bindweed (<i>Convolvulus arvensis</i>)	C	–
Pampas grass (<i>Cortaderia selloana</i>)	–	High
Bermudagrass (<i>Cynodon dactylon</i>)	–	Moderate
Water hyacinth (<i>Eichhornia crassipes</i>)	C	High
Redstem filaree (<i>Erodium cicutarium</i>)	–	Limited
Eucalyptus (<i>Eucalyptus</i> sp.)	–	Limited / Moderate
Rattail fescue (<i>Festuca</i> [Vulpia] <i>myuros</i>)	–	Moderate
Italian ryegrass (<i>Festuca</i> [Lolium] <i>perennis</i>)	–	Moderate
Edible fig (<i>Ficus carica</i>)	–	Moderate
Cutleaf geranium (<i>Geranium dissectum</i>)	–	Moderate
Field mustard (<i>Hirschfeldia incana</i>)	–	Moderate
Mediterranean barley (<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>)	–	Moderate
Hare barley (<i>Hordeum murinum</i> ssp. <i>leporinum</i>)	–	Moderate
Smooth cat's-ear (<i>Hypochaeris glabra</i>)	–	Limited
Perennial pepperweed (<i>Lepidium latifolium</i>)	B	High
Bur clover (<i>Medicago polymorpha</i>)	–	Limited
Tree tobacco (<i>Nicotiana glauca</i>)	–	Moderate
Harding grass (<i>Phalaris aquatica</i>)	–	Moderate
English plantain (<i>Plantago lanceolata</i>)	–	Limited
Wild radish (<i>Raphanus sativus</i>)	–	Limited
Himalayan blackberry (<i>Rubus armeniacus</i>)	–	High
Curly dock (<i>Rumex crispus</i>)	–	Limited
Russian thistle (<i>Salsola tragus</i>)	C	Limited
Milk thistle (<i>Silybum maritimum</i>)	–	Limited
Johnsongrass (<i>Sorghum halapense</i>)	C	–

Species	The California Department of Food and Agriculture	California Invasive Plant Council
Hedge parsley (<i>Torilis arvensis</i>)	–	Moderate
Puncture vine (<i>Tribulus terrestris</i>)	C	–
Rose clover (<i>Trifolium hirtum</i>)	–	Moderate

Notes: The California Department of Food and Agriculture and California Invasive Plant Council lists assign ratings that reflect the California Department of Food and Agriculture and California Invasive Plant Council views of the statewide importance of the pest, likelihood that eradication or control efforts would be successful, and present distribution of the pest in the state. These ratings are guidelines that indicate the most appropriate action to take against a pest under general circumstances. The California Invasive Plant Council species list is more inclusive than the California Department of Food and Agriculture list.

The **California Department of Food and Agriculture categories** indicated in the table are defined as follows:

B: Eradication, containment, control or other holding action at the discretion of the commissioner.

C: State-endorsed holding action and eradication only when found in a nursery; action to retard spread outside nurseries at the discretion of the county agricultural commissioner.

The **California Invasive Plant Council categories** indicated in the table are defined as follows:

High: Species with severe ecological impacts, high rates of dispersal and establishment, and usually widely distributed.

Moderate: Species with substantial and apparent ecological impacts, moderate to high rates of dispersal, establishment dependent on disturbance, and limited to widespread distribution.

Limited: Species with minor ecological impacts, low to moderate rates of invasion, limited distribution, and locally persistent and problematic.

Environmental Consequences

Build Alternative

The Build Alternative has the potential to create additional disturbed areas for a temporary period and introduce and spread invasive plant species to uninfected areas within and adjacent to the biological study area. This would be of particular concern for natural communities of special concern, where nonnative plants could outcompete and replace native vegetation.

In compliance with the Executive Order on Invasive Species, Executive Order 13112, and guidance from the Federal Highway Administration, any necessary landscaping and erosion control included in the project will not use species listed as invasive. All equipment and materials will be inspected for the presence of invasive species and cleaned if necessary. In areas with particular sensitivity, extra precautions will be taken if invasive species are found in or next to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur.

No-Build Alternative

Under the No-Build Alternative, no construction of the proposed project would take place, and there would be no potential to introduce invasive species.

Avoidance, Minimization, and/or Mitigation Measures

Avoidance and minimization measures to install orange construction fencing between the construction area and adjacent sensitive resources, conduct

environmental awareness training for construction employees, and conduct biological monitoring discussed in Section 2.3.1, Natural Communities, and the avoidance and minimization measures to prevent the spread or introduction of aquatic invasive species and invasive plant species discussed in Section 2.3.3, *Animal Species*, would ensure that there would be no adverse effects related to invasive species.

2.4 Cumulative Impacts

2.4.1 Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of the proposed project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor but collectively substantial impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

The California Environmental Quality Act (CEQA) Guidelines Section 15130 describes when a cumulative impact analysis is necessary and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts under CEQA can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts under the National Environmental Policy Act (NEPA) can be found in 40 Code of Federal Regulations Section 1508.7.

2.4.2 Approach to Cumulative Impacts

Federal regulations provide little direct guidance for addressing cumulative effects under NEPA, and therefore individual agencies have developed procedures within the framework provided by the Council on Environmental Quality. Caltrans, as delegated from Federal Highway Administration, has developed a step-by-step process that defines the study area for the resource, assesses the health of the resource, identifies the effects of the proposed project and past, present, and reasonably foreseeable projects, assesses the potential cumulative impact, the project's contribution, and the need for mitigation.

As specified in Caltrans/Federal Highway Administration guidance (Guidance for Preparers of Cumulative Impact Analysis 2016), the cumulative impact analysis should focus only on resources that are adversely affected by the cumulative action. This typically includes resources currently in poor or stressed conditions, declining health, or at risk.

CEQA Guidelines provide that cumulative impacts can be analyzed by the list or projections approach. The list approach lists reasonably foreseeable projects that contribute to the same cumulative impacts as the project. The projection approach relies on adopted plans to represent the reasonably foreseeable projects. The cumulative analysis for the project takes into consideration other ongoing projects in the same geographic area as the proposed project, as well as planned land use and transportation and circulation projects identified in the City of Lathrop and San Joaquin County general plan and policy documents. Developments and plans in the project region include the following:

- **River Islands Specific Plan:** A mixed-use development including approximately 11,000 residential units on 4,995 acres west of the San Joaquin River and Interstate 5;
- **Mossdale Village Specific Plan:** A mixed use development located west of I-5 and east of the San Joaquin River on 1,161 acres;
- **Central Lathrop Specific Plan – Stanford Crossing:** A mixed-use development on 1,521 acres located north of Mossdale Village;
- **Watt Commercial Properties – Lathrop Market Place:** A commercial development anchored by the Target Shopping Center and located on 27 acres at the corner of Louise Avenue and River Islands Parkway; and
- **South Lathrop Specific Plan – Tripoint Logistics Center:** A light industrial/commercial development on 315 acres south of State Route 120 at Yosemite Avenue.

Additional cumulative projects include flood management projects affecting the San Joaquin River and restoration and other water-related projects in and near the San Joaquin River.

2.4.3 Assessment of Cumulative Impacts

Resource Areas Where there is No Cumulative Condition

The proposed project would not result in impacts related to the resource areas which are discussed at the beginning of Chapter 2, *Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures*.

Therefore, the project could not contribute to cumulative impacts on the following resources from the beginning of Chapter 2, and they will not be discussed further in this cumulative impact analysis.

- Consistency with Plans

- Land Use and Planning
- Coastal Zone
- Wild and Scenic Rivers
- Growth
- Timberland
- Paleontology
- Plant Species

Analysis in Chapter 2 above and in Chapter 3 below determined that other resource areas would not be affected by the project. Because no impacts on these resource areas would result from the project, there is no potential for the project to contribute to a cumulative impact on the following resources.

- Community Character and Cohesion – Community Impact Assessment (July 2017) discussed in Section 2.1.4 - concluded that the area was rural – neighborhoods include Mosssdale Village, residences along Manthey and Queriolo Road, and River Islands. Acquisitions would not displace any residents, businesses or community resources. The purpose of the project is to connect the City of Lathrop and developing areas. The roadway alignment is planned and would not divide a neighborhood. No impact on community character and cohesion would occur.
- Environmental Justice – As discussed in Section 2.1.6, for adverse environmental justice effects to result from the project, two conditions need to exist. First, minority or low-income populations need to reside in parts of the study area that would be adversely affected by the project. Second, any adverse impacts would need to fall disproportionately on minority or low-income populations, rather than proportionately on all populations affected by the project. The per capita income of the project area is slightly lower than for the rest of the County, and the minority population is similar to that of the surrounding area. No long-term impacts are anticipated. Temporary impacts of the project would affect all neighbors and roadway, regardless of race, ethnicity, or income, and therefore impacts would not be borne disproportionately by low-income or minority populations.
- Cultural Resources – Architectural Resources – As discussed in Section 2.1.10, the project would not result in adverse effects on the built environment resources that meet the criteria for listing in the National Register of Historic Places or California Register of Historical Resources, and therefore the project has no potential to contribute to cumulative impacts on architectural properties.
- Utilities and Emergency Services – Construction of the proposed project would require the relocation of some utilities as discussed in Section 2.1.7, *Utilities and Emergency Services*. Coordination with utility providers would result in little or no effect on utilities. Therefore, the proposed project would not contribute to a cumulative impact on utilities.

Since the preparation of technical studies for this project, fire and police stations have been constructed within the River Islands development. With these additions to emergency services, emergency providers no longer need to cross the river or the Union Pacific Railroad and therefore, the replacement of the bridge would not result in impacts on response times. Therefore, the project would not contribute to a cumulative impact related to emergency services.

- **Geology/Soils/Seismicity/Topography**—As described in Section 2.2.3, Geology, Soils, Seismicity, and Topography, the project area and vicinity contain no active faults and are subject to a low potential for seismic-related ground failure because of the low potential for strong ground shaking and the gently sloping topography. Geotechnical studies and design and compliance with Caltrans standards would address any liquefaction or other seismic-related risk, and there would be no contribution to a cumulative change in the area's susceptibility to seismic hazards. There is also the potential to increase soil erosion rates and loss of topsoil. Impacts of the proposed project on this resource area would be temporary and related to construction, and would be avoided through compliance with regulations and implementation of standard design and best management practices. Other projects in the area would encounter similar conditions and restrictions. Therefore, there would be no cumulative impact related to geology, soils, seismicity, or topography.
- **Minerals** – The project area is located within a designated mineral resource zone. However, the project replaces an existing bridge and affects land that is currently zoned for development. The project area is not within an area that is utilized for mineral extraction and the development of the area would not result in the loss of valuable mineral resources. Therefore, there is no potential for the project to contribute to a cumulative impact.
- **Population and Housing** – The proposed project is a bridge replacement project that would not result in the displacement of people or the introduction of additional population that would require housing. Therefore, the project could not contribute to a cumulative impact on population and housing.
- **Public Services** – The proposed project is a bridge replacement project that would not result in the introduction of additional population that would require public services, such as police, fire, or library facilities. Therefore, the project could not contribute to a cumulative impact on public services.
- **Traffic and Transportation** – As discussed in Section 2.1.8, Traffic and Transportation/Pedestrian and Bicycle Facilities, all roadway segments and intersections would operate at acceptable conditions in 2040. The anticipated traffic volumes for design year 2040 incorporated foreseeable future projects and, therefore, are directly applicable to the cumulative analysis. Therefore, the proposed project could not contribute to a cumulative traffic impact.

The proposed project would be along a new alignment. Though other projects may be constructed within the Tracy area and may result in temporary construction-related impacts on traffic, they would not be located in the same area

or be constructed at the same time. Therefore, there would be no cumulative impact.

- Wildfire – The project is in an area that is “unzoned” for fire hazard severity. The project is in a flat area and is not subject to exacerbated wildfire risk. The project is a bridge replacement project and would not introduce people or structures to the area or require the construction of other infrastructure. Therefore, the proposed project would not result in impacts related to wildfire hazard and could not contribute to a cumulative impact.
- Wetlands and Non-wetland Waters – As discussed in Section 2.3.2, Wetlands and Other Waters, the proposed project would result in a permanent net gain of 0.04 acre of tidal perennial drainage. Therefore, the project would not contribute to any cumulative impact related to the fill of wetlands or non-wetland waters. Only temporary construction related impacts would result from project implementation. Temporary impacts would not contribute to a cumulative impact because there are no projects anticipated to be under construction at the same time in the same location.

Resource Areas with No Cumulative Impacts

There are no cumulative impacts related to the following resource areas.

Human Environment

Relocations and Real Property Acquisition

The study area for evaluating cumulative effects related to property acquisition and relocation includes the City of Lathrop and the adjacent unincorporated areas of San Joaquin County. The City of Lathrop and San Joaquin County have general plans that address growth and displacement of businesses and residences. Trends in San Joaquin have been to develop open areas, which result in minimal numbers of relocations. Property acquisitions for residential and commercial developments have been increasing, but are conducted under mutually acceptable conditions for private development. Therefore, the health of the resource is not considered declining or at risk.

Displacements of businesses and residences resulting from other projects are anticipated to be minimal, and some projects would result in the construction of new residential and commercial areas. Potentially adverse impacts associated with residential and commercial displacements for transportation projects, including the proposed project, will be handled in accordance with the Federal Uniform Relocation Assistance and Real Properties Acquisition Policies Act, as amended.

The proposed project would result in permanent acquisition or temporary construction easements on eleven properties; temporary construction easements would be necessary on 10 of those parcels and permanent acquisitions or easements would be required from 9 of those parcels. Real property acquisition for the proposed project and past, present, reasonably foreseeable projects would occur as indicated in approved planning documents, and addressed in the associated

environmental documents. There is no shortage of real property in the study area and all acquisitions will be acquired in accordance with the Real Properties Acquisition Policies Act. Therefore, the health of the resource is good and there is no cumulative impact related to property acquisition.

No displacements would occur. Displacements of businesses and residences resulting from reasonably foreseeable projects are anticipated to be minimal, as most development projects are occurring on previously open, undeveloped land. Some projects would result in the construction of new residential and commercial areas. Because the health of the resource is good, and displacements from past, present, and future projects are minimal, no cumulative impact related to displacements is anticipated.

Parks and Recreational Facilities

The study area for assessing cumulative impacts on parks and recreational facilities is the City of Lathrop. Lathrop parks and facilities are adequate to serve the population and new development includes parks. Furthermore, the City's general plan and the San Joaquin County Plan include goals and policies related to the creation and maintenance of parks and recreational facilities. Therefore, the shortage of park facilities in the study area is not an existing concern and the health of the resource is good.

The Mossdale County Park is located within the project area. Removal of the existing Manthey Road Bridge would result in construction-related temporary impacts on the facility, primarily noise and the presence of construction equipment. Physical access to the park, however, would not be affected. The impacts would be temporary, and no other projects are anticipated to be constructed in the area at the same time. Therefore, the project would not contribute to a cumulative impact.

Physical Environment

Hazardous Waste and Materials

The study area for evaluating cumulative impacts related to hazardous materials is the project footprint and a 0.5-mile radius. There are no open Cortese List sites in the area, and potential contamination in the area is related to agricultural and transportation uses that are widespread in California. Therefore, the health of the resource is moderate.

Construction of the proposed project and other projects in the vicinity would result in potential exposure of workers or the public to hazardous materials related to ground-disturbing activities and the removal or modification of facilities or structures. Soils in the vicinity of roadways maybe contaminated with aerially deposited lead, and agricultural soils may be contaminated with pesticides and other materials. Structures may contain lead-based paint, asbestos, or other hazardous materials. Construction may disturb contaminated soils or require the removal of structures containing hazardous materials, releasing them into the environment. These impacts

are all related to construction, and all projects must comply with state and federal regulations to prevent the release of hazardous materials and ensure worker and public safety. Also, not all projects will be constructed at the same time or in the same place. Therefore, no cumulative impact related to hazardous waste or materials is anticipated.

Resource Areas where a Cumulative Condition Exists

Human Environment

Farmland

The study area for evaluating cumulative effects on farmland is the northern San Joaquin Valley. As development in the area continues, agricultural lands continue to be converted to non-agricultural uses. According to data from the California Department of Conservation, from 2014 to 2016, approximately 3,000 acres of the nearly 750,000 acres of agricultural lands in San Joaquin County were removed from agricultural use, although there was a net gain of 81 acres in important farmland. At the county level, 5,168 acres of Prime and Unique Farmland were converted to another use from 2014–2016, according to the most recent available data published in the *San Joaquin County 2014–2016 Land Use Conversion* table. This was equal to 0.01 percent of Prime and Unique Farmland in the County. Statewide, 112,579 acres of Prime and Unique Farmland were converted to another use from 2010–2012, according to the most recent available data published in the *California Farmland Conversion Report 2015*, which was equal to approximately 0.02 percent of Prime and Unique Farmland in the state. The Lathrop and Tracy areas are undergoing development as housing in the San Francisco and San Jose areas becomes less affordable. While the health of the resource overall is good, the health of the resource in the Tracy/Lathrop area is declining.

As discussed in Section 2.1.3, *Farmland*, the proposed project would result in the conversion of 5.52 acres of prime farmland to transportation use. In the immediate project vicinity, existing and planned developments are expected to result in the conversion of large areas of formerly agricultural lands. The West Lathrop Specific Plan Environmental Impact Report indicates that the Mossdale Village Specific Plan would convert approximately 151 acres of agricultural land. At full build-out, the River Islands development will result in the conversion of approximately 3,620 acres of Prime Farmland and Farmland of Statewide importance. Therefore, a significant cumulative impact related to the conversion of farmland exists and the proposed project would contribute to that impacts.

The agricultural land would be acquired from 8 parcels but would not prevent the remainders of the parcels from being used for agricultural purposes in the future. The acquired acreage is located within the area that makes up the Mossdale Village Specific Plan and River Island Specific Plan. These Specific Plans and environmental impact reports include specific policies and mitigation to address conversion of agricultural land, including the proposed project. Therefore, the

project's contribution to a cumulative impact on farmland would not be considerable, and no additional mitigation is required.

Visual/Aesthetics

The project area was once mostly agricultural and rural land, but has become increasingly suburbanized over time. The study area for evaluating cumulative visual effects is the project area and a 0.5-mile radius. The study area west of the San Joaquin River is mostly developed with new residences, parks, and facilities. The study area east of the river is more rural, with some relatively recent residential development in the north and rural residences along Queirolo Road and farmland. The surrounding area is flat, with views of the Diablo Range from elevated vantage points. The area is well-lit at night. Proposed development projects would introduce more suburban development, particularly in the area of the Mossdale Village Specific Plan, but no other projects would directly affect views along the river. Residential and mixed-use development would continue to change the character of the study area from rural/agricultural to suburban. These projects could also incrementally add to glare and ambient atmospheric lighting. Therefore, there would be a cumulative impact related to visual character and light and glare.

The proposed project would remove the existing Manthey Road Bridge and replace it downstream, which would only slightly alter the existing visual character of the study area. The approach to the bridge would create a levee-like feature in an area that is currently undeveloped. This change would be in keeping with the character of the area. This impact would be further minimized by measures to include revegetation and landscaping. Therefore, the project's contribution to cumulative impacts related to visual character would not be considerable.

The project would include some lighting, which would result in an incremental increase to the lighting in the area. This would contribute to a cumulative impact. Permanent lighting would be directed downwards and would be shielded, and minimum lighting standards would be used to further reduce increased light and glare. Therefore, the contribution of the proposed project to cumulative impacts related to light and glare would be less than considerable.

Cultural Resources – Archaeological Resources/Tribal Cultural Resources

The study area for the analysis of cumulative impacts on archaeological resources is California's Central Valley, which contains numerous prehistoric habitation and occupation sites, particularly along rivers, streams, and other perennial sources of water. As the population has grown in the modern era and open spaces have been converted to urban land uses, including residential and commercial developments and the infrastructure that supports them, archaeological sites have been disturbed and destroyed. Environmental regulations that began in the 1970s slowed that process to some extent, but development continues to reduce the quantity of these types of resources. Therefore, the health of the resource is declining.

Past, present, and future projects within California's Central Valley have and continue to result in the disturbance and destruction of archaeological sites. Mitigation for impacts on archaeological sites has often been data recovery, which mitigates loss of data, but results in the destruction of the site. Additionally, all excavation associated with all projects has the potential to result in the accidental discovery of archaeological sites or human remains. A cumulative impact on archaeological resources exists.

The project area is sensitive for buried cultural resources because there is a known site in the vicinity. However, Extended Phase I excavations did not result in the location of any archaeological resources that meet the criteria for historic properties. Construction of the proposed project would contribute to a cumulative impact through the potential disturbance of buried cultural resources. Because no archaeological site that meets the criteria to be listed in the National Register of Historic Places or California Register of Historical Resources is located within the project area during surveys or excavations, and because potential impacts will be minimized through a Post Review Discovery Plan to ensure the appropriate treatment of any accidental discoveries and ensure that any potential impacts would be minimized, the project's contribution would not be considerable.

Physical Environment

Hydrology and Floodplain

The study area for evaluating cumulative impacts on hydrology and floodplain resources is the San Joaquin River watershed. Floodplain resources in the San Joaquin River watershed are influenced by melting snowpack from the Sierra Nevada and rainwater flowing into the San Joaquin River. Development and associated infrastructure in the San Joaquin Valley has encroached on the San Joaquin River corridor and increased impervious surfaces and associated stormwater runoff volumes and rates in the watershed. Encroachment into or across the flood corridor can change localized river hydraulics and cause flooding if floodway capacity is reduced, storm drainage capacity is exceeded or runoff is conveyed to areas where flood storage may not be available. Impervious surfaces created in floodplains can also increase the rate of runoff from a site, which can affect flooding conditions. Past, present and future projects in the vicinity of the proposed project such as bridges, levees and the River Islands and Mossdale Village Specific Plans have or could have effects on river water surface elevations and flows. Future climate change could also exacerbate flooding conditions. Although future cumulative projects are required to minimize effects on flooding, river hydraulics and floodplain resources through design and stormwater drainage improvements, the cumulative projects have resulted in a modified and highly managed river corridor and floodplain.

The proposed project's contribution to hydraulic and floodplain effects in and near the study area would be to add 6 acres of impervious surfaces on the landward side of the levee associated with the bridge approach. The cumulative effect related to increasing impervious surfaces resulting from all cumulative projects could be

substantial even with mitigation measures built into those projects based on the development acreage (River Islands at nearly 5,000 acres and Mossdale Village at 1,161 acres). However, because of the relatively small acreage for the bridge approach, lack of change in drainage patterns, and required implementation of measures under the City's Phase II Municipal Separate Storm Sewer Systems permit that prevent impacts to receiving waters from increased flow volumes and rates, the project's contribution to the cumulative impact would not be considerable.

The cumulative effect related to riverbed encroachment is historically considerable, but the proposed project would not affect river hydraulics or flooding conditions and would result in a net gain of 0.04 acre of riverbed area (due to the removal of the existing bridge) that would improve local floodway capacity. Therefore, the proposed project would not have a considerable contribution to cumulative river hydraulic and flooding effects.

Water Quality and Stormwater

The study area for evaluating cumulative impacts on water quality and stormwater runoff is the San Joaquin River watershed for surface water and the San Joaquin Valley – Tracy Subbasin for groundwater quality. The San Joaquin River at the project site is listed on the 2014–2016 Integrated Report (Clean Water Act Section 303[d] List / 305[b] Report) for chlorpyrifos, DDT, diazinon, electrical conductivity, Group A pesticides, invasive species, mercury, and toxicity. Therefore, the health of the resource from a water quality perspective is poor.

Cumulative projects that could have temporary construction effects on water quality, such as sedimentation or discharge of pollutants to the river, could further contribute to poor San Joaquin River water quality conditions. The proposed project's river construction activities could contribute to this effect. With implementation of avoidance and minimization measures and construction best management practices, construction impacts would be minimized. Therefore, the project's cumulative contribution is considered to be minor because of the relatively small bridge construction footprint and the temporary in-water work required for project work.

Similarly, there may be a cumulative effect on stormwater runoff quality from nearby Specific Plan development created by an increase in impervious surfaces and continuing increase in pollutants from traffic, landscaping, and residential and commercial uses. Therefore, a cumulative impact exists. The proposed project would result in an increase of 6 acres of impervious surfaces, but because the project is not capacity increasing, the pollutant runoff would not increase from current conditions. The proposed project would also adhere to Storm Water Pollution Prevention Plan requirements and the City's Phase II Municipal Separate Storm Sewer Permit to ensure that minimal effects from the proposed project on surface and stormwater runoff quality would occur in the project vicinity. Therefore, the project would not contribute to a cumulative impact related to stormwater runoff.

Air Quality

The study area for evaluating air quality effects is the San Joaquin Valley Air Basin. Air quality effects are inherently cumulative because the assessment of air quality relates to the air basin as a whole, evaluates conditions in the construction a design years (2023 and 2040 respectively) and depends largely on traffic forecasts, which include build-out assumptions that are consistent with adopted demographic forecasts. Consequently, an evaluation of air quality operational effects assumes future regional growth consistent with planned projections. As discussed in Section 2.2.5, Air Quality, the study area has experienced violations of federal and state air quality standards and therefore the health of the resource is poor.

The proposed project and cumulative projects would result in impacts on air quality. As noted in Section 2.2.5, operation of the proposed project would result in beneficial impacts related to criteria pollutant emission (see Table 2.2.5-4). Therefore, the proposed project would not contribute to a cumulative impact on air quality associated with operations.

Construction of the proposed project and cumulative projects would result in construction-related criteria pollutant emissions. The temporary impacts of the proposed project would be minimized with the implementation of Caltrans Standard Specification Section 14 and compliance with state and federal regulations. Other projects would also be required to comply with regulations to reduce temporary air quality impacts. Therefore, with implementation of avoidance and minimization measures, the contribution of the proposed project would not be considerable.

Noise and Vibration

Noise levels in the project area are moderate, with traffic noise as the dominant ambient noise. The Union Pacific Railroad also passes through the area and would be an intermittent but significant noise source. The study area for evaluating cumulative impacts on noise consists of the project area and sensitive land uses within a 500-foot radius.

As discussed in Section 2.2.6, Noise and Vibration, traffic noise levels would approach or exceed the noise abatement criterion for residential or park uses (Activity Categories B and C, respectively) at 16 receiver locations under the Build Alternative. Traffic noise from I-5 and State Route 120, and intermittent noise from the railroad, is present, but not severe and the health of the resource is moderate.

For consideration of cumulative impacts from operation of the proposed project, this analysis examines whether implementation of the project would make a considerable contribution to noise levels. The analysis of noise level changes resulting from roadway operations is inherently cumulative because the traffic forecasts use build-out assumptions. Noise levels for existing conditions range from 55 to 76 A-weighted decibels hourly equivalent sound level. Under design-year build conditions, predicted traffic noise levels range from 56 to 77 A-weighted decibels hourly equivalent sound level. There is one residential location that would

experience an increase of 6 A-weighted decibels and several that would experience an increase of 4 A-weighted decibels. The proposed project's increase in noise levels would contribute to a cumulative noise impact. However, as shown in Table 2.2.6-2, the contribution of the proposed project is 5 A-weighted decibels at one location and 3 A-weighted decibels or less at all other locations. Therefore, the project's contribution to a cumulative noise impact is not expected to be considerable.

Temporary increases in noise could occur during construction activities. However, implementation of Caltrans Standard Specifications and compliance with applicable local noise standards to minimize the temporary noise effects of construction would ensure that construction-related noise impacts would be reduced. Other projects are required to adopt similar noise-reduction measures, either as directed by Caltrans or as a result of local noise ordinances. Also, construction of more than one project is not anticipated to take place at the same time or in the same location. Consequently, a cumulative impact related to construction noise is not anticipated.

Biological Resources

Natural Communities of Special Concern

The project area supports two natural communities of special concern, riparian woodland and riparian scrub. Because riparian vegetation is restricted to areas along streams, the study area for these riparian communities is the lower San Joaquin River. Riparian vegetation on the lower San Joaquin River has been degraded since the early part of the twentieth century, and more extensive removal occurred for construction of federal levees between Stockton and the Stanislaus River that began in 1956 and continued with modifications through the mid-1980s (California Department of Water Resources 2002; United States Army Corps of Engineers 2018). The overall health of the resource is poor due to the high level of historic loss.

As discussed in Section 2.3.1, Natural Communities, the proposed project would result in permanent loss of up to 0.14 acre of riparian vegetation (0.07 acre of riparian woodland and 0.07 acre of riparian scrub) within the area designated as the limits of disturbance. Temporary disturbance of an additional 0.08 acre of riparian woodland and 0.09 acre of riparian scrub would occur during construction for equipment access. Of the approximately 175 acres of riparian vegetation in the River Islands at Lathrop project, between 10 and 50 acres would be permanently removed. Under the West Lathrop Specific Plan, 0.46 acre of riparian vegetation surrounding a pond would be removed. Additionally, development, flood control, and levee maintenance projects all result in impacts on riparian communities. Impacts of the proposed project would be minimized by avoidance and minimization measures to avoid disturbance to additional riparian areas through fencing and monitoring during construction. Additionally, riparian vegetation and Shaded Riverine Aquatic cover habitat will be compensated with the purchase of riparian mitigation credits. With this mitigation, the project's contribution to a cumulative impact on riparian woodland and riparian scrub would not be considerable.

Animal Species

As discussed in Sections 2.3.3, *Animal Species* and 2.3.4, *Threatened and Endangered Species*, the biological study area includes potential habitat for several special-status animal species, which includes: riparian brush rabbit, Swainson's hawk, southern distinct population segment of North American green sturgeon, Central Valley spring-run Chinook salmon, Delta smelt, and longfin smelt. The study areas and impacts for these species varies as described below.

Wildlife Species

Non-Listed Special-Status Wildlife

The study area for evaluating cumulative effects on the non-listed special-status wildlife discussed in Section 2.3.3 is their habitat within the northern San Joaquin Valley. The primary threat to these species has been habitat loss. As described in Section 2.3.3, the proposed project would result in the permanent and temporary loss of habitat for these species and result in the disruption of normal behaviors, injury, and/or mortality during construction.

Past, present, and reasonably foreseeable (future) projects within the resource study area evaluated in combination with the proposed project include flood risk reduction affecting the San Joaquin River, the Long Term Operations of the Central Valley Project and California State Water Project, habitat restoration (e.g., Upper San Joaquin River Restoration Program), and local development projects (e.g., River Islands Specific Plan, Mossdale Village Specific Plan, Central Lathrop Specific Plan – Stanford Crossing, Mossdale Village Specific Plan, South Lathrop Specific Plan). Development projects have or would entail similar project features (e.g., construction of the River Islands Parkway bridge over the San Joaquin River) and construction activities (e.g., vegetation clearing, grading) that would result in the loss of occupied and potential habitat for these species.

Construction of the proposed project could result in the temporary disturbance of non-listed special-status wildlife species and could result in their mortality. Other projects, while not under construction at the same time could also result in similar effects on these species. The contribution of the proposed project, as well as that of other projects would be avoided or minimized by measures to conduct preconstruction surveys and implement measure to avoid effects on these species. Therefore, there is not a cumulative impact related to construction.

The study area for evaluating cumulative impacts on western pond turtle is the range of the species in the northern San Joaquin Valley, which includes ponds, lake, marshes, and rivers and associated upland habitat. Pond turtles have declined throughout their range due primarily to the conversion of their habitat for urban and agricultural purposes, and therefore the health of the resource is poor. The proposed project would result in the permanent loss of 3.38 acres of potential upland habitat for western pond turtle. Other projects would result in loss of similar habitat and therefore a cumulative impact exists and the proposed project would contribute.

However, because there have been no records of western pond turtles within 10 miles of the project area and because the upland habitat is generally disturbed and therefore of low quality, the project's contribution would not be considerable.

The study area for evaluating cumulative impacts on non-listed special-status birds that would primarily use the ruderal grasslands in the study area, which include western burrowing owl, loggerhead shrike, and northern harrier, is the range of these species within the northern San Joaquin Valley. These species have generally declined due to the conversion of the grasslands on the valley floor into urban and agricultural lands, and therefore the health of the resource is poor. The proposed project would result in the permanent loss of 3.38 acres of potential habitat for these species. Other projects would result in loss of similar habitat and therefore a cumulative impact exists and the proposed project would contribute. However, considering the relatively small size and the marginal quality of this habitat, the project's contribution would not be considerable.

The study area for evaluating cumulative impacts on non-listed special-status species that would primarily use the riparian habitat in the study area, which include yellow-breasted chat, yellow warbler, white-tailed kite, Modesto song sparrow, pallid bat, and western red bat is the range of these species within the northern San Joaquin Valley. These species have generally declined due to the conversion of the riparian habitat due to urban and agricultural development, and therefore the health of the resource is poor. The proposed project would result in the permanent loss of 0.14 acre of riparian vegetation (0.07 acre of riparian woodland and 0.07 acre of riparian scrub) that provide potential habitat for these species. Other projects would result in loss of similar habitat and therefore a cumulative impact exists and the proposed project would contribute. However, impacts of the proposed project would be minimized by avoidance and minimization measures to avoid disturbance to riparian areas including fencing and monitoring during construction. Additionally, riparian vegetation will be restored on site to the extent feasible and the remainder of the acreage will be compensated with the purchase of riparian mitigation credits. With this mitigation, the project's contribution to a cumulative impact on riparian woodland and riparian scrub habitat for these species would not be considerable.

Listed Special-Status Wildlife

Riparian Brush Rabbit

The study area for evaluating cumulative effects on riparian brush rabbit is limited to the current range of the species, which is in the portion of San Joaquin County that includes Caswell Memorial State Park, the San Joaquin River National Wildlife Refuge, and the South Delta. The decline of riparian brush rabbit has been attributed to the loss and fragmentation of San Joaquin Valley riparian forests and the conversion of land within the floodplains from shrub dotted pastureland to agricultural lands, and therefore the health of the resource is poor. As described in Section 2.3.4, Threatened and Endangered Species, the proposed project would

result in the permanent reduction of potential riparian brush rabbit habitat along the San Joaquin River by 0.07 acre. However, the habitat is poor quality, and it is unknown whether riparian brush rabbit is present. It is likely that at most the riparian habitat would be used for dispersal.

Past, present, and reasonably foreseeable (future) projects within the resource study area evaluated in combination with the proposed project include flood risk reduction affecting the San Joaquin River, the Long Term Operations of the Central Valley Project and California State Water Project, habitat restoration (e.g., Upper San Joaquin River Restoration Program), and local development projects (e.g., River Islands Specific Plan, Mossdale Village Specific Plan, Central Lathrop Specific Plan – Stanford Crossing, Mossdale Village Specific Plan, South Lathrop Specific Plan). Development projects have or would entail similar project features (e.g., construction of the River Islands Parkway bridge over the San Joaquin River) and construction activities (e.g., vegetation clearing, grading) that would result in the loss of occupied and potential riparian brush rabbit habitat. The actions could also result in the disruption of normal behaviors due to noise and visual disturbances during construction, thereby potentially adversely affecting growth, survival, or reproductive success in the resource study area. Therefore, a cumulative impact on riparian brush rabbit in study area exists. The proposed project could contribute to that impact. However, avoidance and minimization measures described in Section 2.3.4, including methods for removing vegetation and use of exclusion fencing, in combination with the marginal nature of the habitat would ensure that that project's contribution would not be considerable.

Swainson's Hawk

The study area for evaluating cumulative effects on Swainson's hawk is the northern San Joaquin Valley. The primary threat to Swainson's hawk is the loss of foraging and nesting habitat, which has been declining, and therefore the health of the resource is poor. The proposed project would result in the permanent loss of 4.92 acres and the temporary disturbance of 9.17 acres of suitable foraging habitat. The proposed project would also result in the permanent loss of 0.07 acre and the temporary loss of 0.08 acre of riparian woodland that provides suitable nesting habitat for Swainson's hawk. The presence of construction crews and equipment and the noise from pile driving could disrupt normal behaviors, including nesting.

Past, present, and reasonably foreseeable (future) projects within the resource study area evaluated in combination with the proposed project include flood risk reduction affecting the San Joaquin River, the Long Term Operations of the Central Valley Project and California State Water Project, habitat restoration (e.g., Upper San Joaquin River Restoration Program), and local development projects (e.g., River Islands Specific Plan, Mossdale Village Specific Plan, Central Lathrop Specific Plan – Stanford Crossing, Mossdale Village Specific Plan, South Lathrop Specific Plan). Development projects have or would entail similar project features (e.g., construction of the River Islands Parkway bridge over the San Joaquin River) and construction activities (e.g., vegetation clearing, grading) that would result in the loss of

Swainson's nesting and foraging habitat. The actions could also result in the disruption of normal behaviors, including nesting and foraging, due to noise and visual disturbances during construction, thereby potentially adversely affecting growth, survival, or reproductive success in the resource study area. Therefore, a cumulative impact on Swainson's hawk exists and the proposed project could contribute to that impact. Implementation of avoidance and minimization measures to locate and avoid active nests and remove or trim trees during the non-breeding season would ensure that the project's contribution to effects on breeding habitat would not be considerable.

The San Joaquin County Multi-Species Habitat Conservation and Open Space Plan, in which Swainson's hawk conservation is a major emphasis, includes the preservation and management of up to 62,000 acres Swainson's hawk foraging habitat (San Joaquin Council of Governments 2000). Also, the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan's 2018 Annual Report states the following in regard to Swainson's hawk in the County: "Overall, the Swainson's hawk population in San Joaquin County appears to be doing well, with a relatively high density of nesting pairs and a high rate of nest success" (San Joaquin County Council of Governments 2018). Considering the ongoing efforts to protect habitat for Swainson's hawk and the status of the species in the County, the permanent loss of 4.92 acres of foraging habitat would not be cumulatively considerable.

Fish Species

The study area for evaluating cumulative effects on non-listed fish species and threatened and endangered fish species (southern distinct population segment of North American green sturgeon, California Central Valley steelhead distinct population segment, Central Valley spring-run Chinook salmon, delta smelt, and longfin smelt) and critical habitat, as appropriate, includes the San Joaquin River Basin, including the east side tributaries (Merced, Stanislaus, Tuolumne rivers), the south Delta, and the San Joaquin-Sacramento River Delta proper. All of these fish populations have been reduced in abundance and distribution relative to historical conditions. As described for fish species in Section 2.3.3, *Animal Species* and Section 2.3.4, *Threatened and Endangered Species*, collectively their decline in the study area has been caused by multiple factors. Relative to historical conditions, the health of these fish populations is poor, which has prompted California Department of Fish and Wildlife, National Marine Fisheries Service, and United States Fish and Wildlife Service to define these species as a Species of Special Concern (California Department of Fish and Wildlife) or list these species as threatened or endangered under California Endangered Species Act (California Department of Fish and Wildlife) or the federal ESA (National Marine Fisheries Service, United States Fish and Wildlife Service), as appropriate.

As described for "Fish Species" in Section 2.3.3, *Animal Species* and Section 2.3.4, *Threatened and Endangered Species*, impacts of the proposed project on non-listed special-status fish species and threatened and endangered fish species and their

habitat include both short-term and long-term effects. Short-term effects include temporary construction-related impacts on fish and their aquatic habitat from underwater construction noise, water quality impacts (suspended sediment and turbidity), and temporary substrate and water column habitat loss from temporary piles and cofferdams. Long-term effects would include the permanent substrate and water column habitat loss from permanent bridge piers; permanent increase in artificial shade, impervious surfaces, and direct lighting; loss of riparian habitat, including shaded riverine aquatic cover, and the introduction and spread of aquatic invasive species.

Past, present, and reasonably foreseeable (future) projects within the resource study area evaluated in combination with the proposed project include flood risk reduction affecting the San Joaquin River, water supply and operational improvements (e.g., California WaterFix), National Marine Fisheries Service and United States Fish and Wildlife Service biological opinions for the Long Term Operations of the Central Valley Project and California State Water Project, habitat restoration (e.g., Upper San Joaquin River Restoration Program), the State Water Resources Control Board's update to the 2006 Bay-Delta Plan—Phase II, water transfers, and local development projects (e.g., River Islands Specific Plan, Mossdale Village Specific Plan, Central Lathrop Specific Plan – Stanford Crossing, Mossdale Village Specific Plan). Development projects have or would entail similar project features (e.g., construction of the River Islands Parkway bridge over the San Joaquin River) and construction activities (e.g., pile driving, vegetation clearing, grading) that could also result in temporary water quality and construction noise impacts, temporary and permanent loss of riparian, aquatic and substrate habitat, permanent increase in over-water artificial structure (shade), increased direct lighting on the San Joaquin River, and increased impervious surfaces resulting in additional storm runoff volume and water quality constituents being discharged to the river. In addition, water transfers, habitat improvement, and water supply and operational improvements projects could expose fish to changes in hydrodynamics (flow paths), water quality, habitat availability, water temperature, and entrainment at water pumps, thereby potentially adversely affecting growth, survival, or reproductive success in the resource study area. Therefore, a significant cumulative impact on fish and aquatic habitat in the San Joaquin River system exists and the proposed project could contribute to that impact.

Short-term, temporary construction-related impacts on fish and aquatic habitat from the proposed project are not anticipated to contribute to cumulative impacts on fish because in-water construction activities that have the greatest potential for causing short-term, temporary impacts would be restricted to the June 1 to October 31 in-water construction period when listed species are either absent from the project area or their abundance in the project area is low. In addition, implementation of avoidance, minimization, and/or mitigation measures would avoid or reduce significant effects on special-status fish species and aquatic habitat in the San Joaquin River, and any residual impacts associated with these construction activities would be limited to one to three construction seasons, and be localized and of short duration.

Long-term effects could contribute to cumulative impacts. The proposed project would result in a net increase of overwater structure (artificial shade) on aquatic habitat, including designated critical habitat for listed species, in the San Joaquin River by 17,490 square feet (0.40 acre). This additional permanent shading of the San Joaquin River by the new bridge would contribute to the approximately 10,500 square feet (0.24 acre) of artificial shade created by the River Islands Parkway Bridge that was constructed in 2011 approximately 1 mile downstream of the proposed project. Overwater structures can alter underwater light conditions and provide potentially favorable holding conditions for juvenile and adult fish, including species that prey on juvenile fishes of listed species. Because of the height of the bridge over the water (approximately 32 feet), ambient light levels generally would be expected to penetrate into the water, thereby minimizing the effect of bridge shading on aquatic habitats in the San Joaquin River. Additionally, purchase of compensatory mitigation in the form of channel enhancement credits at a National Marine Fisheries Service-approved anadromous fish and United States Fish and Wildlife Service-approved delta smelt conservation bank would mitigate for significant impacts on critical habitat. Therefore, because compensatory mitigation would be acquired and the effects of the new shading would be minimized due to the height of the bridge, the proposed project's contribution to a cumulative impact on aquatic habitats in the San Joaquin River would not be considerable, and no further mitigation is required.

The proposed project would result in the permanent loss of approximately 0.014 acre and a temporary loss of approximately 0.016 acre of overhead (shade) and instream Shaded Riverine Aquatic cover. Shaded Riverine Aquatic cover maintains shade and reduces thermal input, provides an energy input to the aquatic habitats in the form of fallen leaves and insects (a food source for fish), and provides fish with protection from predators. Other levee modification projects planned in the region would entail similar construction activities that could result in the removal of rock slope protection in light of current Corps levee vegetation guidelines. Any future action would be required to undergo similar regulatory review and/or permitting in accordance with current California Department of Fish and Wildlife, Regional Water Quality Control Board, Corps, National Marine Fisheries Service, and United States Fish and Wildlife Service requirements to protect sensitive fish species. The City will purchase mitigation credits to compensate for the remaining permanent losses of riparian woodland and riparian scrub on the waterside slope of the existing levees, including riparian woodland supporting Shaded Riverine Aquatic cover habitat. Because, riparian habitat would be mitigated to result in no net loss, the proposed project's contribution to a cumulative impact on aquatic habitats in the San Joaquin River would not be considerable, and no further mitigation is required.

The project would add 6.0 acres of impervious area to the watershed, resulting in additional stormwater runoff to the river. However, the watershed draining to the project site is approximately 14,200 square miles. The relatively small increase of impervious surfaces in relation to the watershed area draining to the project site suggests that impacts to water quality resulting from project activities would be minimal. Furthermore, traffic and stormwater runoff would not increase pollutants

and sediment into the San Joaquin River beyond the current levels, runoff would not modify the peak 100-year flow, and drainage patterns would be similar to existing conditions. Therefore, the proposed project is not anticipated to contribute to a cumulative water quality impact during operations.

Permanent lighting associated with the new bridge may result in increased nighttime light intensity on the water surface of the San Joaquin River. Future development in the project area will likely result in higher levels of ambient nighttime lighting, which could affect nighttime light levels on the San Joaquin River. The proposed project would remove lighting on the Manthey Road Bridge and replace it downstream, which would only slightly alter the existing condition. Additionally, the City will require shielding and focusing of permanent bridge lighting to avoid and minimize the amount of nighttime lighting that directly radiates on the San Joaquin River, to the extent practicable, thereby minimizing this affect. The intensity of bridge lighting that would directly radiate on the water surface of the San Joaquin River with mitigation incorporated would be minimal and the incremental contribution of nighttime lighting on the surface of the river would not be considerable.

Invasive Species

The study area for evaluating cumulative impacts related to terrestrial invasive species is the City of Lathrop, adjacent communities, including Tracy, and the adjacent unincorporated areas of San Joaquin County. Disturbed areas temporarily created during construction are susceptible to colonization by or spread of invasive plants. The introduction and spread of invasive plant species in the study area is of concern, because they can crowd out crops in agricultural areas and native species in uncultivated vegetation communities, degrade the quality of wildlife habitat, clog streams, and increase flood risk. The study area for invasive species that occur in aquatic habitats, such as Asian overbite clam, quagga mussel, zebra mussel, water hyacinth, hydrilla, and Brazilian elodea, is the San Joaquin River Basin. Aquatic invasive species can affect native fish and other ecologically and economically important species. The overall health of this resource is poor, due to the extent of existing invasive plant species in vegetation communities and the invasive aquatic species in the river system throughout the study area.

Invasive plant species could spread on land in the project area due to the creation of disturbed, unvegetated areas that could be colonized by invasive plants. Seeds or propagators of invasive plants can also be spread by the tires of construction vehicles. Aquatic invasive species could be spread by the operation of barges and conducting other in-water construction activities. Construction of other projects on undeveloped lands and in streams in the study area would also contribute to the risk of spreading invasive plant species by removing existing vegetation and conducting in-water work.

Considering past, current, and probable future projects, such as the development of the surrounding area, a cumulative impact likely exists. Ground disturbance, construction vehicle traffic, and in-water activities associated with the proposed

project could contribute to this cumulative impact. However, the project will include implementation of measures to minimize surface disturbance during construction, use weed-free erosion materials, and use of best management practices for construction, including for in-water work. Therefore, the project's contribution to a cumulative impact due to introduction and spread of invasive species would not be considerable.

Chapter 3 CEQA Evaluation

3.1 Determining Significance under CEQA

The project is subject to federal, as well as City of Lathrop and state environmental review requirements because the City of Lathrop proposes the use of federal funds from the Federal Highway Administration (FHWA) and/or the project requires approval from FHWA. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act (known as CEQA) and the National Environmental Policy Act. The City of Lathrop is the project proponent and the lead agency under CEQA. The Federal Highway Administration's responsibility for environmental review, consultation, and any other actions required by applicable federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 United States Code Section 327 and the Memorandum of Understanding dated December 23, 2016 and executed by the Federal Highway Administration and Caltrans. Caltrans is the lead agency under NEPA.

One of the main differences between NEPA and CEQA is the way significance is determined. Under NEPA, significance is used to determine whether an Environmental Impact Statement, or a lower level of documentation, will be required. NEPA requires that an Environmental Impact Statement be prepared when the proposed federal action (the project) as a whole has the potential to "significantly affect the quality of the human environment." The determination of significance is based on context and intensity. Some impacts determined to be significant under CEQA may not be of sufficient magnitude to be determined significant under NEPA. Under NEPA, once a decision is made regarding the need for an Environmental Impact Statement, it is the magnitude of the impact that is evaluated, and no judgment of its individual significance is deemed important for the text. NEPA does not require that a determination of significant impacts be stated in the environmental document.

CEQA, on the other hand, does require the City to identify each "significant effect on the environment" resulting from the project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an Environmental Impact Report must be prepared. Each and every significant effect on the environment must be disclosed in the Environmental Impact Report and mitigated if feasible. In addition, the CEQA Guidelines list a number of "mandatory findings of significance," which also require the preparation of an Environmental Impact Report. There are no types of actions under NEPA that parallel the findings of mandatory significance of CEQA. This chapter discusses the effects of this project and CEQA significance.

3.2 CEQA Environmental Checklist

This checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. Potential impact determinations include Significant and Unavoidable Impact, Less Than Significant With Mitigation Incorporated, Less Than Significant Impact, and No Impact. In many cases, background studies performed in connection with a project will indicate that there are no impacts to a particular resource. A No Impact answer reflects this determination. The words “significant” and “significance” used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this checklist are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

Project features, which can include both design elements of the project and standardized measures that are applied to all or most transportation projects, such as Best Management Practices and measures included in the Caltrans Standard Plans and Specifications or as Standard Special Provisions, are an integral part of the project and have been considered prior to any significance determinations documented below; see Chapter 1, *Proposed Project*, and Chapter 2, *Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures*, for a detailed discussion of these features. The annotations to this checklist are summaries of information contained in Chapter 2 that provide the rationale for significance determinations; for a more detailed discussion of the nature and extent of impacts, please see Chapter 2. This checklist incorporates by reference the information contained in Chapters 1 and 2.

3.2.1 Aesthetics

CEQA Significance Determinations for Aesthetics

Except as provided in Public Resources Code Section 21099, would the project:

a) Have a substantial adverse effect on a scenic vista?

No Impact—No designated scenic vistas or roadways are present within the project area, so there is no potential for the project to result in impacts on a scenic vista.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact—No designated scenic highways or other scenic resources are present within the project area, so there is no potential for the project to result in impacts on a scenic vista.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an

urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less Than Significant Impact—The proposed project would not substantially alter the visual character of the area because other truss work structures would remain in the area. The new bridge would be in keeping with the existing visual environment because it would be made with similar materials and be of a similar width and height as existing bridges. The fill on the east side of the river required to ramp the roadway up and over the levee would appear visually similar to existing levee access roads, which are common in the project vicinity. Avoidance and minimization measures described in Section 2.1.9, *Visual/Aesthetics*, to use native grass and wildflower species in erosion-control grassland seed mix and implement landscaping and visual buffers would further reduce this impact.

Construction of the project would result in temporary impacts from construction equipment and staging areas visible to residents and roadway users. The avoidance and minimization measures described in Section 2.1.9, installing visual barriers between construction staging and storage area and sensitive receptors, would ensure that this impact was less than significant.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less Than Significant Impact—The Golden Valley Parkway extension may include roadway lighting that could result in a substantial source of nighttime light and glare that would adversely affect nighttime views in the area. Implementation of an avoidance and minimization measure described in Section 2.1.9 to apply aesthetic design and minimum lighting standards for any new lighting would ensure this impact was less than significant.

3.2.2 Agriculture and Forest Resources

CEQA Significance Determinations for 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 Department 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?

Less Than Significant Impact—The proposed project would require acquisition of a total of 5.52 acres from two parcels of land classified as Prime Farmland. The total of 5.52 acres is equal to less than 0.0001 percent of the County Prime and Unique Farmland. A land evaluation and site assessment was performed using Form AD-1006 because prime farmland would be converted to accommodate the new roadway. The scoring of the site in Form AD-1006 finds the acquisition of 5.52 acres not to be substantial, largely due to the location of the acquisition on each parcel and the small size relative to the rest of the parcel. With acquisition as proposed, the remainder of each parcel could continue to be used for agricultural purposes. In addition, these parcels are planned for residential use as part of the General Plan and is zoned Mossdale Village Medium-Density Residential. This impact is less than significant. No mitigation is required.

b) Conflict with existing zoning for agricultural use or a Williamson Act contract?

No Impact—No land in the project area is under an existing Williamson Act contract. Therefore, there is no impact.

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))?

No Impact—No land in the project area is zoned as forest land or timber land. Therefore, there is no impact.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact—No land in the project area is zoned as forest land or timber land. There is no impact.

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?

Less Than Significant Impact—As discussed above, 5.52 acres of farmland would be converted to non-agricultural use. However, this amount is equal to or less than 0.0001 percent of County Prime and Unique Farmland and is not considered a substantial amount. Also, the land is currently zoned for residential development Mossdale Village Medium-Density Residential. As such, conversion of the land from agricultural land would not result in any conflicts with land use and zoning and this impact would be less than significant.

3.2.3 Air Quality

CEQA Significance Determinations for Air Quality

Where available, the significance criteria established by the applicable air quality management district 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?

Less Than Significant Impact—The project was included in San Joaquin Council of Governments 2018 Regional Transportation Plan/Sustainable Communities Strategy. Projects included in the Regional Transportation Plan/ Sustainable Communities Strategy are consistent with the planning goals of State Implementation Plans adopted by local air quality management agencies. Accordingly, the project would not exacerbate nonattainment conditions within the County or conflict with air quality plans adopted to attain and maintain the California Ambient Air Quality Standards and National Ambient Air Quality Standards. The project is not capacity increasing and therefore, emissions would be associated with construction only. This impact would be less than significant. No mitigation is required.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard?

Less Than Significant Impact—

Construction

Construction of the replacement bridge would result in the temporary release of particulate emissions (airborne dust) during earthmoving activities. Emissions from construction equipment powered by gasoline and diesel engines are also anticipated and would include ozone precursors—reactive organic gases and nitrogen oxides—carbon monoxide, suspended particulate matter, fine particulate matter, and sulfur dioxide. Construction emissions were estimated using the Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model (Version 8.1.0) based on the anticipated duration and required construction activities. Construction would occur in 2022 and would take place over two years. The emissions results are compared to the San Joaquin Valley Air Pollution Control District thresholds, as shown in Table 3.2.3-1.

**Table 3.2.3-1. Summary of Construction-Related Criteria Pollutant Emissions
(tons per year)**

Year	Reactive Organic Gas	Nitrogen Oxides	Carbon Monoxide	Suspended Particulate Matter Exhaust	Suspended Particulate Matter Dust	Total	Fine Particulate Matter Exhaust	Fine Particulate Matter Dust	Fine Particulate Matter Total ^a	Sulfur Dioxide
Year 1	0.3	3.0	2.4	0.2	7.6	7.8	0.1	1.6	1.7	0.0
Year 2	0.8	8.3	6.7	0.4	12.0	12.3	0.4	2.5	2.8	0.0
San Joaquin Valley Air Pollution Control District threshold	10	10	100	–	best management practices	15	–	best management practices	15	27

Notes:

^a Values may not add due to rounding.

As shown in Table 3.2.3-1, construction of the project would not exceed San Joaquin Valley Air Pollution Control District's thresholds, which were developed considering existing emissions concentrations and regional attainment designations under the ambient air quality standards (National Ambient Air Quality Standards and California Ambient Air Quality Standards). This impact would be less than significant.

San Joaquin Valley Air Pollution Control District's Guidance for Assessing and Mitigating Air Quality Impacts includes screening-level thresholds for construction and operational emissions to help determine when an ambient air quality analysis must be performed. An ambient air quality analysis entails the use of air dispersion modeling to determine whether increased emissions from a proposed project would cause or contribute to a violation of the California Ambient Air Quality Standards or National Ambient Air Quality Standards. The San Joaquin Valley Air Pollution Control District ambient air quality analysis screening-level threshold is 100 pounds per day of any criteria pollutant. Projects with emissions above the threshold would require dispersion modeling. It is presumed that projects with emissions below the threshold would not be in violation of the California Ambient Air Quality Standards or National Ambient Air Quality Standards.

Although the San Joaquin Valley Air Pollution Control District ambient air quality analysis screening-level thresholds are presented in pounds per day, they can be annualized and converted to tons per year for comparison to the proposed project's annual emissions. This annualization is based on an San Joaquin Valley Air Pollution Control District 100-pounds-per-day ambient air quality analysis screening-level threshold, with an assumed 250-day construction period, resulting in a calculated annual ambient air quality analysis equivalency threshold of 12.5 tons per year. As shown in Table 3.2.3-1, construction emissions would not exceed the calculated annual ambient air quality analysis equivalency threshold of 12.5 tons per year. As such, construction of the project would not contribute a significant level of

air pollution such that regional air quality would be degraded. This impact would be less than significant.

Annual nitrogen oxides emissions under the project would exceed 2.0 tons per year. Therefore, the build alternative would be subject to mitigation requirements outlined under San Joaquin Valley Air Pollution Control District Rule 9510 and identified in Chapter 2. In addition to compliance with Rule 9510, all construction projects must abide by the San Joaquin Valley Air Pollution Control District's Regulation VIII, regardless of estimated emissions levels. Caltrans' policy to reduce construction-period emissions by the greatest extent feasible also requires implementation of effective and comprehensive avoidance and minimization measures. These measures, which are identified in Chapter 2, will help reduce emissions generated during construction and ensure compliance with Rule 9510 and Regulation VIII.

Operations

Long-term air quality impacts are those associated with motor vehicles operating on the roadway network, predominantly those operating in the project vicinity. Emissions of reactive organic gases, nitrogen oxides, carbon monoxide, suspended particulate matter, fine particulate matter, and sulfur dioxide for existing year (2013), opening year (2023), and design year (2040), with and without project conditions, were evaluated through modeling using the Caltrans-EMFAC model (Version 6.0), Air Resources Board's EMFAC 2014 model, and vehicle activity data provided by the project traffic engineer.

Table 3.2.3-2 summarizes the modeled emissions by scenario and compares emissions under the build alternative to emissions under no-build and existing conditions. The differences in emissions between with- and without-project conditions represent emissions generated directly from implementing the build alternative. Vehicular emission rates are anticipated to lessen in future years due to continuing improvements in engine technology and the retirement of older, higher-emitting vehicles.

The emissions analysis presented in Table 3.2.3-2 indicates that operation of the build alternative under design year (2040) conditions would increase suspended particulate matter and fine particulate matter compared to existing conditions and would decrease reactive organic gases, nitrogen oxides, and carbon monoxide emissions. These results are primarily due to factors external to the project. The increase in particulate matter is due to background growth in vehicle miles traveled between 2013 and 2040, as particulate matter emissions are primarily a function of vehicle miles traveled. The decreases in other pollutants are due to expected improvements in vehicle engine technology, fuel efficiency, and turnover in older, more heavily polluting vehicles, which reduces exhaust emissions.

Emissions effects resulting from implementation of the build alternative under construction (2023) and design year (2040) conditions are obtained through a comparison of with-project emissions to without-project emissions. As shown in Table 3.2.3-2, implementation of the build alternative would result in decreases of all

criteria pollutant emissions compared to no-build conditions. This is an air quality benefit. This reduction is attributed to the overall decrease in vehicle miles traveled between with- and without-project conditions. Consequently, operation-generated criteria pollutant emissions would be less than significant and would not contribute a significant level of air pollution such that regional air quality would be degraded. This impact would be less than significant.

Table 3.2.3-2. Operational Criteria Pollutant Emissions (tons per year)

Scenario/Analysis Year	Reactive Organic Gases	Nitrogen Oxides	Carbon Monoxide	Suspended Particulate Matter	Fine Particulate Matter	Sulfur Dioxide
Existing year (2013)	1,246	194	746	22	11	2
Opening year (2023) No-Build Alternative	737	90	312	25	10	2
Opening year (2023) Build Alternative	731	90	310	24	10	2
Design year (2040) No-Build Alternative	694	45	313	44	18	3
Design year (2040) Build Alternative	689	44	311	44	18	3
Comparison to Existing Conditions						
Design year (2040) Build Alternative	-557	-150	-435	22	7	1
Comparison to No-Build Conditions						
Opening year (2023) Build Alternative	-6	-1	-2	<0	<0	<0
Design year (2040) Build Alternative	-5	<0	-2	<0	<0	>0
San Joaquin Valley Air Pollution Control District Thresholds	10	10	100	15	15	27

c) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact—

Typical sensitive receptors are residences, hospitals, schools, and parks. There are no hospitals or schools within 1,000 feet of the project site. Mossdale County Park is adjacent to the existing Manthey Road Bridge on the eastern bank of the San Joaquin River. Dell'Osso Family Farm (which hosts public events) is adjacent to the existing bridge on the western bank of the river. Rural residential land uses are located north of the existing bridge, approximately 200 feet from the proposed alignment. The River Islands development, just west of the project and the San Joaquin River, includes new residential and community uses.

Construction

All criteria pollutants are associated with some form of health risk (e.g., asthma, lower respiratory problems) at certain concentrations. For example, particulate matter has been linked to premature death in people with preexisting heart or lung disease and nonfatal heart attacks. Exposure to ozone at certain concentrations can make breathing more difficult, cause shortness of breath and coughing, inflame and damage the airways, aggregate lung diseases, increase the frequency of asthma

attacks, and cause chronic obstructive pulmonary disease. Exposure to carbon monoxide at high concentrations can cause fatigue, headaches, confusion, dizziness, and chest pain. While construction of the project would generate criteria pollutants, as shown in Tables 3.2.3-1, emissions are well below San Joaquin Valley Air Pollution Control District thresholds. San Joaquin Valley Air Pollution Control District's thresholds were adopted to support regional attainment of the National Ambient Air Quality Standards and California Ambient Air Quality Standards. The National Ambient Air Quality Standards and California Ambient Air Quality Standards are informed by a wide range of scientific evidence that demonstrates there are known safe concentrations of criteria pollutants. While recognizing that air quality is a cumulative problem, San Joaquin Valley Air Pollution Control District considers projects that generate criteria pollutant and ozone precursor emissions below these thresholds to be minor in nature and would not adversely affect air quality such that the National Ambient Air Quality Standards or California Ambient Air Quality Standards would be exceeded. Consequently, construction-generated criteria pollutants would be less than significant and would not expose sensitive receptors to substantial criteria pollutant concentrations.

The primary toxic air contaminant of concern associated with project construction are asbestos and diesel particulate matter. The inhalation of asbestos fibers into the lungs can result in inflammation of the lungs, respiratory ailments (e.g., asbestosis), and cancer (e.g., lung cancer and mesothelioma). Diesel particulate matter is generated by diesel-fueled equipment and vehicles and may cause acute irritation (e.g., eye, throat, and bronchial), neurophysiological symptoms (e.g., lightheadedness and nausea), respiratory symptoms (e.g., cough and phlegm), and cancer. The project site does not have any reported historic asbestos mines, historic asbestos prospects, asbestos-bearing talc deposits, fibrous amphiboles, or ultramafic rock outcrops. However, demolition of the existing bridge would be subject to Environmental Protection Agency's National Emissions Standards for Hazardous Air Pollutants and Air Resources Board's Airborne Toxic Control Measures if asbestos containing material were used in the original bridge. Diesel particulate matter generated during construction would be temporary and cease once construction (approximately 2 years) is complete. This is substantially lower than the 30-year exposure period typically associated with chronic cancer health risks.

Though not a toxic air contaminant or an air pollutant, Valley Fever is a disease caused by inhaling *Coccidioides immitis* fungus spores and the spores are found in certain types of soil and become airborne when the soil is disturbed. San Joaquin County is the 11th-most affected county by Valley Fever in the state (approximately 3 percent of hospitalizations due to Valley Fever in California in 2017 occurred in San Joaquin County). The presence of *Coccidioides immitis* in San Joaquin County does not guarantee that construction activities would result in an increased incidence of Valley Fever. Propagation of *Coccidioides immitis* is dependent on climatic conditions, with the potential for growth and surface exposure highest following early seasonal rains and long dry spells. Although *Coccidioides immitis* spores can be released when areas are disturbed by earthmoving activities, receptors must be exposed to and inhale the spores to be at increased risk of contracting Valley Fever.

Moreover, exposure to *Coccidioides immitis* does not guarantee that an individual will become ill—approximately 60 percent of people exposed to the fungal spores are asymptomatic and show no signs of an infection.

While a number of factors influence receptor exposure and development of Valley Fever, earthmoving activities during construction could release *Coccidioides immitis* spores if filaments are present and other soil chemistry and climatic conditions are conducive to spore development. Receptors within several miles of the construction area therefore may be exposed to an increased risk of inhaling *Coccidioides immitis* spores and subsequent development of Valley Fever. Dust control measures are the primary defense against infection. Implementation of the fugitive dust control plan as required by San Joaquin Valley Air Pollution Control District Regulation VIII and outlined in Chapter 2 would avoid dusty conditions, and routine watering would reduce the risk of contracting Valley Fever. This would ensure less than significant impacts related to Valley Fever.

Operations

During operations, traffic congestion can contribute to high levels of carbon monoxide, and individuals exposed to such hot spots may have a greater likelihood of developing adverse health effects. The San Joaquin Valley Air Pollution Control District Guidance for Assessing and Mitigating Air Quality Impacts outlines preliminary screening criteria that provide a conservative indication of whether a project will cause a potential carbon monoxide hot-spot. The guidelines establish that, if neither of the following criteria is met, a quantitative analysis of project-related carbon monoxide concentrations would not be necessary and the project would not contribute to or worsen existing violations of the California Ambient Air Quality Standards for carbon monoxide.

- Level of service on one or more streets or at one or more intersections in the project vicinity will be reduced to level of service E or F; or
- The project will substantially worsen an already existing level of service F on one or more streets or at one more or more intersections in the project vicinity.

All intersections in the project area would operate at level of service B or better under opening year (2023) and design year (2040) conditions with implementation of the build alternative. The project therefore does not meet either screening criterion listed above and is not expected to cause or contribute to new or worsened violations of the California Ambient Air Quality Standards for carbon monoxide. This impact would be less than significant.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less Than Significant Impact—Minor sources of odors would be present during construction of the proposed project. Diesel engines are the predominant source of power for construction equipment. Exhaust odors from diesel engines, as well as emissions associated with asphalt paving, may be considered offensive to some

individuals. However, because odors would be temporary and would disperse rapidly with distance from the source, construction-generated odors are not anticipated to result in the adverse exposure of receptors to objectionable odorous emissions. Long-term operation of the project may reduce ambient odors due to reductions in overall vehicle miles travelled, relative to no build conditions. This impact would be less than significant.

3.2.4 Biological Resources

CEQA Significance Determinations for Biological Resources

Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service?

Less Than Significant With Mitigation Incorporated—

Plants

Habitats in the biological study area are disturbed due to agriculture, development, and levee construction and therefore have low potential to support any special-status plant species. Botanical surveys were conducted within the biological study area in April, May, and November 2014. However, because of the high level of disturbance in the riparian habitat from riprap, trampling, and trash, as well as the lack of observations of special-status plants during the blooming-period surveys, special-status plants are assumed to be absent from the biological study area and there would be no impact.

Wildlife

The proposed project would result in temporary and permanent impacts on several natural communities that provide habitat for special status wildlife species.

Riparian Brush Rabbit

Riparian habitat that could support riparian brush rabbit is present in the project area. However, the habitat is poor quality, and it is unknown whether riparian brush rabbit is present. It is likely that at most the riparian habitat would be used for dispersal. Disturbance to riparian brush rabbits during construction, if they occur nearby, would take place over approximately 2 years. This disturbance would include visual disturbance from construction personnel and equipment and noise from construction equipment and pile driving. This activity could disrupt normal behavior, including foraging, dispersal, and breeding. Construction would permanently reduce the amount of suitable dispersal habitat by 0.07 acre, temporarily disturb 0.08 acre, and create a potential barrier to brush rabbit dispersal along the San Joaquin River, due to the presence of the new bridge and increased

noise and activity along the river. With implementation of the measures below discussed in Section 2.3.4, this impact would be less than significant.

- Install Orange Construction Fencing between the Construction Area and Adjacent Sensitive Biological Resources
- Conduct Environmental Awareness Training for Construction Employees
- Conduct Biological Monitoring
- Avoid and Minimize Impacts on Riparian Brush Rabbit

Western Pond Turtle

Implementation of the Build Alternative would require some temporary in-channel work that could result in injury and mortality to pond turtles. Construction activities also could temporarily discourage pond turtles from foraging and basking near the project site, affecting western pond turtle behavior. Construction activities would affect upland areas that could be used by turtles for nesting (riverbanks and adjacent ruderal grasslands). The proposed project would result in the permanent loss of 3.38 acres and the temporary disturbance of 6.74 acres of habitat. With implementation of the following measures discussed in Section 2.3.3, impacts on western pond turtle would be less than significant.

- Install Orange Construction Fencing between the Construction Area and Adjacent Sensitive Biological Resources
- Conduct Environmental Awareness Training for Construction Employees
- Conduct Biological Monitoring
- Conduct Preconstruction Surveys for Western Pond Turtle and Monitor Initial In-Water Work

Western Burrowing Owl

Construction could result in injury or mortality of eggs, juveniles or adults if they are present in the work area during ground-disturbing activities. Construction activities also could disrupt burrowing owl behavior, including nesting activity, if the owls are occupying nearby habitats. The proposed project would result in the permanent losses of 4.92 acres and the temporary disturbance of 9.17 acres of suitable foraging and nesting habitat for burrowing owl. With implementation of the following measures discussed in Section 2.3.3, impacts on western burrowing owl would be less than significant.

- Install Orange Construction Fencing between the Construction Area and Adjacent Sensitive Biological Resources
- Conduct Environmental Awareness Training for Construction Employees
- Conduct Biological Monitoring
- Conduct Surveys for Western Burrowing Owl and Implement Protective Measures if Found

Northern Harrier

Construction activities could result in the disturbance or loss of a northern harrier nest, if a nest is present in or near the construction area. These activities could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. The presence of construction crews and equipment and the noise from pile driving could disrupt normal behaviors, including nesting. The Build Alternative would result in the permanent loss of 4.92 acres and the temporary disturbance of 9.17 acres of suitable foraging and nesting habitat for northern harrier. With implementation of the following measures discussed in Section 2.3.3, impacts on northern harrier would be less than significant.

- Install Orange Construction Fencing between the Construction Area and Adjacent Sensitive Biological Resources
- Conduct Environmental Awareness Training for Construction Employees
- Conduct Biological Monitoring
- Conduct Vegetation Removal during the Non-Breeding Season and Conduct Preconstruction Surveys for Nesting Migratory Birds, Including Special-Status Birds

White-Tailed Kite

Construction activities could result in the disturbance or loss of a white-tailed kite nest, if a nest is present in or near the construction area. These activities could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. The presence of construction crews and equipment and the noise from pile driving could disrupt normal behaviors, including nesting. The Build Alternative would result in the permanent loss of 4.92 acres and the temporary disturbance of 9.17 acres of suitable foraging habitat. The Build Alternative would also result in the permanent loss of 0.07 acre and temporary loss of 0.08 acre of riparian woodland that provides suitable nesting habitat for white-tailed kite. With the implementation of the following measures discussed in Section 2.3.3, impacts on white-tailed kite would be less than significant.

- Install Orange Construction Fencing between the Construction Area and Adjacent Sensitive Biological Resources
- Conduct Environmental Awareness Training for Construction Employees
- Conduct Biological Monitoring
- Conduct Vegetation Removal during the Non-Breeding Season and Conduct Preconstruction Surveys for Nesting Migratory Birds, Including Special-Status Birds

Yellow-Breasted Chat, Modesto Song Sparrow, Yellow Warbler, Loggerhead Shrike and Other Migratory Birds

Construction activities could result in disturbance or loss of yellow-breasted chat, Modesto song sparrow, yellow warbler, and loggerhead shrike nests, if nests are present in or near the construction area. These activities could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. The presence of construction crews and equipment and the noise from pile driving could disrupt normal behaviors, including nesting. The Build Alternative would result in the permanent loss of 0.07 acre and the temporary loss of 0.08 acre of riparian woodland that provides suitable nesting habitat for yellow-breasted chat, Modesto song sparrow, yellow warbler, loggerhead shrike, and other migratory birds. With implementation of the following measures discussed in Section 2.3.3, impacts on these bird species would be less than significant.

- Install Orange Construction Fencing between the Construction Area and Adjacent Sensitive Biological Resources
- Conduct Environmental Awareness Training for Construction Employees
- Conduct Biological Monitoring
- Conduct Vegetation Removal during the Non-Breeding Season and Conduct Preconstruction Surveys for Nesting Migratory Birds, Including Special-Status Birds

Swainson's Hawk

Construction activities could result in the disturbance or loss of a Swainson's hawk nest, if a nest is present in or near the construction area. These activities could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. The presence of construction crews and equipment and the noise from pile driving could disrupt normal behaviors, including nesting. The Build Alternative would result in the permanent loss of 4.92 acres and the temporary disturbance of 9.17 acres of suitable foraging habitat. The Build Alternative would also result in the permanent loss of 0.07 acre and the temporary loss of 0.08 acre of riparian woodland that provides suitable nesting habitat for Swainson's hawk. With the implementation of the following measures discussed in Sections 2.3.4, impacts on white-tailed kite would be less than significant.

- Install Orange Construction Fencing between the Construction Area and Adjacent Sensitive Biological Resources
- Conduct Environmental Awareness Training for Construction Employees
- Conduct Biological Monitoring
- Conduct Focused Surveys for Nesting Swainson's Hawk prior to Construction and Conduct Tree Removal during the Non-Breeding Season

Special-Status Bats

Bridge removal, tree removal and trimming, construction noise and vibrations, and other construction activities could result in direct effects on roosting bats, including the destruction of active roosts and the loss of individual, or roost failures. With implementation of the following measures discussed in Section 2.3.3, impacts on these special-status bats would be less than significant.

- Install Orange Construction Fencing between the Construction Area and Adjacent Sensitive Biological Resources
- Conduct Environmental Awareness Training for Construction Employees
- Conduct Biological Monitoring
- Conduct Preconstruction Surveys for Roosting Bats and Implement Protective Measures, if Necessary

Fish

Implementation of the project could result in impacts on fish species present in the San Joaquin river: white sturgeon, Central Valley fall- and late-fall-run Chinook salmon evolutionarily significant unit, river lamprey, Pacific lamprey, Sacramento splittail, southern distinct population segment North American green sturgeon, California Central Valley steelhead distinct population segment, Central Valley spring-run Chinook salmon evolutionarily significant unit, delta smelt, and longfin smelt. Short-term effects include temporary construction-related impacts on fish and aquatic habitat that may last from a few hours to days (e.g., suspended sediment and turbidity, pile driving and general construction noise, construction lighting). Long-term effects (addition of overwater structure, loss of aquatic habitat [substrate and water column], loss of Shaded Riverine Aquatic cover habitat, artificial bridge lighting) typically would last months or years or would be permanent. These effects are generally due to physical alteration of important habitat attributes of the water column, channel, shoreline, and adjacent bank. These impacts would be significant. Implementation of the following measures discussed in Section 2.3.3 would reduce the severity of these impacts.

- Conduct Environmental Awareness Training for Construction Employees
- Conduct Biological Monitoring
- Protect Water Quality and Prevent Erosion and Sedimentation in Drainages and Wetlands
- Conduct all In-Water Construction Activities between June 1 and October 31, and only during Daylight Hours
- Implement Measures to Minimize Exceedance of Interim Threshold Sound Levels during Pile Driving
- Develop and Implement a Hydroacoustic Monitoring Plan
- Monitor Turbidity in the San Joaquin River

- Implement Cofferdam Restrictions
- Prepare and Implement a Fish Rescue and Relocation Plan
- Minimize or Avoid Temporary Construction Lighting and Permanent Bridge Lighting from Directly Radiating on Water Surfaces of the San Joaquin River
- Prevent the Spread or Introduction of Aquatic Invasive Species

Purchase of compensatory mitigation in the form of channel enhancement credits at a National Marine Fisheries Service-approved anadromous fish and United States Fish and Wildlife Service-approved delta smelt conservation bank would mitigate for significant impacts on critical habitat. Therefore, this impact would be less than significant with mitigation incorporated.

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 United States Fish and Wildlife Service?

Less Than Significant With Mitigation Incorporated—Implementation of the project would require trimming and removing of riparian habitat during removal of the existing bridge structure and during construction of the new bridge, temporary access roads, and roadway approaches. This would result in permanent impacts on up to 0.07 acre of riparian woodland and 0.07 acre of riparian scrub. Temporary disturbance of an additional 0.08 acre of riparian woodland and 0.09 acre of riparian scrub would occur during construction for equipment access.

Because the loss of or disturbance of riparian forest vegetation. State and federal regulations would require avoidance, minimization, and compensatory mitigation for the loss of riparian habitat.

Riparian forest vegetation provides a variety of important ecological functions and values, the loss or disturbance of which would be a significant impact and California Department of Fish and Wildlife will require a Lake and Streambed Alteration Agreement for construction within the riparian habitat.

Riparian Woodland Permanent (acres)	Riparian Woodland Temporary (acres)	Riparian Scrub Permanent (acres)	Riparian Scrub Temporary (acres)
0.07	0.08	0.07	0.09

This would be a significant impact. Implementation of the measures below, and as described in Section 2.3.1, *Natural Communities*, would reduce the severity of this impact.

- Install Orange Construction Fencing between the Construction Area and Adjacent Sensitive Biological Resources
- Conduct Environmental Awareness Training for Construction Employees

- Conduct Biological Monitoring

Purchase of compensatory mitigation for temporary and permanent loss of riparian woodland and riparian scrub (including Shaded Riverine Aquatic cover) from an approved mitigation bank would mitigate for significant impacts on this sensitive natural community. Therefore, this impact would be less than significant with mitigation incorporated.

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less Than Significant—Implementation of the project would result in temporary and permanent impacts on the San Joaquin River, a tidal perennial drainage. Proposed project elements that would cause these impacts include removal of the existing bridge structure; construction of bridge abutments; and installation of temporary cofferdams or steel casings, temporary trestles or spud piles, scour protection, and cast-in-steel shell piles or cast-in-drilled-hole piles for bridge piers. The project would not result in additional permanent fill (0.005 acre) in the San Joaquin River; however, the permanent losses associated with the new permanent bridge piers would be offset by increases in river bottom area from the removal of the piers associated with the existing bridge for a net gain of 0.04 acre of riverbed area.

Temporary impacts of 0.18 acre would occur due to use of cofferdams and temporary trestles.

The seasonal emergent wetland is located outside of the temporary impact area and would not be directly affected by construction of the project.

Because seasonal emergent wetlands and the San Joaquin River are waters of the United States and waters of the state and are regulated by United States Army Corps of Engineers, their loss is considered potentially significant. However, with implementation of the Storm Water Pollution Prevention Plan and best management practices described in Section 2.3.2, *Wetlands and Other Waters*, impacts on wetlands and drainages would be reduced to a less-than-significant level.

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?

Less Than Significant Impact—Construction of the project would result in temporary impacts on the migration and movement of fish in the San Joaquin River. Project construction has been staged and designed to accommodate fish movement, leaving an open channel at all times. When the bridge replacement is complete, there would be no impact on fish movement. The proposed project is not anticipated to have a significant impact on migratory corridors, as none are present. Additionally,

I-5 and the railroad already provide barriers to wildlife movement. No mitigation would be necessary.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact—The City of Lathrop does not have a tree preservation policy or ordinance. However, there are policies addressing preserving street trees and trees within public rights of way and encouraging the planting of trees. The project would include landscaping in accordance with these policies. Fish and wildlife policies in the Resources Management Element of the General Plan encourage the retention and enhancement of habitat and require analysis of the impacts of projects on habitat. The project complies with these policies and therefore there is no impact.

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?

No Impact—The project is within the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. The City has also adopted a Habitat Conservation Plan for the Swainson's Hawk. The project however would not interfere with either plan and would comply with all requirements. There would be no impact.

3.2.5 Cultural Resources

CEQA Significance Determinations for Cultural Resources

Would the project:

a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

No Impact—Though there are three historical resources within the area of potential effect, the project would not result in impacts on any of these resources, either directly or indirectly.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Less Than Significant With Mitigation Incorporated—Several areas within the area of direct impact are considered sensitive for buried resources, based on the results of Extended Phase 1 excavations. To minimize the potential for impacts resulting from ground disturbance, monitoring will be required in sensitive areas guided by a Post Review Discovery and Monitoring Plan that has been prepared for the project.

Additionally, even outside of sensitive areas, there is always the potential that buried cultural resources may be encountered during construction. Caltrans standard procedures to stop work in case of accidental discovery, described in Section 2.1.10, would ensure that these potential impacts would not be significant.

c) Disturb any human remains, including those interred outside of dedicated cemeteries?

Less Than Significant Impact—Several areas within the area of direct impact are considered sensitive for buried resources, including human remains, based on the results of Extended Phase 1 excavations. To minimize the potential for impacts resulting from ground disturbance, monitoring will be required in sensitive areas guided by a Post Review Discovery and Monitoring Plan that will be prepared for the project.

Additionally, even outside of sensitive areas, there is always the potential that buried human remains may be encountered during construction. Caltrans standard procedures to stop work in case of accidental discovery, described in Section 2.1.10, would ensure that these potential impacts would not be significant.

3.2.6 Energy

CEQA Significance Determinations for Energy

Would the project:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less Than Significant Impact—During construction, the project would use a variety of construction equipment, including excavators, trucks, bulldozers, front loaders, compactors, and pile drivers. The majority of energy consumption would occur during construction of the project.

Implementation of the project would result in transportation efficiencies and an overall decrease in vehicle miles traveled. As a result, there would be no increase in energy consumption during project operation.

The project's use of energy during construction and operations would be necessary to provide for improved transportation and would not be wasteful or inefficient.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact—The project does not obstruct state or local plans for renewable energy or energy efficiency. There would be no impact.

3.2.7 Geology and Soils

CEQA Significance Determinations for Geology and Soils

Would the project:

a) Directly or indirectly cause 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?

Less Than Significant Impact—The nearest fault is located approximately 11.7 miles west of the project site. Therefore, impacts related to rupture of a known fault would be less than significant.

ii) Strong seismic ground shaking?

Less Than Significant Impact—The project area has low potential for seismic ground shaking. Additionally, a geotechnical field investigation will be conducted, and the project designed according to Caltrans seismic standards. Therefore, this impact would be less than significant.

iii) Seismic-related ground failure, including liquefaction?

Less Than Significant Impact—The project area has low potential for seismic-related ground failure. Additionally, a geotechnical field investigation will be conducted, and the project designed according to Caltrans seismic standards. Therefore, this impact would be less than significant.

iv) Landslides?

No Impact—The risk of landslides in the project area is very low because of the gentle slope of the topography. There is no impact related to landslides.

b) Result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact—Ground disturbing earthwork associated with project construction could result in erosion and the loss of topsoil. With the implementation of standard best management practices and measures required under water quality permits, the impact would be less than significant.

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?

Less Than Significant Impact—The project location has a low potential for seismic-related ground failure because of the low potential for strong ground shaking and the gently sloping topography. However, further subsurface exploration and laboratory testing will be conducted to assess the stability of soils in significant cuts and fills, as described in the geotechnical report. Project design would address any stability issues. This impact would be less than significant.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

No Impact—According to the San Joaquin County soil survey report, the project is not within an area mapped as having expansive soils. There would be no impact (United States Department of Agriculture Natural Resources Conservation Service 2019).

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No Impact—The project is a bridge replacement project and would not include the use of septic tanks or require any waste water disposal. Therefore, there would be no impact.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant Impact—The project area has a low potential to yield unique paleontological or geological resources. Implementation of Caltrans standard specifications to stop work in case of accidental discovery would ensure this impact would be less than significant.

3.2.8 Greenhouse Gas Emissions

CEQA Significance Determinations for Greenhouse Gas Emissions

Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

and

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

Less Than Significant Impact—A discussion of regulations related to greenhouse gas emissions is provided in the Air Quality Study Report.

Construction activities would generate short-term emissions of carbon dioxide, methane, and nitrous oxide from the use of equipment (e.g., graders) and on-road vehicles (e.g., employee commuter cars). Greenhouse gas emissions generated by construction activities were estimated using Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model (Version 8.1.0). Table 3.2.8-1 summarizes estimated greenhouse gas emissions from construction.

**Table 3.2.8-1 Summary of Construction Greenhouse Gas Emissions
(metric tons per year)**

Year	Carbon Dioxide	Methane	Nitrous Oxide	Carbon Dioxide Equivalent
Year 1	683	<1	<1	689
Year 2	1,572	<1	<1	1,588
Total	2,256	1	<1	2,277

As shown in Table 3.8-1, construction of the build alternative would generate approximately 2,277 metric tons carbon dioxide equivalent, respectively, which is equivalent to the annual greenhouse gas emissions generated by approximately 483 passenger vehicles. This impact would be less than significant. No mitigation is required.

Operational emissions for existing (2013), opening (2023), and design (2040) year conditions were modeled using Caltrans' EMFAC model and traffic data provided by Fehr & Peers. As shown in Table 3.8-2, project implementation would increase greenhouse gas emissions compared to the existing conditions. However, compared to the No Build Alternative, the build alternative would slightly decrease greenhouse gas emissions under opening (2023) year conditions and slightly increase greenhouse gas emissions under design (2040) year conditions. This is a greenhouse gas emissions benefit. The emissions results mirror the decrease in vehicle miles travelled as shown in Table 3.8-2, where the build alternative vehicle miles traveled in 2023 and 2040 would reduce vehicle miles traveled from their respective no-build conditions.

**Table 4-7. Summary of Operational Greenhouse Gase Emissions
(metric tons per year)**

Scenario/Analysis Year	Carbon Dioxide Equivalent	Annual Vehicle Miles Traveled ¹
Existing year (2013)	143,097	344,627,908
Opening year (2023)		
No-Build Alternative	152,268	412,305,400
Build Alternative	151,225	409,078,994
Design year (2040)		
No Build Alternative	186,248	824,612,535
Build Alternative	185,045	818,359,942

Sources: CT-EMFAC2014; Fehr & Peers 2014 (See Air Quality Technical Report).

While EMFAC has a rigorous scientific foundation and has been vetted through multiple stakeholder reviews, its emission rates are based on tailpipe emission test data. The numbers are estimates of carbon dioxide emissions and not necessarily the actual carbon dioxide emissions. The model does not account for factors such as the rate of acceleration and the vehicles' aerodynamics, which would influence carbon dioxide emissions. To account for carbon dioxide emissions, California Air Resources Board's greenhouse gas Inventory follows the Intergovernmental Panel on Climate Change guideline by assuming complete fuel combustion, while still using EMFAC data to calculate methane and nitrous oxide emissions. Though EMFAC is currently the best available tool for use in calculating greenhouse gas emissions, it is important to note that the carbon dioxide numbers provided are only useful for a comparison of alternatives.

The State CEQA Guidelines do not indicate what amount of greenhouse gas emissions would constitute a significant impact on the environment. Instead, they authorize the lead agency to consider thresholds of significance previously adopted or recommended by other public agencies or by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence (State CEQA Guidelines 15064.4(a) and 15064.7(c)). The California Supreme Court decision¹ in the *Centers for Biological Diversity et al. vs. California Department of Fish and Wildlife, the Newhall Land and Farming Company* (November 30, 2015, Case Number S217763) (hereafter Newhall Ranch) confirmed that there are multiple potential pathways for evaluating project-level greenhouse gas emissions consistent with CEQA, depending on the circumstances of a given project. These potential

¹ It should be noted that the defendants in the Newhall Ranch case have requested a rehearing from the California Supreme Court on a number of grounds. If the Supreme Court decides to rehear the case, it is possible that the ruling may change.

pathways include reliance on business-as-usual model², numeric thresholds, and compliance with regulatory programs.

Use of a business-as-usual threshold is most applicable to land use development projects with emission sources covered by the Assembly Bill 32 scoping plan. There are currently no drafted, adopted, or recommended numeric thresholds relevant to the analysis of greenhouse gas emissions from transportation projects by the City, County, or San Joaquin Valley Air Pollution Control District. The impact determination considers compliance with regulatory programs, as referenced in the Newhall Ranch decision. The greenhouse gas regulation most applicable to transportation projects is Senate Bill 75. Senate Bill 375 was enacted to reduce greenhouse gas emissions from automobiles and light trucks through integrated transportation, land use, housing and environmental planning. Under this law, San Joaquin Council of Governments is tasked with developing a Sustainable Communities Strategy that provides a plan for meeting per capita carbon dioxide emissions levels allocated to San Joaquin Council of Governments by California Air Resources Board. These levels are 12% below 2005 emissions levels by 2020 and 16% below 2005 levels by 2035. Accordingly, the targets established by Senate Bill 375 not only address near-term (2020) emissions, but also long-term (2035) emissions consistent with statewide Executive Orders³, judicial attention⁴, and recommendations made by the Association of Environmental Professionals Climate Change Committee.⁵

As shown in Table 3.8-2, operational emissions would decrease relative to the No Build Alternative under opening year (2023) and design year (2040) conditions. This is a greenhouse gas benefit. The project would also be consistent with the following strategies indicated in the 2018 Regional Transportation Plan/ Sustainable Communities Strategy.

Strategy 4: Improve regional transportation system efficiency

Strategy 7: Provide transportation improvements to facilitate non-motorized travel

² Only if “an examination of the data behind the Scoping Plan’s business-as-usual model allowed the lead agency to determine what level of reduction from business as usual a new land use development at the proposed location must contribute in order to comply with statewide goals.”

³ Executive Order B-30-15 has set forth an interim reduction target to reduce greenhouse gas emissions by 40 percent below 1990 levels by 2030 and Executive Order S-03-05 has set forth an interim reduction target to reduce greenhouse gas emissions by 80 percent below 1990 levels by 2050.

⁴ See the California Appellate Court, 4th District 2014 rulings in the *Cleveland National Forest Foundation et al. v. SANDAG* and *Sierra Club vs. County of San Diego* cases.

⁵ The Association of Environmental Professional’s *Beyond 2020: The Challenge of Greenhouse Gas Reduction Planning by Local Governments in California* white paper states that long-term projects should consider “post-2020 emissions consistent with ‘substantial progress’ along a post-2020 reduction trajectory toward meeting the 2050 target.”

Strategy 9: Facilitate projects that reduce the number of and severity of traffic incidents.

Strategy 10: Encourage and support projects that increase safety and security

The project is listed in the 2018 Regional Transportation Plan/ Sustainable Communities Strategy and its design concept and scope are consistent with the project description in the Regional Transportation Plan/ Sustainable Communities Strategy. The Final Environmental Impact Report for the 2018 Regional Transportation Plan/ Sustainable Communities Strategy demonstrates that projects identified in the Regional Transportation Plan/ Sustainable Communities Strategy meet California Air Resources Board's issued Senate Bill 375 greenhouse gas targets for the San Joaquin Council of Governments region in 2020 and 2035. Greenhouse gas emissions associated with the Regional Transportation Plan/ Sustainable Communities Strategy, including those projects identified in the Regional Transportation Plan/ Sustainable Communities Strategy, would therefore be less than significant. Accordingly, the proposed project's project-level greenhouse gas emissions would be consistent with Senate Bill 375. This impact is considered less than significant. No mitigation is required.

3.2.9 Hazards and Hazardous Materials

CEQA Significance Determinations for 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?

Less Than Significant Impact—Construction of the proposed project would involve the transportation, storage, and use of small quantities of common materials, such as fuels and oils to operate construction equipment. Accidental releases of small quantities of these substances could contaminate soils and degrade the quality of surface water and groundwater, or be released into the air, resulting in a potential public safety hazard. However, consistent with applicable laws and regulations, the transportation, handling, and disposal of these materials would be compliant with regulations enforced by Certified Unified Program Agencies and California Division of Occupational Safety and Health. In addition, the implementation of standard best management practices under the Storm Water Pollution Prevention Plan would further reduce the potential of accidental release or exposure. This impact would be less than significant. No mitigation is required.

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?

Less Than Significant Impact—Construction of the project could expose construction workers and the environment to hazardous materials. The project area

generally has the potential for hazardous materials in the form of aerially deposited lead along Manthey Road within the project area; lead or chromium in yellow pavement striping; asbestos-containing materials in various bridge components; lead-based paint in utility openings or on steel structures; and pesticide-contaminated soil that could be encountered or released during construction unless measures are taken to avoid that release.

Construction workers could be exposed to hazardous materials during ground-disturbing activities such as grading, demolition/replacement of structures, and/or roadbed resurfacing at any of the areas known to contain hazardous substances.

These impacts are considered potentially significant. However, with implementation of the avoidance and minimization measures described in Section 2.2.4, *Hazardous Waste and Materials: Develop and Implement Plans to Address Worker Health and Safety, Appropriately Dispose of Soils Contaminated with aerially deposited lead, Conduct Visual Inspection and Testing of Contaminated Soils, Conduct Sampling, Testing, Removal, Storage, Transportation, and Disposal of Yellow Traffic Striping along Existing Roadways, Conduct Asbestos and Lead Surveys of Structures*, the impacts on human health would be reduced to a less-than-significant level.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Less Than Significant Impact—The nearest school the project area is the Mossdale Elementary School, which is located approximately 0.15 miles west of the northernmost end of the project area. Accidental release of hazardous materials during construction near a school would be a significant impact. However, as disclosed above, there is a low potential for construction or operation of the project to cause a significant hazard through transport, use, or disposal of hazardous materials because these activities would be required to comply with the regulations, standards, requirements, and guidelines established by federal and state law and overseen by the regulatory agencies. Accordingly, the potential for hazardous materials releases near an existing or proposed school are low. This impact would be less than significant.

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?

No Impact—A preliminary records check was conducted of the Department of Toxic Substances Control EnviroStor website and the California Regional Water Quality Control Boards GeoTracker website. There are no listed hazardous materials sites within or immediately adjacent to the project area. There would be no impact.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the

project result in a safety hazard or excessive noise for people residing or working in the project area?

No Impact—The nearest airport to the project area is the Stockton Metropolitan Airport, which is located more than 5 miles away. Therefore, there is no potential for the project to result in impacts related to airports.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact—The project would not interfere with an adopted emergency response plan or emergency evacuation plan. As discussed under *Transportation* in Chapter 2.1, a project-specific Traffic Management Plan, would be developed and implemented before and during construction. The Traffic Management Plan would follow Caltrans' Transportation Management Plan Guidelines and would include public information announcements, signage, and construction scheduling coordination. The existing Manthey Road and Manthey Road Bridge would remain in operation during construction of the new bridge and the approach roadways. There would be no impact on emergency services or evacuation plans.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

No Impact—The project site is primarily located adjacent to urbanized areas at low risk for wildland fires. Undeveloped areas in the project area are mostly agricultural lands that are not considered high for wildland fire risk. Construction and operation of the proposed project would not create a greater wildland fire risk. During construction, the use and staging of equipment would follow standard construction safety protocols to prevent fire or sparks that could cause fire. There would be no impact. No mitigation is required.

3.2.10 Hydrology and Water Quality

CEQA Significance Determinations for Hydrology and Water Quality

Would the project:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less Than Significant Impact—The project would have the potential to violate water quality standards or discharge requirements from Pile and Cofferdam installation, dewatering, grading and excavation, fueling and maintenance of construction equipment and increase in impervious area. As discussed in Chapter 2 and identified in Table 2.2.2-2 Water Quality Associated Permits Needed for the Project the project would need to acquire and comply with six individual water quality permits as well as Central Valley Regional Water Quality Control Board's *Waste Discharge Requirements General Order for Dewatering and Other Low Threat*

Discharges to Surface Waters, the City's Phase II Municipal Separate Storm Sewer System permit, and the Construction General Permit. Implementing the required design and construction best management practices for these permits would protect water quality. Therefore, the impacts would be less than significant. No mitigation is required.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

No Impact—The project does not include the development of new sources of water nor does it include large excavations into the water table. As discussed in Chapter 2, the project would not interfere with the existing beneficial uses of water at the project site as identified in the Central Valley Regional Water Quality Control Board's Basin Plan. The limited increase in impervious surface when compared to the overall San Joaquin River Watershed would not interfere with groundwater recharge. Therefore, the project would have no impact. No mitigation is required.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i) Result in substantial erosion or siltation on- or off-site;

No Impact—The project includes a disturbed soil area of 29.94 acres, potentially resulting in the temporary transport of soil and impacts to water quality. In addition, the project would result in an increase in impervious area that can result in increased peak flow volumes, rates, and durations which can cause increased bed and bank erosion and increased sediment transport and deposition. Planned landscaping and re-seeding exposed slopes would provide permanent erosion control. The project would be required to prepare a Storm Water Pollution Prevention Plan to obtain coverage under the Construction General Permit. This would require the implementation of stormwater controls to reduce or eliminate erosion on or off site. The project would be designed to comply with the City's Phase II Municipal Separate Storm Sewer System permit, which would require implementation of best management practices to reduce or eliminate erosion or siltation on or off site. The goal of the project's drainage design is to maintain existing drainage patterns. The project would convey stormwater into the San Joaquin River via piped drainage systems that may otherwise have been allowed to infiltrate into the groundwater table. Therefore, there would be no effect to drainage patterns resulting from operation of the Project. The added impervious surface area would be small, as compared to the overall watershed area, and drainage patterns would be similar to existing conditions. With implementation of stormwater best management practices, including erosion control best management practices and permanent erosion control, there would be no impact. No mitigation would be required.

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;

No Impact—The project would result in the addition of 6.0 acres of impervious area to the watershed. An increase in impervious area can result in increased peak flow volumes, rates, and durations. These hydromodification impacts can cause increased and flooding. The project would be required to comply with the City's Phase II Municipal Separate Storm Sewer System permit as a Hydromodification Management Project and would be designed to not increase the post-construction stormwater flow rates beyond that of preconstruction. Implementation of these measures would result in the project having no impact to on or offsite flooding. No mitigation would be required.

iii) 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; or

No Impact—The project would be required to comply with the City's Phase II Municipal Separate Storm Sewer System permit as a Hydromodification Management Project and would be designed to not increase the post-construction stormwater flow rates beyond that of preconstruction. Due to the San Joaquin River being tidally influenced at the project location, hydromodification effects resulting from construction of the project, such as channel incision and bank erosion, are unlikely. Although the City's Phase II Municipal Separate Storm Sewer System permit triggers implementation of hydromodification management controls, actual project requirements would be coordinated between design staff and the City's stormwater coordinator during the Plans, Specifications, and Estimates phase. Implementation of hydromodification management measures would result in the project having no impact to on- or off-site flooding. No mitigation would be required.

iv) Impede or redirect flood flows?

Less Than Significant Impact —Construction of the project would increase the 100- and 200-year water surface elevations by 0.1 feet or less in the project vicinity. However, in the project vicinity the San Joaquin River is not classified as a floodway, therefore a 0.1 foot or less elevation increase would be acceptable, and there would be no risk associated with the change in the water surface elevation. Temporary structures would also increase the 100- and 200-year water surface elevation by 0.2 feet or less. However, the project design would maintain the existing locations of bridge piers, and impedance or redirection of flood flows would be similar to existing conditions. Stormwater would be conveyed into the San Joaquin River via piped drainage systems. Therefore, surface flows would not be impeded or redirected. This would represent a less than significant impact. No mitigation would be required.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Less Than Significant Impact—The project is not in a tsunami or seiche zone. The project is, however, within the 100-year floodplain. The removal of the existing Manthey Road Bridge would result in a net gain of 0.04 acre of riverbed and the construction of the approach and new bridge would result in an increase of 6 acres of impervious surfaces. Water runoff would be conveyed to the San Joaquin River via piped drainage systems, and potential for flooding would be no greater than existing conditions. The project would also comply with local design requirements and the County's General Plan flood policies to minimize flood risks and, therefore, this impact would be less than significant.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

No Impact—The project would be required to comply with the City's Phase II Municipal Separate Storm Sewer System permit and associated design standards and would not obstruct the implementation of a water quality control plan or sustainable groundwater management plan.

3.2.11 Land Use and Planning

CEQA Significance Determinations for Land Use and Planning

Would the project:

a) Physically divide an established community?

No Impact—The project would result in the construction of a planned roadway alignment and bridge. The Mossdale and River Islands developments and the rural residences on Manthey Road could be considered established communities. The project would not divide any of these existing communities and would improve connections between the communities. Therefore, there would be no impact.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact—The proposed project is included in and consistent with all planning documents in the area. Therefore, there would be no impact.

3.2.12 Mineral Resources

CEQA Significance Determinations for 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?

Less Than Significant Impact—While there are designated mineral resource areas (mineral resource zone-2 and mineral resource zone-3) in the project area, the project entails replacement of an existing bridge and only affects land zoned for development. Therefore, it would not impede the extraction of any known mineral resources and this impact would be less than significant.

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?

No Impact—The proposed project is located in an area zoned for residential and commercial land uses in the City's general plan and applicable specific plans. Therefore, there would be no impact.

3.2.13 Noise

CEQA Significance Determinations for Noise

Would the project result in:

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant Impact—The City of Lathrop in Chapter 8.20 of the City code indicates policy governing noise levels from sources “subject to its police power.” The City does not have a standard related to a substantial increase in noise levels related to operation of motor vehicles. As such, the Caltrans substantial increase standard of 12 decibels above existing levels is applicable to determine significance of permanent traffic noise impacts under CEQA.

The traffic noise modeling documented in the Noise Study Report indicates that traffic noise levels would increase relative to existing conditions by up to 6 decibels under the build alternative. This value does not exceed the threshold for a substantial increase in noise levels as defined by the Department (i.e., 12 decibels above existing levels).

The temporary increase in ambient noise levels from construction would be intermittent and cease once work is complete. As stated in Section 8.20.110 of the City code, the City does not allow operation of construction equipment within 500 feet of residential zones between the hours of 10 p.m. and 7 a.m. on weekdays without a city permit to operate equipment during these hours. Construction would be required to comply with Caltrans Standard Specifications for noise control. Best practices for noise control included in Caltrans Standard Specifications, which include compliance with local standards, would be followed.

Therefore, this impact would be less than significant, and no mitigation is required.

b) Generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact—Operation of construction equipment may result in perceptible levels of ground-borne vibration in the immediate vicinity of residential properties, especially in the Sadler Oak subdivision during construction. Heavy equipment that may be operated in close proximity to residences include rollers, bulldozers, and heavy trucks. These types of equipment may produce peak particle velocity vibration levels of up to 0.21 inches per second at a distance of 25 feet, which could intermittently be noticeable inside of buildings. However, vibration from heavy equipment would only occur during a period of days for each phase of road construction.

Construction of the new bridge would require the use of pile drivers in addition to other heavy earthmoving equipment. Vibration from impact-hammer pile driving may generate peak particle velocity levels of up to 0.20 inches per second at a distance of 100 feet. Vibration from pile driving is not likely to be noticeable at the nearest residence 250 feet away from the bridge construction area.

Use of heavy construction equipment would be temporary and cease once construction is complete. The types of equipment scheduled for use in the work areas adjacent to residential areas would produce a level of vibration that may be intermittently noticeable but is not expected to result in a negative community reaction, or cause building damage. Therefore, this impact would be less than significant, and no mitigation is required.

c) For a project located within the vicinity of a private airstrip or 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?

No Impact—There are no airports within two miles of the project. The airport nearest to the project area is the Stockton Metropolitan Airport, located more than 5 miles away. The project does not lie within an airport influence or plan area. Therefore, there would be no impact.

3.2.14 Population and Housing

CEQA Significance Determinations for Population and Housing

Would the project:

a) Induce substantial unplanned 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)?

No Impact—The project is a bridge replacement project and will not result in an increase in population directly by constructing housing or creating new employment. It is planned facility in an area that is already zoned for development and accessible

by other roadways, therefore the project would not induce population growth by providing new access or opening a new area to development. There would be no impact.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact—The project would require acquisition from 9 parcels. However, most acquisition would be small amounts of acreage and no residences would be removed. Therefore, the project would not result in the displacement of people or housing and there would be no impact.

3.2.15 Public Services

CEQA Significance Determinations for 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?

No Impact—The project is a bridge replacement project and would not result in increased demand for fire protection. Construction of the project would not result in increased response times because fire stations are located on both sides of the river and would not be required to pass through the construction area. Additionally, a traffic management plan would be prepared that would include advance notice of lane closures to emergency service providers.

Police protection?

No Impact—The project is a bridge replacement project and would not result in increased demand for police protection. Construction of the project is would not result in increased response times because police stations are located on both sides of the river and would not be required to pass through the construction area. Additionally, a traffic management plan would be prepared that would include advance notice of lane closures to emergency service providers.

Schools?

No Impact—The project is a bridge replacement project and would not result in increased demand for space in schools in the area. Access to schools would not be affected because the existing Manthey Road bridge would be open to traffic until after the new bridge is completed.

Parks?

Less Than Significant Impact—The project is a bridge replacement project and would not result in increased demand for park resources. The project would have no permanent impact on parks because there are no parks within the project footprint. Construction of the project would result in some temporary impacts on Mossdale County Park, such as dust, noise, and the presence of construction equipment. These impacts would not affect use of the park and access would be maintained during project construction. Therefore, impacts on parks would be less than significant.

Other public facilities?

No Impact—The project is a bridge replacement project and would not result in increased demand for public facilities. There would be no impact.

3.2.16 Recreation

CEQA Significance Determinations for 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?

No Impact—The project is a bridge replacement project and would not result in increased demand for park resources that would result in deterioration. There would be no impact.

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?

No Impact—The project is a bridge replacement project and does not include park resources.

3.2.17 Transportation

CEQA Significance Determinations for Transportation

Would the project:

a) Conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

No Impact—The proposed project is listed in the City's General Plan and pertinent specific plans. It is also listed in the Regional Transportation Plan. There would be no impact.

b) Conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

No Impact—The project is a bridge replacement project and would not result in increased vehicle miles traveled or reduced level of service. There would be no impact.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact—The project is a bridge replacement project and would be designed to avoid hazardous geometric design features and incompatible uses. There would be no impact.

d) Result in inadequate emergency access?

No Impact—The project would have no effect on emergency access as emergency service providers are located on both sides of the river and would not be required to pass through the construction area. Should any emergency vehicles be required to cross the river, emergency access would not be affected because the existing Manthey Road bridge would remain open to traffic until after the new bridge is completed. Therefore, there would be no impact.

3.2.18 Tribal Cultural Resources

CEQA Significance Determinations for Tribal Cultural Resources

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

Less Than Significant Impact—There are no resources within the project area that are listed in or eligible for listing in the California Register of Historic Resources. The area is considered to be sensitive for buried archaeological resources, and a monitoring plan will be required to address any accidental discoveries. This plan in addition to the Caltrans' standard measures to stop work in the event of an accidental discovery would ensure that impacts on any potential resources would be less than significant.

b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in

subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less Than Significant Impact—There are no resources within the project area that meet the criteria for listing in the National Register of Historic Places. The area is considered to be sensitive for buried archaeological resources, and a monitoring plan will be required to address any accidental discoveries. This plan in addition to the Caltrans' standard measures to stop work in the event of an accidental discovery would ensure that impacts on any potential resources would be less than significant.

3.2.19 Utilities and Service Systems

CEQA Significance Determinations for Utilities and Service Systems

Would the project:

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Less Than Significant Impact—The project is a bridge replacement project and would not result in increased demand for water supply, or wastewater treatment. Construction of the project would require modifications to nine manholes and eight utility valves. The AT&T line attached to the existing bridge would need to be abandoned or relocated. Additionally, it may be necessary to relocate one Pacific Gas and Electric Company pole on Queirolo Road. Utility work may result in temporary service disruptions. Coordination with utility services will address temporary disruptions and this impact would be less than significant.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

No Impact—The project is a bridge replacement project and will not result in an increase in demand for water. There would be no impact.

c) 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?

No Impact—The project is a bridge replacement project and will not result in an increase in demand for wastewater treatment. There would be no impact.

d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Less Than Significant Impact—The project is a bridge replacement project and would not result in an increase in generation of solid waste as a result of operations. Waste generated by construction would be recycled to the extent possible. Materials that cannot be recycled would be disposed of at a landfill permitted to accept construction material. This impact would be less than significant.

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

No Impact—Waste generated by construction would be recycled to the extent possible. Materials that cannot be recycled would be disposed of at a landfill permitted to accept construction material and disposed of in compliance with federal, state, and local management and reduction statutes and regulations. There would be no impact.

3.2.20 Wildfire

CEQA Significance Determinations for Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact—The project area is not located in or near a state responsibility area or lands classified as very high fire hazard severity zones. Therefore, there would be no impact.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

No Impact—The project area is not located in or near a state responsibility area or lands classified as very high fire hazard severity zones. Therefore, there would be no impact.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

No Impact—The project area is not located in or near a state responsibility area or lands classified as very high fire hazard severity zones. Therefore, there would be no impact.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

No Impact—The project area is not located in or near a state responsibility area or lands classified as very high fire hazard severity zones. Therefore, there would be no impact.

3.2.21 Mandatory Findings of Significance

CEQA Significance Determinations for Mandatory Findings of Significance

a) Does the project have the potential to substantially 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?

Less Than Significant With Mitigation Incorporated—As discussed in Section 2.3, *Biological Environment*, the proposed project would result in impacts on a number of biological resources, such as riparian habitat, shaded riparian aquatic habitat, and both terrestrial and aquatic species. However, with the implementation of avoidance and minimization measures and compensatory mitigation these impacts would be less than significant and would not substantially reduce habitat, cause a reduction in population levels, or restrict the range of any species. As discussed in Section 2.1.10, *Cultural Resources*, there are no historic properties within the project area and nearby historic properties would not be affected by the proposed project. Therefore, there is no potential for the project to result in the elimination of an important example of an historic or prehistoric resource.

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.)

Less Than Significant Impact—As discussed in Section 2.4, *Cumulative Impacts*, although past, present, and future projects in the area may result in cumulative impacts on some resource areas, the contributions of the proposed project would not be considerable. Cumulative impacts on aesthetics (visual resources), hydrology and floodplain, air quality, noise, and biological resources (natural communities, wetlands and other waters, animal species, threatened and endangered species, and invasive species) are anticipated. With the implementation of avoidance, minimization, and mitigation measures identified in Chapters 2 and 3, the project’s contribution to those cumulative impacts would not be considerable.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less Than Significant Impact—The proposed project would not result in substantial adverse effects on human beings, either directly or indirectly. The project would involve some property acquisition but would not result in any business or residential relocations. Relocation of utilities may result in limited service disruptions and construction may result in minor inconvenience for travelers. Coordination with utility providers and preparation of a traffic management plan are standard measures that would reduce the minimal impacts further. The proposed project is a bridge replacement project and would not introduce more population or spur growth that would affect public services or utilities. As discussed in Chapter 2, there would be no noticeable increase in noise or degradation of air quality. Visual impacts would be minimal, as would the potential to expose the public to hazardous conditions. Therefore, this impact is less than significant.

Chapter 4 Comments and Coordination

Early and continuing coordination with the general public and public agencies is an essential part of the environmental process. It helps planners determine the necessary scope of environmental documentation and the level of analysis required, and to identify potential impacts and avoidance, minimization and/or mitigation measures and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including Project Development Team meetings, interagency coordination meetings, and letters and correspondence. This chapter summarizes the results of Caltrans' efforts to identify, address, and resolve project-related issues through early and continuing coordination.

4.1 Coordination during Preparation of Technical Studies and the Initial Study/Environmental Assessment

The following coordination with agencies and other stakeholders took place during preparation of the technical studies and the Draft Initial Study/Environmental Assessment.

- **Haggin Museum:** A consultation letter was sent to the Haggin Museum on September 19, 2016, to describe the project and request information on potential cultural resources in the Area of Potential Effects. Follow-up contact attempts were made in March 2017. No responses have been received to date.
- **Jedediah Smith Society:** A consultation letter was sent to the Jedediah Smith Society on September 19, 2016, to describe the project and request information on potential cultural resources in the Area of Potential Effects. Follow-up contact attempts were made in March 2017. No responses have been received to date.
- **Manteca Historical Society and Museum:** A consultation letter was sent to the Manteca Historical Society and Museum on September 19, 2016 to describe the project and request information on potential cultural resources in the Area of Potential Effects. Follow-up contact attempts were made in March 2017. No responses have been received to date.
- **San Joaquin County Historical Society:** A consultation letter was sent to the San Joaquin County Historical Society on September 19, 2016, to describe the project and request information on potential cultural resources in the Area of Potential Effects. Follow-up contact attempts were made in March 2017. No responses have been received to date.
- **Stockton Corral of Westerners:** A consultation letter was sent to the Stockton Corral of Westerners on September 19, 2016, to describe the project and request information on potential cultural resources in the Area of Potential Effects. Follow-up contact attempts were made in March 2017. No responses have been received to date.

- **Lincoln Highway Association:** A consultation letter was sent to the National organization and the California Chapter of the Lincoln Highway Association on August 23, 2018, to describe the project and request information on potential cultural resources in the Area of Potential Effects. Conversations with the California Chapter yielded information related to the original location of the Manthey Road bridge and the highway in the area.
- **Central California Information Center:** Cultural resources records searches were obtained from the Central California Information Center on March 28, 2014, and August 25, 2016.
- **Native American Heritage Commission:** A letter was sent on June 9, 2014, to the California Native American Heritage Commission to request a search of the Sacred Lands File and to request a list of Native American representatives who may be able to provide information about resources of concern to them located within or adjacent to the Area of Potential Effects. The Native American Heritage Commission responded on June 20, 2014, provided a list of one Native American contact (Katherine Erolinda Perez of the Northern Valley Yokuts), and stated that the Sacred Lands File had no records of sacred lands in the immediate vicinity of the Area of Potential Effects. On August 13, 2016, Section 106 coordination with the Native American Heritage Commission was reinitiated and a search of the Sacred Lands Files and a list of Native American contacts for the area were requested. The Native American Heritage Commission responded on September 7, 2016, in a letter stating that no Sacred Lands were identified within the project area. The Native American Heritage Commission also provided a list of four individuals, including Ms. Perez.
- **Nototomne/Northern Valley Yokuts Tribe:** Letters were sent to Katherine Erolinda Perez of the Nototomne/Northern Valley Yokuts Tribe a representative of the North Valley Yokuts Tribe on September 4, 2014, and September 26, 2016. Katherine Erolinda Perez stated that she had already been in contact with Caltrans on July 26, 2016, and that there were sensitive resources in the area. She recommended that a qualified archaeologist and the Northern Valley Yokuts Tribe be present and involved during any ground disturbance. Ms. Perez was involved in the testing efforts for this project.
- **Southern Sierra Miwuk Nation:** Letters were sent to four representatives of the North Valley Yokuts Tribe on September 4, 2014. The letters informed them of the project and its proposed activities and requested the contacts share information about potential cultural resources within or in the vicinity of the Area of Potential Effects. To date, no further communications have been received.
- **Wilton Rancheria:** Letters were sent to two representatives of the Wilton Rancheria (Andrew Franklin and Leland Daniels) on September 4, 2014. The letters informed them of the project and its proposed activities and requested the contacts share information about potential cultural resources within or in the vicinity of the Area of Potential Effects. Another letter was sent to Raymond Hitchcock (Chairperson) on September 26, 2016. A follow-up call was placed on October 12, 2016, and again on October 14, 2016. Mr. Hitchcock's receptionist

suggested the archaeologist contact the Executive Director of Environmental Resources. A voice mail was left at that number. To date, no further communications have been received.

- **Lone Band of Miwok Indians:** Letters were sent to three representatives of the Lone Band of Miwok Indians (Yvonne Miller (Chairperson), Anthony Burris (Cultural Heritage Committee Chair), and Randy Yonemura) on September 4, 2014, and an email was sent on September 5, 2014. The letters informed them of the project and its proposed activities and requested the contacts share information about potential cultural resources within or in the vicinity of the Area of Potential Effects. Another letter was sent to Crystal Martinez-Alire (Chairperson) on September 26, 2016. A follow up call was placed on October 12, 2016, and Randy Yonemura returned the call on October 14, 2016. Mr. Yonemura requested information, which was subsequently sent. To date, no further communications have been received.
- **Calaveras Band of Mi-Wuk Indians:** Letters were sent to three representatives of the Calaveras Band of Mi-Wuk Indians (Gloria Grimes, Debra Grimes, and Adam Lewis) on September 4, 2014. The letters informed them of the project and its proposed activities and requested the contacts share information about potential cultural resources within or in the vicinity of the Area of Potential Effects. To date, no further communications have been received.
- **Buena Vista Rancheria Me-Wuk Indians:** Letters were sent to two representatives of the Buena Vista Rancheria Me-Wuk Indians (Rhonda Morningstar-Pope and Dr. Roselynn Lwenya) on September 4, 2014. The letters informed them of the project and its proposed activities and requested the contacts share information about potential cultural resources within or in the vicinity of the Area of Potential Effects. Another letter was sent to Ms. Pope on September 26, 2016. A follow up call was placed on October 14, 2016. To date, no further communications have been received.
- **California Valley Miwok Tribe:** A letter was sent to a representative of the California Valley Miwok Tribe (Silvia Burley) on September 4, 2014. The letter informed her of the project and its proposed activities and requested the contacts share information about potential cultural resources within or in the vicinity of the Area of Potential Effects. Ms. Burley responded in a letter dated September 13, 2104, stating that the tribe had no issues or concerns, other than it be notified if any humans or artifacts are discovered. No further communications have been received to date.
- **Unites States Fish and Wildlife Service:** An official species list was obtained from the Unites States Fish and Wildlife Service, Sacramento Fish and Wildlife Office, on November 5, 2019.
- **National Marine Fisheries Service:** An official species list was obtained from the National Marine Fisheries Service on October 31, 2019.
- **Interagency Consultation:** The project underwent Interagency Consultation, and United States Environmental Protection Agency, Caltrans, and the Federal

Highway Administration issued concurrence that the project is not a project of air quality concern on August 11, 2016, and October 3, 2016, respectively. Documentation is included in Appendix E.

4.2 Scoping Meetings and Workshops

A public information meeting was hosted by the City of Lathrop Department of Public Works on November 12, 2014, at the Lathrop Senior Center. The purpose of the meeting was to introduce the public to the project and take comments. The meeting began with a presentation by the City's project manager, followed by questions and comments from the audience. Information exhibits were available for review and project team members were present. Eight members of the public attended.

4.3 Public Comments on the Initial Study/Environmental Assessment and Responses

Public comments and responses received during circulation of the Draft Initial Study/Environmental Assessment will be included in the Final Initial Study/Environmental Assessment.

Chapter 5 List of Preparers

5.1 Caltrans

Dominic Vitali, Environmental Chief. Contribution: Environmental document oversight.

Karimeh Juma, Associate Environmental Planner. Contribution: Environmental document oversight.

Allam Alhabaly, Engineer. Contribution: Noise oversight.

Benjamin Elliott, PQS Archaeologist. Contribution: Historic Property Survey Report, Archaeological Survey Report, and cultural resources compliance documents oversight.

Bruce Sumida, Local Assistance Engineer. Contribution: Floodplains oversight.

David M. Moore, Biologist. Contribution: Natural Environmental Study, Biological Assessment, and Wetland Delineation oversight.

Haiyan Zhang, Senior Environmental Planner. Contribution: NEPA Quality Control Reviewer.

John Whitehouse, PQS Architectural Historian. Contribution: Historic Resource Evaluation Report and cultural resources compliance documents oversight.

Maya Hildebrand, Air Quality Coordinator. Contribution: Air Quality oversight.

Reena Gohil, Associate Environmental Planner. Contribution: Initial Site Assessment oversight.

Robyn Fong, Landscape Architect. Contribution: Visual oversight.

Rogerio Leong, Engineer. Contribution: Water Quality oversight.

Sarah Luce, PQS Archaeologist. Contribution: Historic Property Survey Report, Archaeological Survey Report, and cultural resources compliance documents oversight.

Sonia Arellano, Traffic Engineer. Contribution: Traffic oversight. Ben Elliott, Cultural Resources

5.2 ICF

Shahira Ashkar, ICF Project Manager/Managing Director. M.A., Anthropology, University of Arizona; 25 years of archaeology and environmental planning experience. Contribution: Environmental Document Preparation, Traffic, Cultural Resources.

Jennifer Ban, ICF Visual Resources Specialist. B.L.A., Landscape Architecture, Pennsylvania State University, University Park; 20 years visual resources experience. Contribution: Visual resources.

Lindsay Christensen, ICF Senior Environmental Planner. B.S., Community and Regional Development, University of California, Davis; 14 years environmental planning experience. Contribution: Community Impact, Farmland, Relocations Senior Review; Geology.

John Howe, ICF Senior Wildlife Biologist. M.S., Environmental Biology, University of California, Los Angeles; 23 years of biological resources experience. Contribution: Wildlife Biology.

Jeff Kozlowski, ICF Senior Fish Biologist. M.S., Ecology, University of California, Davis; 33 years fisheries biology experience. Contribution: Fisheries Biology.

Sandy Lin, ICF Air Quality Specialist. M.C.P., City and Regional Planning, University of Pennsylvania; 9 years environmental planning and air quality analysis experience. Contribution: Air Quality and Greenhouse Gas.

Lucy Rollins, ICF Environmental Planner. *** Contribution: Community Impacts, Farmland, Relocations, Environmental Justice, Utilities and Emergency Services, Hazardous Materials.

Tina Sorvari, ICF Environmental Planner. B.A., Anthropology, California State University, Sacramento; 19 years of environmental planning experience. Contribution: Hazardous Materials.

Katrina Sukola, ICF Water Quality Specialist. M.Sc., Chemistry, University of Manitoba; 15 years of environmental planning experience. Contribution: Floodplain/Hydrology, Water Quality/Stormwater.

Ellen Unsworth, ICF Geologist. M.S., Interdisciplinary Studies (Geology, Biology, Technical Communications), Boise State University, Idaho; 20 years environmental planning experience. Contribution: Geology Senior Review.

Jason Volk, ICF Acoustical Engineer. M.S., Mechanical Engineering, North Carolina State University, Raleigh. 19 years noise analysis experience. Contribution: Noise.

Lisa Webber, ICF Senior Botanist/Wetland Ecologist. M.S., Botany, University of Massachusetts, Amherst; 29 years botany and wetland ecology experience. Contribution: Plant Species, Wetlands, and Invasive Species Senior Review.

Laura Yoon, ICF Air Quality Specialist. M.S., Environmental Management, University of San Francisco; 10 years air quality and climate change analysis experience. Contribution: Air Quality, Greenhouse Gas Senior Review.

Chapter 6 Distribution List

California State Clearinghouse
Office of Planning and Research
1400 10th Street
Sacramento, CA 95814 -5502

San Joaquin Valley Air Pollution
Control District
Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718

California Department of Fish and
Wildlife
Bay Delta Region (Region 3)
2825 Cordelia Road, Suite 100
Fairfield, CA 94534

Central Valley Flood Protection Board
3310 El Camino Avenue, Suite 170
Sacramento, CA 95821

California Air Resources Board
1001 I Street
Sacramento, CA 95814

California State Lands Commission
100 Howe Avenue, #100@
Sacramento, CA 95825

Regional Water Quality Control Board
Central Valley, Region 5
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670-6114

Native American Heritage Commission
1550 Harbor Boulevard, Suite 100
West Sacramento, CA 95691

Kathy Perez
Nototomne Cultural Preservation
Northern Valley Yokuts
P. O. Box 717
Linden, CA 95236

Ione Band of Miwok Indians
9252 Bush Street, Suite 2
Plymouth, CA 95669-0699

Office of Historic Preservation
1725 23rd Street, Suite 100
Sacramento, CA 95816

U.S. Army Corps of Engineers
Sacramento District
Regulatory Division
1325 J Street, Room 1480
Sacramento, CA 95814

Mayor Sonny Dhaliwal
390 Towne Centre Drive
Lathrop, CA 95330

Vice Mayor Martha Salcedo
390 Towne Centre Drive
Lathrop, CA 95330

Councilmember Diane Lazard
390 Towne Centre Drive
Lathrop, CA 95330

Councilmember Paul Akinjo
390 Towne Centre Drive
Lathrop, CA 95330

Councilmember Jennifer Torres-
O'Callaghan
390 Towne Centre Drive
Lathrop, CA 95330

California State Senator Cathleen
Galgiani
State Capitol, Room 5097
Sacramento, CA 95814

California State Assemblymember
Heath Flora
Sacramento Capitol, Suite 3098
Sacramento, CA 94249

United States Senator Kamala Harris
501 1 Street, Suite 7-600
Sacramento, CA 95814

United States Senator Diane Feinstein
2500 Tulare Street, Suite 4290
Fresno, CA 93721

United States Congressman Jerry
McNerney
2222 Grand Canal Boulevard, #7
Stockton, CA 95207

Appendix A Resources Evaluated Relative to the Requirements of Section 4(f)

Resources Evaluated Relative to the Requirements of Section 4(f): No-Use

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 United States Code (USC) 303, declares that “it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.”

Section 4(f) specifies that the Secretary [of Transportation] may approve a transportation program or project ... requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance or land of a historic site of national, state, or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if:

- there is no prudent and feasible alternative to using that land, and
- the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

This section of the document discusses parks, recreational facilities, wildlife refuges, and historic properties found within or next to the project area that do not trigger Section 4(f) protection because: 1) they are not publicly owned, 2) they are not open to the public, 3) they are not eligible historic properties, or 4) the project does not permanently use the property and does not hinder the preservation of the property.

There are four potential Section 4(f) properties in a 1/2-mile radius of the proposed project. These resources include one park and three historic properties. None of these resources are located within the project limits.

Mossdale County Park: This park is a regional park owned by the County and open to the public. Therefore, it is a Section 4(f) property. The project would not result in any property take of the park or encroachment. Access to the park will remain unchanged and will not be affected by construction. Removal of the existing bridge may result in some temporary noise impacts, but would not preclude normal use of the park. The property is a Section 4(f) property, but there would be no constructive use or temporary occupancy of the park. Therefore, the provisions of Section 4(f) do not apply.

State Route 12/Interstate 5 Connector Bridge over the San Joaquin River (Caltrans Bridge Number 290016F): This resource is located approximately 100 feet upstream of the Manthey Road Bridge. Project construction would be designed to avoid impacts on the structure. Removal of the Manthey Road Bridge would not result in impacts on the setting of the State Route 120/I-5 bridge that would affect its ability to convey significance because the period of significance is not connected to the Manthey Road Bridge. The construction of the new bridge would be visible, but would not affect the setting as it would be one of a number of such structures in the area. The proposed project would not adversely affect the activities, features, or attributes that qualify this historic resource for protection under Section 4(f); therefore, no use of historic properties would result from the project. Therefore, the provisions of Section 4(f) do not apply.

Southern Pacific Railroad Bridge over the San Joaquin River (California State Landmark Number 780-07): This resource is located far enough from the construction footprint of the proposed project that no construction impacts are anticipated. Like the State Route 120/I-5 connector bridge, the removal of the Manthey Road Bridge and construction of a new bridge would not result in impacts on the setting of the resource because there are a number of bridges in the area, and they are not connected by a period of significance. The proposed project would not adversely affect the activities, features, or attributes that qualify this historic resource for protection under Section 4(f); therefore, no use of historic properties would result from the project. Therefore, the provisions of Section 4(f) do not apply.

Grain Silos: The grain silos are located on the west side of the San Joaquin River, approximately 1/3-mile from the location of the existing and proposed bridges. There is no potential for direct impacts during construction. The removal of the Manthey Road Bridge and the construction of a new bridge might be noticeable from the silos but would not affect the setting because there are currently bridges in the background, and the change would be minimal. The proposed project would not adversely affect the activities, features, or attributes that qualify this historic resource for protection under Section 4(f); therefore, no use of historic properties would result from the project. Therefore, the provisions of Section 4(f) do not apply.


Appendix B Title VI Policy Statement

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY

EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION

OFFICE OF THE DIRECTOR
P.O. BOX 942873, MS-49
SACRAMENTO, CA 94273-0001
PHONE (916) 654-6130
FAX (916) 653-5776
TTY 711
www.dot.ca.gov


*Making Conservation
a California Way of Life.*

April 2018

NON-DISCRIMINATION POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964, ensures *"No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance."*

Related federal statutes and state law further those protections to include sex, disability, religion, sexual orientation, and age.

For information or guidance on how to file a complaint, please visit the following web page:
http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

To obtain this information in an alternate format such as 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) 324-8379, TTY 711, email Title.VI@dot.ca.gov, or visit the website www.dot.ca.gov.

LAURIE BERMAN
Director

*"Provide a safe, sustainable, integrated and efficient transportation system
to enhance California's economy and livability"*

Appendix C Summary of Relocation Benefits

California Department of Transportation Relocation Assistance Program

DECLARATION OF POLICY

“The purpose of this title is to establish a ***uniform policy for fair and equitable treatment*** of persons displaced as a result of federal and federally assisted programs in order that such persons ***shall not suffer disproportionate injuries*** as a result of programs designed for the benefit of the public as a whole.”

The Fifth Amendment to the United States Constitution states, “No Person shall...be deprived of life, liberty, or property, without due process of law, nor shall private property be taken for public use without just compensation.” The Uniform Act sets forth in statute the due process that must be followed in Real Property acquisitions involving federal funds. Supplementing the Uniform Act is the government-wide single rule for all agencies to follow, set forth in 49 Code of Federal Regulations Part 24. Displaced individuals, families, businesses, farms, and nonprofit organizations may be eligible for relocation advisory services and payments, as discussed below.

FAIR HOUSING

The Fair Housing Law (Title VIII of the Civil Rights Act of 1968) sets forth the policy of the United States to provide, within constitutional limitations, for fair housing. This act, and as amended, makes discriminatory practices in the purchase and rental of most residential units illegal. Whenever possible, minority persons shall be given reasonable opportunities to relocate to any available housing regardless of neighborhood, as long as the replacement dwellings are decent, safe, and sanitary and are within their financial means. This policy, however, does not require the Department to provide a person a larger payment than is necessary to enable a person to relocate to a comparable replacement dwelling.

Any persons to be displaced will be assigned to a relocation advisor, who will work closely with each displacee in order to see that all payments and benefits are fully utilized and that all regulations are observed, thereby avoiding the possibility of displacees jeopardizing or forfeiting any of their benefits or payments. At the time of the initiation of negotiations (usually the first written offer to purchase), owner-occupants are given a detailed explanation of the state’s relocation services. Tenant occupants of properties to be acquired are contacted soon after the initiation of negotiations and also are given a detailed explanation of the Caltrans Relocation Assistance Program. To avoid loss of possible benefits, no individual, family, business, farm, or nonprofit organization should commit to purchase or rent a replacement property without first contacting a Department relocation advisor.

RELOCATION ASSISTANCE ADVISORY SERVICES

In accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, the Department will provide relocation advisory assistance to any person, business, farm, or nonprofit organization displaced as a result of the acquisition of real property for public use, so long as they are legally present in the United States. Caltrans will assist eligible displacees in obtaining comparable replacement housing by providing current and continuing information on the availability and prices of both houses for sale and rental units that are “decent, safe, and sanitary.” Nonresidential displacees will receive information on comparable properties for lease or purchase (for business, farm, and nonprofit organization relocation services, see below).

Residential replacement dwellings will be in a location generally not less desirable than the displacement neighborhood at prices or rents within the financial ability of the individuals and families displaced, and reasonably accessible to their places of employment. Before any displacement occurs, comparable replacement dwellings will be offered to displacees that are open to all persons regardless of race, color, religion, sex, national origin, and consistent with the requirements of Title VIII of the Civil Rights Act of 1968. This assistance will also include the supplying of information concerning federal and state assisted housing programs and any other known services being offered by public and private agencies in the area.

Persons who are eligible for relocation payments and who are legally occupying the property required for the project will not be asked to move without first being given at least 90 days written notice. Residential occupants eligible for relocation payment(s) will not be required to move unless at least one comparable “decent, safe, and sanitary” replacement dwelling, available on the market, is offered to them by the Department.

RESIDENTIAL RELOCATION PAYMENTS

The Relocation Assistance Program will help eligible residential occupants by paying certain costs and expenses. These costs are limited to those necessary for or incidental to the purchase or rental of a replacement dwelling and actual reasonable moving expenses to a new location within 50 miles of the displacement property. Any actual moving costs in excess of the 50 miles are the responsibility of the displacee. The Residential Relocation Assistance Program can be summarized as follows:

Moving Costs

Any displaced person, who lawfully occupied the acquired property, regardless of the length of occupancy in the property acquired, will be eligible for reimbursement of moving costs. Displacees will receive either the actual reasonable costs involved in moving themselves and personal property up to a maximum of 50 miles, or a fixed payment based on a fixed moving cost schedule. Lawful occupants who move into the displacement property after the initiation of negotiations must wait until the

Department obtains control of the property in order to be eligible for relocation payments.

Purchase Differential

In addition to moving and related expense payments, fully eligible homeowners may be entitled to payments for increased costs of replacement housing.

Homeowners who have owned and occupied their property for 90 days or more prior to the date of the initiation of negotiations (usually the first written offer to purchase the property), may qualify to receive a price differential payment and may qualify to receive reimbursement for certain nonrecurring costs incidental to the purchase of the replacement property. An interest differential payment is also available if the interest rate for the loan on the replacement dwelling is higher than the loan rate on the displacement dwelling, subject to certain limitations on reimbursement based upon the replacement property interest rate.

Rent Differential

Tenants and certain owner-occupants (based on length of ownership) who have occupied the property to be acquired by the Department prior to the date of the initiation of negotiations may qualify to receive a rent differential payment. This payment is made when the Department determines that the cost to rent a comparable “decent, safe, and sanitary” replacement dwelling will be more than the present rent of the displacement dwelling. As an alternative, the tenant may qualify for a down payment benefit designed to assist in the purchase of a replacement property and the payment of certain costs incidental to the purchase, subject to certain limitations noted under the *Down Payment* section below. To receive any relocation benefits, the displaced person must buy or rent and occupy a “decent, safe and sanitary” replacement dwelling within one year from the date the Department takes legal possession of the property, or from the date the displacee vacates the displacement property, whichever is later.

Down Payment

The down payment option has been designed to aid owner-occupants of less than 90 days and tenants in legal occupancy prior to the Department’s initiation of negotiations. The one-year eligibility period in which to purchase and occupy a “decent, safe and sanitary” replacement dwelling will apply.

Last Resort Housing

Federal regulations (49 Code of Federal Regulations 24) contain the policy and procedure for implementing the Last Resort Housing Program on Federal-aid projects. Last Resort Housing benefits are, except for the amounts of payments and the methods in making them, the same as those benefits for standard residential relocation as explained above. Last Resort Housing has been designed primarily to cover situations where a displacee cannot be relocated because of lack of available comparable replacement housing, or when the anticipated replacement housing

payments exceed the limits of the standard relocation procedure, because either the displacee lacks the financial ability or other valid circumstances.

After the initiation of negotiations, the Department will within a reasonable length of time, personally contact the displacees to gather important information, including the following:

- Number of people to be displaced.
- Specific arrangements needed to accommodate any family member(s) with special needs.
- Financial ability to relocate into comparable replacement dwelling which will adequately house all members of the family.
- Preferences in area of relocation.
- Location of employment or school.

NONRESIDENTIAL RELOCATION ASSISTANCE

The Nonresidential Relocation Assistance Program provides assistance to businesses, farms and nonprofit organizations in locating suitable replacement property, and reimbursement for certain costs involved in relocation. The Relocation Advisory Assistance Program will provide current lists of properties offered for sale or rent, suitable for a particular business's specific relocation needs. The types of payments available to eligible businesses, farms, and nonprofit organizations are: searching and moving expenses, and possibly reestablishment expenses; or a fixed in lieu payment instead of any moving, searching and reestablishment expenses. The payment types can be summarized as follows:

Moving Expenses

Moving expenses may include the following actual, reasonable costs:

- The moving of inventory, machinery, equipment and similar business-related property, including: dismantling, disconnecting, crating, packing, loading, insuring, transporting, unloading, unpacking, and reconnecting of personal property. Items acquired in the right-of-way contract may not be moved under the Relocation Assistance Program. If the displacee buys an Item Pertaining to the Realty back at salvage value, the cost to move that item is borne by the displacee.
- Loss of tangible personal property provides payment for actual, direct loss of personal property that the owner is permitted not to move.
- Expenses related to searching for a new business site, up to \$2,500, for reasonable expenses actually incurred.

Reestablishment Expenses

Reestablishment expenses related to the operation of the business at the new location, up to \$25,000 for reasonable expenses actually incurred.

Fixed In Lieu Payment

A fixed payment in lieu of moving, searching, and reestablishment payments may be available to businesses that meet certain eligibility requirements. This payment is an amount equal to half the average annual net earnings for the last two taxable years prior to the relocation and may not be less than \$1,000 nor more than \$40,000.

ADDITIONAL INFORMATION

Reimbursement for moving costs and replacement housing payments are not considered income for the purpose of the Internal Revenue Code of 1954, or for the purpose of determining the extent of eligibility of a displacee for assistance under the Social Security Act, or any other law, except for any federal law providing local "Section 8" Housing Programs.

Any person, business, farm or nonprofit organization that has been refused a relocation payment by the Department relocation advisor or believes that the payment(s) offered by the agency are inadequate may appeal for a special hearing of the complaint. No legal assistance is required. Information about the appeal procedure is available from the relocation advisor.

California law allows for the payment for lost goodwill that arises from the displacement for a public project. A list of ineligible expenses can be obtained from the Department's Division of Right of Way and Land Surveys. California's law and the federal regulations covering relocation assistance provide that no payment shall be duplicated by other payments being made by the displacing agency.

Appendix D Avoidance, Minimization, and Mitigation Measures

The following summary of avoidance, minimization and/or mitigation measures are sorted by resource area and subheadings “Mitigation Measures to Mitigate Significant Impacts under CEQA” and “Avoidance or Minimization Measures to Avoid or Minimize Less than Significant Impacts.”

Mitigation Measures to Mitigate Significant Impacts under CEQA

Mitigation Measure BIO-1. Compensate for Temporary Effects on and Permanent Loss of Riparian Woodland and Riparian Scrub (Including Shaded Riverine Aquatic Cover)

The City will comply with regulatory requirements determined as part of the Streambed Alteration Agreement for the work that would occur within the San Joaquin River, including riparian habitat mitigation. The City will compensate for construction-related effects and permanent loss of up to 0.07 acre of riparian woodland and up to 0.07 acre of riparian scrub at a minimum ratio of 1:1 (1 acre restored for every 1 acre permanently affected). The actual compensation ratios will be determined through coordination with the California Department of Fish and Wildlife as part of the permitting process. In addition, temporary loss of up to 0.08 acre riparian woodland and up to 0.09 acre of riparian scrub that cannot be restored onsite will be mitigated. The City will purchase mitigation bank credits to compensate for temporary and permanent losses of riparian woodland and riparian scrub on the waterside slope of the existing levees, including riparian woodland supporting Shaded Riverine Aquatic cover habitat.

Because compliance with the United States Army Corps of Engineers levee vegetation policy, the Unified Land Development Code, and other engineering constraints limit the ability to achieve full onsite restoration of temporary impacts and compensation for permanent impacts, the purchase of mitigation bank credits will be needed to achieve no net loss of existing in-kind riparian and Shaded Riverine Aquatic cover habitat values.

The riparian mitigation may also benefit Swainson’s hawk, white-tailed kite, yellow-breasted chat, yellow warbler, and western red bat. Depending on the exact location, this mitigation could also benefit riparian brush rabbit.

The City will purchase riparian habitat credits from an approved mitigation bank near the project, such as the Cosumnes Floodplain Mitigation Bank, Fremont Landing Conservation Bank, or Liberty Island Conservation Bank. If no suitable mitigation bank options are available at the time of construction, the City will pay into the National Fish and Wildlife Foundation Sacramento District in-lieu fee program. The final compensation ratio of restored or created riparian habitat for each acre of

riparian habitat removed will be approved by California Department of Fish and Wildlife in order to result in no net loss of riparian habitat.

In addition to mitigating for the loss of riparian forest habitat, specific measures will be included to compensate for the loss of Shaded Riverine Aquatic cover (area and linear feet). However, the acreage will not be duplicated, such that the acreage of riparian forest habitat restored for Shaded Riverine Aquatic cover mitigation will apply toward riparian forest habitat mitigation requirements. National Marine Fisheries Service recommends revegetating onsite at a 3:1 ratio (3 units replaced for every 1 unit of affected habitat) with native riparian species to replace Shaded Riparian Aquatic cover habitat. Shaded Riverine Aquatic cover mitigation will include the following riparian replacement requirements:

- Replace the 0.016 acre of temporary loss of Shaded Riverine Aquatic cover vegetation at a 1:1 replacement ratio (i.e., 0.016 acre) and the 0.014 acre of permanent loss of Shaded Riverine Aquatic cover vegetation at a 3:1 replacement ratio (i.e., 0.042 acre) by purchasing a total of 0.058 acre (0.016 acre + 0.042 acre) of Shaded Riverine Aquatic cover credits.
- Shaded Riverine Aquatic cover credits will need to be purchased from a National Marine Fisheries Service-approved mitigation bank within the approved service area for the project that provides riparian forest floodplain conservation credits as offsite compensation for impacts on federally listed anadromous salmonids, designated critical habitat, and essential fish habitat for Chinook salmon.

Mitigation Measure Bio-2. Purchase Channel Enhancement Credits at National Marine Fisheries Service-Approved Anadromous Fish and Unites States Fish and Wildlife Service-Approved Delta Smelt Conservation Bank for Impacts on Critical Habitat

Permanent impacts on critical habitat, including the permanent shading of up to an additional 55,866 square feet (0.13 acre) of aquatic habitat, will be mitigated through purchase of 1.20 acres of mitigation credits at a National Marine Fisheries Service-approved anadromous fish and a Unites States Fish and Wildlife Service-approved delta smelt conservation bank.

The City proposes to purchase 1.20 acres of mitigation credits because National Marine Fisheries Service has indicated that the existing bridge should not be included in the environmental baseline, and although National Marine Fisheries Service would consider 2:1 mitigation for shade impacts, Unites States Fish and Wildlife Service requires 3:1 mitigation for impacts on delta smelt critical habitat, including shallow water habitat. Because the entire channel area (0.40 acre) at the proposed bridge location meets Unites States Fish and Wildlife Service' definition of shallow water habitat, a minimum of 1.20 acres of mitigation credits are needed to meet Unites States Fish and Wildlife Service' 3:1 mitigation ratio for impacts on delta smelt critical habitat.

Mitigation Measure CUL-1. Prepare and Implement Post Review Discovery Plan

Monitoring guided by the Post Review Discovery and Monitoring Plan will be required in areas that have been identified as sensitive for buried archaeological resources.

Avoidance or Minimization Measures to Avoid or Minimize Less than Significant Impacts

Implement a Traffic Management Plan

As part of construction, the project proponents will prepare and implement a Traffic Management Plan to avoid and minimize potential impacts. At a minimum, the Traffic Management Plan will detail the procedure for conducting outreach and notification to publicize planned lane closures and construction activities. Implementation of the Traffic Management Plan would ensure that access to community services and school bus routes are not impeded by construction activities. The Traffic Management Plan would reduce impacts of the project on temporary access and circulation caused by potential traffic delays during construction.

Use Native Grass and Wildflower Species in Erosion Control Grassland Seed Mix

The City will require construction contractors to incorporate native grass and wildflower seed into standard seed mixes for erosion control measures that will be applied to all exposed slopes. Wildflowers will provide seasonal interest to areas where trees and shrubs are removed and grasslands are disturbed. Only wildflower and grass species that are native will be added into the seed mix, and under no circumstances will any invasive grass or wildflower plant species be used as any component in any erosion control measures. Species will be chosen that are indigenous to the area and for their appropriateness to the surrounding habitat. For example, upland grass and wildflower species will be chosen for drier, upland areas, and wetter species will be chosen for areas that will receive more moisture. If not appropriate to the surrounding habitat, wildflowers should not be included in the seed mix.

Install Visual Barriers between Construction Staging and Storage Areas and Sensitive Receptors

Sensitive residential receptors may be located close to staging and storage areas when the project is constructed. Therefore, the City will require the contractor to install visual barriers to obstruct undesirable views of construction staging and storage areas within 500 feet of sensitive residential receptors not surrounded by sound walls or privacy fencing. The visual barrier may be chain link fencing with privacy slats or fencing with windscreen material, wood, or other similar barrier. The visual barrier will be a minimum of 6 feet high to help to maintain the privacy of residents and block ground-level views toward construction activities. Although this visual barrier would introduce a visual intrusion, it would greatly reduce the visual effects associated with visible construction activities, and screening construction activities and protecting privacy are deemed desirable.

Implement Landscaping and Visual Buffers

Landscaping along bermed bridge approaches and Golden Valley Parkway will improve the visual quality of the roadway corridor by improving corridor aesthetics and helping to reduce the apparent scale of the berms and width of the roadway corridor for the Build Alternative. This landscaping also will serve as a buffer and screen against nuisance lighting resulting from oncoming vehicle headlights and roadway lighting and help to prevent or greatly reduce nuisance lighting from affecting nearby sensitive viewers. These plans will be designed to be consistent with the Landscape Architecture Standards for the Golden Valley Parkway identified within the Urban Design Concept Plans. The following elements will be incorporated into the project landscaping plan.

- Plant species that are native and indigenous to the project area and California can be used to create attractive spaces, high in aesthetic quality, that are not only drought-tolerant, but also attract more wildlife than traditional landscape plant palettes. Use of native species promotes a visual character of California that is being lost through development and reliance on nonnative ornamental plant species. The Golden Valley Parkway Landscape Palette, identified in the Urban Design Concept Plans, will be evaluated and nonnative ornamental plant species will be replaced with drought-tolerant native plant species where such a replacement will not compromise design intent or landscape aesthetics or increase landscape maintenance.
- Special attention will be paid to plant choices near residences to ensure that species chosen are of an appropriate height and rely on evergreen species to provide year-round light screening from nuisance light.
- Under no circumstances will any invasive plant species be used at any location.
- Landscaping will be installed in a manner that accommodates the eventual four-lane arterial. Therefore, only smaller shrubs, grasses, vines, and groundcovers will be planted. This will prevent the need to cut down semi-mature to mature trees and larger shrubs once the parkway is expanded from two to four lanes. In addition, this will ensure that trees and larger shrubs are planted along both sides of the parkway at the same time, creating a symmetrical-looking parkway corridor and preventing one side of the parkway from having mature trees and shrubs while the other side does not.
- Design of the landscaping plan will try to maximize the use of planting zones that are water efficient and use drought-resistant plants. The design also may incorporate aesthetic features, such as cobbling swales or shallow detention areas, which can reduce or eliminate the need for irrigation in certain areas.
- If an irrigation system is required, an irrigation and maintenance program will be implemented during the plant establishment period and carried on, as needed, to ensure plant survival. Areas that are irrigated will use a smart watering system that evaluates the existing site conditions and plant material against weather conditions to avoid overwatering of such areas. To avoid undue water flows, the irrigation system will be managed in such a manner that any broken spray heads,

pipes, or other components are fixed within 1–2 days, or the zone or system will be shut down until it can be repaired.

Apply Aesthetic Design and Minimum Lighting Standards for Any New Lighting

The City's municipal code promotes the use of street trees to reduce glare (Section 12.16.010). In addition, the street lighting standards of the Urban Design Concept Plans dictate that shielding devices be used to prevent light trespass into adjacent residential units and that the spacing and brightness of lights shall meet City, Pacific Gas and Electric Company, and State of California standards for illumination and safety. In addition to these measures, all lighting is to cause minimum impact on the surrounding environment and will use downcast, cut-off type fixtures that are shielded and direct the light only toward surfaces requiring illumination. Lights must be installed at the lowest allowable height and cast low-angle illumination while minimizing incidental light spill onto adjacent properties or open spaces, including the river, or backscatter into the nighttime sky. Lights will provide warmer color temperatures (i.e., no greater than 3500 Kelvin), with the minimum lumens feasible for security and safety to reduce the potential for creating harsh, nuisance-lighting conditions. Light fixtures will have non-glare finishes that will not cause reflective daytime glare. Design measures used to reduce light pollution will incorporate the technologies available at the time of project design to allow for the highest potential reduction in light pollution.

Measures for In Water and Over-water Construction Activity

Best management practices would be implemented to avoid or minimize impacts to water resources during in-water construction activities required either for the installation of piles for temporary trestles or spud piles used to secure barge-mounted cranes in place, as well as the installation of cofferdams as required by the permits listed in Table 2.2.2-2. best management practices would include:

- Isolating pier foundation construction from the receiving water with a cofferdam to limit the transport of turbid water into San Joaquin River or as otherwise approved by the Central Valley Regional Water Quality Control Board;
- Minimizing relocating barges, if used, to avoid disturbing channel substrate and locally increasing turbidity levels with the spud piles;
- Providing water quality monitoring during activities that have the potential to impact water quality of the San Joaquin River; and
- Providing a description and design drawings of the proposed material containment and collection system to prevent discharges of construction material, demolition debris, and equipment to the receiving water with the Storm Water Pollution Prevention Plan

Measures for Stormwater and Groundwater

Design features to address water quality impacts are a condition of the Phase II Municipal Separate Storm Sewer System permit, construction general permit, and other regulatory agency requirements. With proper implementation of these design

features or best management practices, short-term construction-related water quality impacts and permanent water quality impacts would be avoided or minimized. Examples of these best management practices would include:

- Implementing erosion control best management practices to stabilize new pervious surfaces to avoid suspended sediment and turbidity effects; and
- Providing stormwater treatment best management practices that allow for infiltration of stormwater runoff.

Construction Dewatering

Construction dewatering would be regulated under the Central Valley Regional Water Quality Control Board's Waste Discharge Requirements General Order for Dewatering and Other Low Threat Discharges to Surface Waters (Order Number 5-00-175, National Pollutant Discharge Elimination System Number CAG995001), as well as the construction general permit. The provisions and conditions in these permits pertaining to construction dewatering and discharges would avoid and/or minimize potential impacts to water quality.

Minimize Impacts from Seismic Events

To minimize potential impacts from seismic events, the project will be constructed in accordance with all applicable Caltrans standards and regulations and designed for the maximum credible earthquake. All construction activities will adhere to current engineering practices and recommendations provided by a Geotechnical Engineer/Engineering Geologist.

Minimize Soil Instability

To minimize the potential for soil instability from shrink-swell potential, soils with high shrink-swell potential will be compacted at the highest optimal moisture content possible. In general, fill slopes should be compacted to 90 percent relative compaction and 95 percent at bridge approaches.

If retaining walls are needed, the engineered fill can generally support walls lower than about 15 feet high. For walls greater than 15 feet, an engineered retaining walls is recommended.

Conduct Geotechnical Investigation

Additional subsurface exploration and laboratory testing is required for project design. During final design at least one test boring at each abutment and at least one test boring at each bent. Supports located within the existing river channel will likely be drilled from a barge. The additional investigation will include groundwater encountered, soil depths, and collections of bulk and relatively undisturbed soil samples for laboratory testing.

Develop and Implement Plans to Address Worker Health and Safety

Contractors will be required to work under health and safety and soil management plans, which will be prepared to address worker safety when working with potentially

hazardous materials, including potential asbestos-containing materials, lead-based paint, lead chromate, soils potentially containing aerially deposited lead, pesticides, herbicides, and other construction-related materials within the project right-of-way. The plans will provide for identification of potential hazardous materials at the work site and specific actions to avoid worker exposure.

Appropriately Dispose of Soils Contaminated with Aerially Deposited Lead

To prevent exposure of workers and the public to contaminated soils, requirements as detailed in the aerially deposited lead Agreement will be followed. In addition, surface soils from potentially contaminated areas will be tested and, should they exceed standards, screened and contaminated soils will be disposed of appropriately. Soil excavated from the surface to a depth of 1 foot can be reused within the public right-of-way, if covered with at least 1 foot of clean soil or pavement structure. If soil excavated from the top 1 foot will not be reused within the public right-of-way, then the excavated soil would be either: (1) managed and disposed of as a California hazardous waste, or (2) stockpiled and resampled to confirm waste classification in accordance with specific disposal facility acceptance criteria, if applicable.

Conduct Visual Inspection and Testing of Contaminated Soils

There is a potential for residual pesticides and/or herbicides in shallow soil in the northwest corner of the parcel on the south side of Sadler Oaks Road (Assessor's Parcel Number 241-020-63). The equipment and debris area on this parcel will be inspected for surface staining prior to construction activities. If staining is observed, soil samples will be collected and tested for residual pesticides and herbicides. If soil contamination is identified, the City will comply with federal and state regulations and the San Joaquin County Certified Unified Program Agencies regulatory requirements regarding the handling and disposal of hazardous wastes. These requirements include consultation with the Department of Toxic Substances Control and Regional Water Quality Control Board and adherence to the Storm Water Prevention Pollution Plan. The Storm Water Prevention Pollution Plan requirement of best management practices designed to minimize the release of hazardous materials would help reduce potential impacts. Contaminated soils not reused onsite will be disposed of at a landfill facility authorized to accept such materials.

Conduct Sampling, Testing, Removal, Storage, Transportation, and Disposal of Yellow Traffic Striping along Existing Roadways

To protect workers and the public from lead exposure, yellow pavement striping subject to construction disturbance, demolition, or removal will be tested for lead-based paints prior to disturbance or removal. All aspects of the proposed project associated with removal, storage, transportation, and disposal of yellow pavement striping will be in strict accordance with appropriate regulations of the California Health and Safety Code. Disposal of the stripes will be at a Class 1 disposal facility. The responsibility of implementing this measure will be outlined in the contract between the City and its contractors.

Conduct Asbestos and Lead Surveys of Structures

To prevent exposure of workers and the public to asbestos and lead, a hazardous materials survey will be conducted prior to the demolition of the existing bridge. If lead or asbestos is found, an abatement plan will be developed prior to removal or renovation. The abatement plan will provide for a California-certified asbestos consultant and California Department of Health Services-certified lead project designer, who will prepare hazardous materials specifications for the abatement of the asbestos-containing materials and lead-containing paint. The specification will be the basis for selecting qualified contractors to perform the proposed asbestos and lead-abatement work. A California-licensed asbestos abatement contractor will be retained to perform the abatement of any asbestos-containing construction materials and lead-based paint deemed potentially hazardous. Abatement of hazardous building materials will be completed prior to any work on these structures.

Implement California Department of Transportation Standard Specifications

The construction contractor must comply with Caltrans Standard Specifications regarding Air Quality, and Emissions Reductions (2015). Caltrans Standard Specifications regarding Air Pollution Control specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances. Caltrans Standard Specifications regarding Emissions Reductions ensures that construction activities adhere to the most recent emissions reduction regulations mandated by California Air Resources Board.

Adhere to San Joaquin Valley Air Pollution Control District Rule 9510

As required by San Joaquin Valley Air Pollution Control District Rule 9510, the City will prepare and submit an air impact assessment to the San Joaquin Valley Air Pollution Control District. The air impact assessment includes the calculation of emissions generated by the project and the emission reductions required by the provisions set forth in the rule. The air impact assessment must be submitted to the San Joaquin Valley Air Pollution Control District no later than applying for final discretionary approval, and offsite mitigation fees, if applicable, must be paid to the San Joaquin Valley Air Pollution Control District before issuance of the first grading/building permit, whichever comes first. Required onsite emission reductions and potential offsite emission reduction fees (if necessary) will be calculated through the permitting process, as dictated by Rule 9510, to reduce construction-related nitrogen oxides emissions by 20 percent suspended particulate matter exhaust emissions by 45 percent, compared to the statewide fleet average.

Implement a Dust Control Plan

To comply with San Joaquin Valley Air Pollution Control District Regulation VIII Requirements, construction contractors will prepare and submit a dust control plan for approval by the San Joaquin Valley Air Pollution Control District at least 30 days prior to any earthmoving or construction activities. Potential measures that might be included in the dust control plan to control the generation of construction-related suspended particulate matter emissions could include the following.

- Pre-activity
 - Pre-water the work site
 - Plan work in phases to reduce the amount of surface area disturbed at any one time.
- Active operations
 - Apply water to dry areas during leveling, grading, trenching, and earthmoving activities.
 - Construct and maintain wind barriers and apply water or dust suppressants to the disturbed surface areas.
- Inactive operations, including after work hours, weekends, and holidays
 - Apply water or dust suppressants on disturbed surface areas to form a visible crust and restrict vehicle access to maintain the visible crust.
- Temporary stabilization of areas that remain unused for 7 or more days
 - Restrict vehicular access and apply and maintain water or dust suppressants on all unvegetated areas.
 - Establish vegetation on all previously disturbed areas.
 - Apply and maintain gravel at all previously disturbed areas.
 - Pave previously disturbed areas.
- Unpaved access and haul roads, traffic, and equipment storage areas
 - Apply water or dust suppressants to unpaved haul and access roads.
 - Post a speed limit of not more than 15 miles per hour; place signs at each entrance and again every 500 feet.
 - Apply water or dust suppressants to vehicle traffic and equipment storage areas.
- Wind events
 - Apply water to control fugitive dust during wind events, unless unsafe to do so, using water-application equipment.
 - Cease activities that disturb the soil whenever visible dust emissions cannot be effectively controlled.
- Outdoor handling and storage of bulk materials
 - Apply water or dust suppressants to storage piles.
 - Cover storage piles with tarps, plastic, or other suitable material and anchor the piles in a manner that prevents the cover from being removed by wind action.
 - Install and maintain wind barriers with less than 50 percent porosity around the storage piles and apply water or dust suppressants.

- Use a three-sided structure with less than 50 percent porosity that is at least as high as the storage piles.
- Onsite transport of bulk materials
 - Limit vehicle speed on the work site to 15 miles per hour.
 - Load all haul trucks such that the freeboard is not less than 6 inches when transported across any paved public access road.
 - Apply a sufficient amount of water to the top of the load to limit visible dust emissions.
 - Cover haul trucks with a tarp or other suitable cover.
- Offsite transport of bulk materials
 - Clean or cover the interior of emptied truck cargo compartments before leaving the site.
 - Prevent spillage or loss of bulk materials from holes or other openings in the cargo compartment's floor, sides, and tailgates.
- Outdoor transport using a chute or conveyor
 - No open chutes or conveyors.
 - Fully enclose all chutes or conveyors.
 - Use water spray equipment to sufficiently wet the materials.
 - Wash or screen transported materials to remove fine particulates (particles of 10 micrometers or smaller).

Install Orange Construction Fencing between the Construction Area and Adjacent Sensitive Biological Resources

The City and/or its contractor will install orange construction fencing between the construction area and adjacent sensitive biological resource areas. Sensitive biological resources that occur adjacent to the construction area that could be directly affected by the project include natural communities of special concern, special-status wildlife habitats, and protected trees to be avoided.

Orange construction fencing around sensitive areas will be installed as one of the first orders of work and prior to equipment staging. The protected areas will be designated as environmentally sensitive areas and clearly identified on the construction plans prior to construction bid. Before construction begins, the construction contractor will work with the engineer and a resource specialist to verify the locations for the orange construction fencing and will place stakes around the sensitive resource sites to indicate these locations. The fencing will be installed before construction activities are initiated, maintained throughout the construction period, and removed after completion of construction.

To prevent snakes and other ground-dwelling animals from being caught in the orange construction fencing, it will be placed with at least a 1-foot gap between the

ground and the bottom of the fencing. Fencing will be inspected weekly and repairs made promptly, if needed.

Conduct Environmental Awareness Training for Construction Employees

The City will retain a qualified biologist to conduct environmental awareness training for construction crews before project implementation. The awareness training will be provided to all construction personnel to brief them on the need to avoid effects on sensitive biological resources (e.g., native trees, natural communities of special concern, and special-status species habitats in and adjacent to the construction area). The education program will include a brief review of the special-status species with the potential to occur in the biological study area (including their life history, habitat requirements, and photographs of the species). The training will identify the portions of the biological study area in which the species may occur, as well as their legal status and protection. The program also will cover the restrictions and guidelines that must be followed by all construction personnel to reduce or avoid effects on these species during project implementation, as well as the ramifications for non-compliance, which will include the steps to be taken if a sensitive species is found within the construction area (i.e., notifying the crew foreman, who will call a designated biologist). In addition, construction employees will be educated about the importance of controlling and preventing the spread of invasive plant infestations. An environmental awareness handout that describes and illustrates sensitive resources to be avoided during project construction and identifies all relevant permit conditions will be provided to each person. The crew foreman will be responsible for ensuring that crew members adhere to the guidelines and restrictions. Education programs will be conducted for appropriate new personnel as they are brought on the job during the construction period.

Conduct Biological Monitoring

An appointed monitor, trained by a qualified biologist, will ensure that activities are being conducted in accordance with the agreed upon project schedule and agency conditions of approval. If any violations are noted or if any sensitive species are encountered, the appointed monitor will contact the project biologist for guidance. A qualified biologist will be available to conduct site visits as required.

Certain activities will require a biological monitor to be present for the duration of the activity or during the initial disturbance of an area to ensure that there is no take of state or federally listed species and no violation of the Migratory Bird Treaty Act.

Protect Water Quality and Prevent Erosion and Sedimentation in Drainages and Wetlands

The City and/or their construction contractor will comply with all construction site best management practices specified in the Storm Water Pollution Prevention Plan and any other permit conditions to minimize introduction of construction-related contaminants and mobilization of sediment in the San Joaquin River. Broadly, these best management practices will address soil stabilization, sediment control, wind erosion control, vehicle tracking control, non-stormwater management, and waste

management practices. The best management practices will be based on the best conventional and best available technology.

The proposed project is subject to stormwater quality regulations established under the National Pollutant Discharge Elimination System, described in Section 402 of the federal Clean Water Act. In California, the National Pollutant Discharge Elimination System program requires that any construction activity disturbing 1 or more acres comply with the statewide General Permit, as authorized by the State Water Resources Control Board. The General Permit requires elimination or minimization of non-stormwater discharges from construction sites and development and implementation of a Storm Water Pollution Prevention Plan for the site. The primary elements of the Storm Water Pollution Prevention Plan 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 best management practices;
- Description of measures to prevent and control toxic materials spills; and
- Description of construction site housekeeping practices.

In addition to these primary elements, the Storm Water Pollution Prevention Plan specifies that the extent of sedimentation and siltation beyond the construction area would be minimized by erosion control and exclusion fencing or other means and that the extent of soil disturbed at any given time would be minimized. The Storm Water Pollution Prevention Plan must be retained at the construction site.

The best management practices will be selected to achieve an acceptable level of sediment removal and represent the best available technology economically achievable; they are subject to review and approval by the City. The City will perform routine inspections of the construction area to verify that the best management practices are properly implemented and maintained. The City will notify contractors immediately of a noncompliance issue and will require compliance.

The best management practices will include, but are not limited to, the following.

- All in-water work within the San Joaquin River will be conducted between June 1 and October 31 to avoid potential impacts on sensitive life stages (migration, spawning, egg and embryo incubation) of special-status fish species.
- Equipment used in and around drainages and wetlands will be in good working order and free of dripping or leaking engine fluids. All vehicle maintenance will be performed at least 300 feet from all streams. Any necessary equipment washing will be carried out where the water cannot flow into drainages or wetlands.
- Develop a hazardous material spill prevention control and countermeasure plan before construction begins. The plan will include strict onsite handling rules to keep construction and maintenance materials from entering the river, including

procedures related to refueling, operating, storing and staging construction equipment, and preventing and responding to spills. The plan also will identify the parties responsible for monitoring a spill response. During construction, any spills will be cleaned up immediately according to the spill prevention control and countermeasure plan. The City will review and approve the contractors' spill prevention control and countermeasure plan before allowing construction to begin.

- 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.
- Take any surplus concrete rubble, asphalt, or other rubble from construction that is not reused or recycled to a landfill.
- Prepare and implement an erosion and sediment control plan for the proposed project that will include the following provisions and protocols. The Storm Water Pollution Prevention Plan for the project will detail the applications and type of measures and the allowable exposure of unprotected soils.
 - Discharge from dewatering operations, if needed, and runoff from disturbed areas will be made to conform to the water quality requirements of the waste discharge permit issued by the Central Valley Regional Water Quality Control Board.
 - Throughout construction of the proposed project, soil exposure will be minimized through use of temporary best management practices, groundcover, and stabilization measures. Apply temporary erosion control measures to contain soil and filter runoff from disturbed areas by berms, vegetated filters, silt fencing, straw bales/wattle, plastic sheeting, catch basins, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, temporary revegetation or other ground cover, or other means necessary. Remove the temporary measures after the working area is stabilized, or as directed by the engineer. The contractor will conduct periodic maintenance of temporary erosion and sediment control measures.
 - Exposed dust-producing surfaces where vegetation has been removed will be sprinkled daily, if necessary, until wet; this measure will be controlled to avoid producing runoff. Paved roads will be swept daily following construction activities.
 - Enclose exposed stockpiles of dirt or other loose, granular construction materials that could contribute sediment to waterways. Avoid earth or organic material from being deposited or placed where it may be directly carried into a channel. Material stockpiles will be located in non-traffic areas only. Side slopes will not be steeper than 2:1. All stockpile areas will be covered with soil stabilization material or a temporary cover and surrounded by a filter fabric fence and interceptor dike.

- Cover or apply nontoxic soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more) that could contribute sediment to waterways.
- Plant an appropriate seed mix on disturbed areas upon completion of construction.
- The City also will obtain a 401 Water Quality Certification from the Central Valley Regional Water Quality Control Board, which may contain additional best management practices and water quality measures to ensure the protection of water quality.

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

To avoid potential injury to or mortality of western pond turtles, the City will retain a qualified biologist to conduct a preconstruction survey for western pond turtles within 24 hours of the start of construction. A biologist will also conduct a survey immediately prior to work being conducted along the shoreline of the river. The biologist will survey the aquatic habitat, riverbanks, and adjacent ruderal grassland habitat within the construction area.

A biological monitor will be present during ground disturbing activities occurring along the shoreline. If a turtle is found within the immediate work area, the biological monitor will stop work in that area until the turtle is able to move out of the work area on its own or a biologist with a current Scientific Collecting Permit and a Memorandum of Understanding from California Department of Fish and Wildlife specifically to relocate western pond turtle for the project will move the turtle out of the work area, approximately 50 feet away, and along the river shoreline so they may safely retreat into the water.

Conduct Surveys for Western Burrowing Owl and Implement Protective Measures if Found

A qualified biologist will conduct two separate preconstruction surveys for burrowing owl no less than 14 days prior to and within 24 hours of initiating ground-disturbing activities within suitable habitat. The preconstruction survey area will encompass the designated work area (including staging and access areas) and a 500-foot buffer around this area where access is permitted.

If an active burrow is present near a work area during the nesting season (February 1 to August 31), a qualified biologist will establish a no-activity zone that extends a minimum of 250 feet around the burrow. If burrowing owls are present at the site during the non-breeding season (September 1 through January 31), a qualified biologist will establish a no-activity zone that extends a minimum of 150 feet around the burrow.

If a designated no-activity zone for breeding or non-breeding burrowing owls cannot be established, a wildlife biologist experienced in burrowing owl behavior will

evaluate site-specific conditions and, in coordination with the California Department of Fish and Wildlife, recommend a smaller buffer (if possible) that minimizes the potential to disturb the owls (and still allows reproductive success during the breeding season). The site-specific buffer will be established by taking into consideration the type and extent of the proposed activity occurring near the occupied burrow, the duration and timing of the activity, the sensitivity and habituation of the owls to existing conditions, and the dissimilarity of the proposed activity to background activities. The wildlife biologist will monitor all construction activities that occur within the reduced buffer.

If burrowing owls are present within the direct disturbance area and cannot be avoided during the non-breeding season (generally September 1 through January 31), passive relocation techniques (e.g., installing one-way doors at burrow entrances) will be used. Passive relocation also may be used during the breeding season (February 1 through August 30) if a qualified biologist, coordinating with California Department of Fish and Wildlife, determines through site surveillance that the burrow is not occupied by a breeding pair, young, or eggs. Passive relocation will be accomplished by installing one-way doors (e.g., modified dryer vents or other California Department of Fish and Wildlife-approved methods). The one-way doors will be left in place for a minimum of 1 week and monitored daily to ensure that the owls have left the burrow. The burrow will be excavated using hand tools, and a section of flexible plastic pipe (at least 3 inches in diameter) will be inserted into the burrow tunnel during excavation to maintain an escape route for any animals that may be inside the burrow.

Conduct Vegetation Removal during the Non-Breeding Season and Conduct Preconstruction Surveys for Nesting Migratory Birds, Including Special-Status Birds

The City and/or its construction contractor will remove vegetation during the non-breeding season for most migratory birds (generally between September 15 and January 1) to the extent practicable.

If construction activities (including vegetation removal) would occur during the breeding season, the City will retain a qualified wildlife biologist with knowledge of the relevant species to conduct nesting surveys before the start of construction. A minimum of three separate surveys will be conducted for migratory birds, including raptors. Surveys will include a search of all trees and shrubs, ruderal areas, and grassland vegetation that provide suitable nesting habitat within the limits of disturbance. In addition, a 500-foot area around the limits of disturbance will be surveyed for nesting raptors. Surveys should occur during the height of the breeding season (March 1 to June 1), with one survey occurring in each of 2 consecutive months within this peak period and the final survey occurring 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 will be established around the site to avoid disturbance or destruction of the nest site 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 construction area (this date varies by species). The extent of these buffers will be determined by the biologist in coordination with the California Department of Fish and Wildlife 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.

Conduct Preconstruction Surveys for Roosting Bats and Implement Protective Measures, if Necessary

To avoid and minimize potential impacts on pallid bat, western red bat, and non-special-status bat species, the City will implement the following surveys and restrictions, as appropriate based on the timing of activities:

Preconstruction Bridge Surveys

Prior to the replacement of Manthey Road Bridge, a biologist experienced with bats will conduct a detailed survey of the bridge, looking for evidence of roosting bats, including areas over the river (this effort may require the use of a boat), no less than 2 months prior to demolition of the existing bridge.

If bat sign is detected, biologists will conduct an evening visual emergence survey of the bridge, from a half hour before sunset to 1–2 hours after sunset for a minimum of 2 nights no more than 2 months prior to when bridge work would be taking place. Night-vision goggles and/or full-spectrum acoustic detectors will be used during emergence surveys to assist in species identification. All emergence surveys will be conducted during favorable weather conditions (calm nights with temperatures conducive to bat activity and no precipitation predicted).

If a potentially active bat roost is in the bridge, passive monitoring with full-spectrum bat detectors will be used to assist in determining species present. A minimum of 4 nights of acoustic monitoring surveys will be conducted no more than 2 months prior to when construction would be taking place. If site security allows, detectors will be set to record bat calls for the duration of each night. To the extent possible, all monitoring will be conducted during favorable weather conditions (calm nights with temperatures conducive to bat activity and no precipitation predicted). The biologists will analyze the bat call data using appropriate software and will prepare a report that will be submitted to the City and the California Department of Fish and Wildlife.

Preconstruction Tree Surveys

Within 2 weeks prior to tree trimming or removal, a qualified biologist will examine trees to be removed or trimmed for suitable bat roosting habitat. High-quality habitat features (e.g., large tree cavities, basal hollows, loose or peeling bark, larger snags) will be identified and the area around these features searched for bats and bat sign (e.g., guano, culled insect parts, staining). Riparian woodland and stands of mature

broadleaf trees will be considered potential habitat for solitary foliage roosting bat species.

If bat sign is detected, biologists will conduct an evening visual emergence survey of the source habitat feature, from a half hour before sunset to 1–2 hours after sunset for a minimum of 2 nights within the season that construction would be taking place. Night-vision goggles and/or full-spectrum acoustic detectors will be used during emergence surveys to assist in species identification. All emergence surveys will be conducted during favorable weather conditions (calm nights with temperatures conducive to bat activity and no precipitation predicted).

If a potentially active bat roost is identified within a tree proposed for removal, passive monitoring with full-spectrum bat detectors will be used to assist in determining species present. A minimum of 4 nights of acoustic monitoring surveys will be conducted within the season that construction would be taking place. If site security allows, detectors should be set to record bat calls for the duration of each night. To the extent possible, all monitoring will be conducted during favorable weather conditions (calm nights with temperatures conducive to bat activity and no precipitation predicted). The biologists will analyze the bat call data using appropriate software and prepare a report that will be submitted to the City and California Department of Fish and Wildlife.

Protective Measures

Avoidance and minimization measures may be necessary if it is determined that bats are using the bridge or trees as roost sites, or if sensitive bats species are detected during acoustic monitoring. Appropriate measures will be determined in coordination with California Department of Fish and Wildlife and may include any combination of the measures listed below.

- Trees will be removed in pieces, rather than felling the entire tree.
- If a maternity roost is located, whether solitary or colonial, that roost will remain undisturbed with a buffer as determined in consultation with California Department of Fish and Wildlife until September 15 or until a qualified biologist has determined that the roost is no longer active.
- If a non-maternity roost in a tree is found, every effort should be made to avoid the roost, as methods to evict bats from trees are largely untested.
- If a non-maternity roost is found within the bridge or trees that cannot be avoided, eviction will be attempted using procedures designed in consultation with California Department of Fish and Wildlife to reduce the likelihood of mortality of evicted bats. In all cases, the following stipulations will be observed.
 - Eviction will not occur before September 15 and will match the timeframe for tree removal approved by California Department of Fish and Wildlife for nesting birds and other sensitive wildlife.
 - Qualified biologists will carry out or oversee the eviction tasks and will monitor the tree trimming/removal.

- Eviction will take place late in the day or in the evening to reduce the likelihood of evicted bats falling prey to diurnal predators.
- Eviction will take place during weather and temperature conditions conducive to bat activity.
- Structural changes may be made to the roost, to create conditions in the roost that are undesirable to roosting bats and encourage the bats to leave on their own (e.g., open additional portals so that temperature, wind, light and precipitation regime in the roost change). Structural changes to the roost will be authorized by California Department of Fish and Wildlife and will be performed without harming bats.
- Non-injurious harassment at the roost site, such as ultrasound deterrents or other sensory irritants, may be used to encourage bats to leave on their own. Prior to bridge work and/or tree removal/trimming and after other eviction efforts have been attempted, any confirmed roost site (bridge or tree) will be gently shaken or repeatedly struck with a heavy implement such as a sledge hammer or an axe; several minutes should pass before beginning bridge work, felling trees, or trimming limbs to allow bats time to arouse and leave the roost. The biologists will search downed vegetation for dead and injured bats. The presence of dead or injured bats will be reported to California Department of Fish and Wildlife. Injured bats will be transported to the nearest California Department of Fish and Wildlife-permitted wildlife rehabilitation facility.

Conduct All In-Water Construction Activities between June 1 and October 31, and only during Daylight Hours

The City proposes to conduct all in-water activities (including construction of the new bridge and removal of the existing bridge) between June 1 and October 31 to avoid or minimize causing disturbance and injury to, or mortality of, special-status fish species in the affected reaches of the San Joaquin River. In addition, in-water work will be conducted only during daylight hours to provide fish in the affected reaches of the San Joaquin River, with an extended quiet period during nighttime hours for feeding and unobstructed passage.

Limiting in-water construction to the June 1 to October 31 period would achieve several goals:

- In-water construction with the potential to generate harmful levels of underwater noise (e.g., driving piles with an impact hammer) would avoid the primary migration and spawning periods of special-status fish species.
- The timing of in-water construction would be concurrent with the period special-status fish species, including listed species, are less abundant in, or absent from, the affected reaches of the San Joaquin River.
- The length of the in-water construction period would be maximized by starting June 1, thereby limiting the number of construction seasons that in-water construction would be needed and the number of fish year classes potentially exposed to in-water construction effects.

Implement Measures to Minimize Exceedance of Interim Threshold Sound Levels during Pile Driving

The City will require the contractor to implement the following measures to minimize the exposure of listed fish species to potentially harmful underwater sounds during each construction season that impact pile driving occurs.

- The contractor will first vibrate all piles to the maximum extent practical 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, and will limit the total number of hammer strikes to 14,400 strikes per day (i.e., 1,800 hammer strikes per pile per day) for the piles for the temporary trestles and barges, and 2,500 strikes per day for the piles for the bridge piers.
- Impact pile driving events (days) shall be followed by a minimum period of 12 hours with no impact pile driving to allow the accumulated sound exposure level to reset to zero.
- During impact driving, the City will require the contractor to use a bubble curtain or similar sound attenuation device (e.g., dewatered cofferdam) to minimize the extent to which the interim peak and cumulative in-water sound exposure level thresholds are exceeded (Table 2.3.3-2).

Develop and Implement a Hydroacoustic Monitoring Plan

The City and/or its construction contractor will develop and implement a hydroacoustic monitoring plan. The monitoring plan will be submitted to the resource agencies (California Department of Fish and Wildlife, National Marine Fisheries Service, and United States Fish and Wildlife Service) for approval at least 60 days before the start of project activities. The plan will include the following requirements.

- The City and/or its construction contractor will monitor underwater noise levels during all impact pile driving activities on land and in water to ensure that that peak and cumulative sound exposure levels do not exceed estimated values (Table 2.3.3-1).
- The monitoring plan will describe the methods and equipment that will be used to document the extent of underwater sounds produced by pile driving, including the number, location, distances, and depths of the hydrophones and associated monitoring equipment.
- The monitoring plan will include a reporting schedule that includes provision of daily summaries of the hydroacoustic monitoring results to the resource agencies and more comprehensive reports on a monthly basis during the pile driving season.
- The reports will include the number of piles installed per day, the number of strikes per pile, the interval between strikes, the peak sound pressure level, sound exposure level, and root mean square per strike, and accumulated sound exposure level per day at each monitoring station.

- The City or its contractors will ensure that a qualified fish biologist is onsite during impact pile driving to document any occurrences of stressed, injured, or dead fish. If stressed, injured, or dead fish are observed during pile driving, the City and/or its construction contractor will reduce the number of strikes per day to ensure that fish are no longer showing signs of stress, injury, or mortality.

Monitor Turbidity in the San Joaquin River

The City will require the contractor to monitor turbidity levels in the San Joaquin River during in-water construction activities (e.g., pile driving, extraction of temporary steel casings and/or sheet piles used for cofferdams, and removal of existing piers). Turbidity will be measured using standard water quality monitoring techniques and, as required by the water quality certification for the project to determine whether changes in ambient turbidity levels exceed 20-percent, the threshold derived from the Basins Plan for the Sacramento and San Joaquin Rivers. If it is determined that turbidity levels exceed the 20-percent threshold, the City and/or its contractors will adjust work to ensure that turbidity levels do not exceed the 20-percent threshold.

Implement Cofferdam Restrictions

The following restrictions will be implemented during installation of the cofferdams and cofferdam dewatering.

- The extent of cofferdam footprints will be limited to the minimum necessary to support construction activities.
- Sheet piles used for cofferdams will be installed and removed using a vibratory pile driver.
- Cofferdams will be installed and removed only during the proposed in-water work window (between June 1 and October 31), except in the unlikely event that one or more sheet piles need to be removed to prevent fish entrapment if the cofferdam is overtopped by floodwaters.
- Cofferdams will be capped or opened to avoid entrapping special-status fish species when winter/spring flows are predicted to overtop cofferdams.
- All pumps used during dewatering of cofferdams will be screened according to California Department of Fish and Wildlife and National Marine Fisheries Service guidelines for screens.
- Cofferdam dewatering and fish rescue/relocation from within cofferdams will occur during the proposed in-water work window (between June 1 and October 31) only and will commence as soon as possible following cofferdam closure and commencement of dewatering (discussed below).

Prepare and Implement a Fish Rescue and Relocation Plan

The City and/or its construction contractor will develop and implement a fish rescue and relocation plan to recover any fish trapped in cofferdams. The fish rescue and relocation plan will be submitted to the resource agencies (California Department of Fish and Wildlife, National Marine Fisheries Service, and United States Fish and

Wildlife Service) for approval at least 60 days before initiating activities to install cofferdams. At a minimum, the plan will include the following.

- A requirement that fish rescue and relocation activities will commence immediately after cofferdam closure and that dewatering has sufficiently lowered water levels inside cofferdams to make it feasible to rescue fish.
- A description of the methods and equipment proposed to collect, transfer, and release all fish trapped within cofferdams. Capture methods may include seining, dip netting, and/or electrofishing as approved by California Department of Fish and Wildlife, National Marine Fisheries Service, and United States Fish and Wildlife Service. The precise methods and equipment to be used will be developed cooperatively by California Department of Fish and Wildlife, National Marine Fisheries Service, United States Fish and Wildlife Service, and the project proponent and/or contractor.
- A requirement that only California Department of Fish and Wildlife-, National Marine Fisheries Service-, and United States Fish and Wildlife Service-approved fish biologists will conduct the fish rescue and relocation.
- A requirement that fish biologists will contact California Department of Fish and Wildlife, National Marine Fisheries Service, and United States Fish and Wildlife Service immediately if any listed species are found dead or injured.
- A requirement that a fish rescue and relocation report be prepared and submitted to California Department of Fish and Wildlife, National Marine Fisheries Service, and United States Fish and Wildlife Service within 5 business days following completion of the fish relocation. Data will be provided in tabular form and at a minimum will include the species and number rescued and relocated, approximate size of each fish (or alternatively, approximate size range if a large number of individuals are encountered), date and time of their capture, and general condition of all live fish (e.g., good—active with no injuries, fair—reduced activity with some superficial injuries, poor—difficulty swimming/orienting with major injuries). For dead fish, additional data will include fork length and description of injuries and/or possible cause of mortality if it can be determined.

Prevent the Spread or Introduction of Aquatic Invasive Species

The City or its contractors will implement the following actions to prevent the potential spread or introduction of aquatic invasive species associated with the operation of barges and other in-water construction activities.

- The City or its contractors will coordinate with the California Department of Fish and Wildlife Invasive Species Program to ensure that the appropriate best management practices are implemented to prevent the spread or introduction of aquatic invasive species.
- Educate construction supervisors and managers about the importance of controlling and preventing the spread of aquatic invasive species.

- Train vessel and equipment operators and maintenance personnel in the recognition and proper prevention, treatment, and disposal of aquatic invasive species.
- If feasible, prior to departure of vessels from their place of origin and before in-water construction equipment is allowed to operate within the waters of the San Joaquin River, thoroughly inspect and remove and dispose of all dirt, mud, plant matter, and animals from all surfaces that are submerged or may become submerged, or places where water can be held and transferred to the surrounding water.

Minimize or Avoid Temporary Construction Lighting and Permanent Bridge Lighting from Directly Radiating on Water Surfaces of the San Joaquin River

The City will minimize or avoid the effects of nighttime lighting on special-status fish species by implementing the following actions.

Temporary Construction Lighting

- Avoiding construction activities at night, to the maximum extent practicable.
- Using the minimal amount of lighting necessary to safely and effectively illuminate the work areas.
- Shielding and focusing lights on work areas and away from the water surface of the San Joaquin River, to the maximum extent practicable.

Permanent Bridge Lighting

- Minimizing lighting of the bridge structure for aesthetic purposes.
- Using the minimal amount of lighting necessary to safely and effectively illuminate vehicular, bicycle, and pedestrian areas on the bridge.
- Shielding and focusing lights on vehicular, bicycle, and pedestrian areas and away from the water surface of the San Joaquin River, to the maximum extent practicable.

Avoid the Introduction and Spread of Invasive Plants

The City or its contractor will be responsible for avoiding the introduction of new invasive plants and the spread of invasive plants previously documented in the study area. Accordingly, the following measures will be implemented during construction.

- Educate construction supervisors and managers on weed identification and the importance of controlling and preventing the spread of invasive weeds.
- Minimize surface disturbance to the greatest extent feasible to complete the work.
- Use weed-free erosion-control materials.
- Use locally grown native plant stock and native or naturalized (noninvasive) grass seed during revegetation.

Conduct Focused Surveys for Nesting Swainson's Hawk prior to Construction, and Conduct Tree Removal during the Non-Breeding Season

The City will conduct surveys for nesting Swainson's hawks in the spring 1 year before construction to provide information in preparation for construction (i.e., locations of nests, hawks responses to disturbance, sizes of buffer areas, and anticipated impacts on project schedule). Surveys also will be conducted in the spring of the year of construction to determine whether there are active nests in the current year. Information collected during the first round of surveys will help to focus the second round of surveys. Focused surveys for Swainson's hawk will be conducted within the limits of disturbance and in a buffer area up to 0.5 miles around the limits of disturbance. The size of the buffer area surveyed will be based on the type of habitat present and the line of sight from the construction area to surrounding suitable breeding habitat. Buffer areas containing unsuitable nesting habitat or with an obstructed line of sight to the construction area will not be surveyed. Surveys will follow the methods of the Swainson's Hawk Technical Advisory Committee (2000). A minimum of six surveys will be conducted during the appropriate timeframes discussed in the methods. If needed, biologists will coordinate with the California Department of Fish and Wildlife regarding the extent and number of surveys. Surveys generally will be conducted from February to July. Survey methods and results will be reported to California Department of Fish and Wildlife.

The City and/or its construction contractor will remove or trim trees during the non-breeding season (generally between September 15 and January 1) to the extent feasible.

Avoid and Minimize Impacts on Riparian Brush Rabbit

- A preconstruction survey of the riparian habitat to be disturbed will be conducted immediately prior to the removal of riparian habitat by an individual approved by United States Fish and Wildlife Service and California Department of Fish and Wildlife.
- Immediately following preconstruction surveys, riparian vegetation will be removed using hand tools. All vegetation will be cut to ground level. The vegetation removal will be monitored by the approved biologist to ensure that these activities do not result in injury or mortality of riparian brush rabbit. Any riparian brush rabbits observed during vegetation removal will be allowed to passively disperse outside of the work area or, if necessary, will be captured by the approved biologist. United States Fish and Wildlife Service and California Department of Fish and Wildlife will be contacted immediately if any brush rabbits are observed or captured, and a plan will be developed in consultation with the agencies to relocate any captured animals.
- Immediately following vegetation removal, work areas adjacent to riparian habitats will have tightly woven exclusion fencing (i.e., silt fencing) installed at least 3 feet high above the ground surface between the work area and the riparian habitat. The fencing will extend from the water line up the riverbanks (paralleling the work area) to the top of the adjoining levee (the side nearest the

river such that the levee road is not fenced off). The fencing will continue another 25 feet away from the work area, along the top of the levee, and then curl back toward the river for approximately 10 feet to redirect wildlife back toward the riparian habitat and away from the work area. Because of the sensitivity of the riparian habitat and potential for harming wildlife, the fencing material will not be buried through trenching, but will be weighted down and covered on the inside (toward the work area) with gravel or sand bags such that animals cannot pass underneath the fence and are less able to dig beneath it. In areas where existing development (e.g., pavement or structures) is closer than the top of the levee, the exclusion fence will extend to that limit, and then continue for another 25 feet away from the work area and curl back toward the suitable habitat.

- The limits of the temporary disturbance area adjacent to riparian habitat will be fenced off with orange construction fencing that reaches a height of at least 4 feet. The fencing will be in place prior to and during all construction phases. To prevent rabbits and other ground-dwelling animals from being caught in the orange construction fencing, it will be placed with at least a 1-foot gap between the ground and the bottom of the orange construction fencing.
- Exclusion fencing will be checked weekly by a biological monitor to ensure that it is intact and functioning.
- If a riparian brush rabbit is encountered in a work area, all work will cease immediately. The animal will be allowed to passively move out of the work area and will not be captured unless by an individual authorized by a United States Fish and Wildlife Service biological opinion and a California Department of Fish and Wildlife incidental take permit. United States Fish and Wildlife Service and California Department of Fish and Wildlife will be notified within 24 hours of any observation of riparian brush rabbit.

Appendix E Required Consultation and Concurrence Documentation



State of California • Natural Resources Agency

Gavin Newsom, Governor

**DEPARTMENT OF PARKS AND RECREATION
OFFICE OF HISTORIC PRESERVATION**

Lisa Ann L. Mangat, Director

Julianne Polanco, State Historic Preservation Officer
1725 23rd Street, Suite 100, Sacramento, CA 95816-7100
Telephone: (916) 445-7000 FAX: (916) 445-7053
calshpo.ohp@parks.ca.gov www.ohp.parks.ca.gov

December 19, 2019

VIA EMAIL

In reply refer to: FHWA_2019_1202_001

Mr. Dominic Vitali, Senior Environmental Planner
Caltrans District 10 Environmental Office
PO Box 2048
Stockton, CA 95201

Subject: Determinations of Eligibility for the Proposed Manthey Road over San Joaquin River Bridge Replacement Project, Lathrop, San Joaquin County, CA

Dear Mr. Vitali:

Caltrans is initiating consultation regarding the above project in accordance with the January 1, 2014 *First Amended Programmatic Agreement Among the Federal Highway Administration (FHWA), the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA). As part of your documentation, Caltrans submitted a Historic Property Survey Report (HPSR) and a Historical Resources Evaluation Report (HRER) for the proposed project.

In conjunction with Caltrans and the FHWA, the City of Lathrop proposes to replace the Manthey Road Bridge over the San Joaquin River. A more detailed description of the project and the area of potential effect boundaries are located on pages 1-2 of the HPSR.

Pursuant to Stipulation VIII.C.6 of the PA, Caltrans determined that the following properties are not eligible for the National Register of Historic Places:

- 18424 Queirolo Road
- 18462 Queirolo Road
- 18556 Queirolo Road
- 28 Stewart Road

Caltrans also determined that the Union Pacific Railroad Bridge over the San Joaquin River (P.39-000548) is eligible for the NRHP under Criterion A for its association with

Mr. Vitali
December 19, 2019
Page 2 of 2

FHWA_2019_1202_001

the Transcontinental Railroad and its significance in the area of transportation and economics from 1869 to the end of World War II in 1945.

Based on review of the submitted documentation, I concur.

If you have any questions, please contact Natalie Lindquist at (916) 445-7014 with e-mail at natalie.lindquist@parks.ca.gov or Jeanette Schulz at (916) 445-7031 with e-mail at jeanette.schulz@parks.ca.gov.

Sincerely,

A handwritten signature in blue ink, appearing to be 'J. Polanco', with a horizontal line extending to the right.

Julianne Polanco
State Historic Preservation Officer

Appendix E • Required Consultation and Concurrence Documentation

From: OConnor, Karina
To: Ryan Niblock; Bagde, Abhijit J@DOT; ahakimi@kerncog.org; amarcucci@sierraresearch.com; Andrew Chesley; Mahaney, Ann@DOT; bnapier@kerncog.org; BGiuliani@tularecog.org; BRaymond@kerncog.org; Brenda Veenendaal; De Terra, Bruce W@DOT; Cecilia.Crenshaw@dot.gov; CMARKS@Stancog.org; chay.thao@valleyair.org; Chelsea Gonzales; chris.lehn@co.kings.ca.us; CEchavarria@tularecog.org; Daniel Meza; Deel, David@DOT; Ipps, David T@DOT; Jacobs, Dennis J@DOT; Wade, Dennis@ARB; Diane Nguyen; dylan@maderactc.org; EFlickinger@kerncog.org; ehahn@stancog.org; EWright@tularecog.org; errol.villegas@valleyair.org; ggutierrez@tularecog.org; King, Heather@ARB; iojeda@stancog.org; jack.lord@dot.gov; Hodaly, Jacqueline J@DOT; Perrault, James R@DOT; jfabela@stancog.org; Jeff@maderactc.org; Gray, Jennifer@ARB; Jessica.Fierro@valleyair.org; Jessica.Schlosser@valleyair.org; Taylor, Jonathan@ARB; jstramaglia@kerncog.org; Joseph.Vaughn@dot.gov; Kai Han; Romero, Ken J@DOT; Nguyen, Kevin@DOT; Kim Kloebe; Kristine Cai; Van Valen, La Nae@DOT; Idawson@fresnocog.org; Green, Lilibeth J@DOT; Huv, Lima A@DOT; Lori.Flanders@mcagov.org; Evans, Marcus R@DOT; mtucker@stancog.org; Mortenson, Marilee C@DOT; Marjie.Kim@mcagov.org; MHays@tularecog.org; Matt.Fell@mcagov.org; Melissa Garza; Melody Lin; Navarro, Michael@DOT; Aliabir, Muhamed M@DOT; Muvi Zhou; pat.robledo@dot.ca.gov; patricia@maderactc.org; Marquez, Paul Albert@DOT; Ramirez, Pedro@DOT; macheo@kerncog.org; rball@kerncog.org; Rob Terry; rphips@kerncog.org; RBrady@tularecog.org; Tavitas, Rodney A@DOT; rpark@stancog.org; Samantha.lono@co.kings.ca.us; Scott.Carsen@dot.gov; Christian, Shalanda M@DOT; Tracey, Stephen R@DOT; Suzanne Martinez; Chelsea Gonzales
Subject: RE: Interagency Consultation on PM2.5 & PM10 hot-spot conformity assessment for Manthey Road Bridge Project (Bridge number 29C0127; project number 5456(016)) - EPA and Caltrans Concur requested
Date: Thursday, August 11, 2016 9:39:05 AM

EPA concurs that this is not a project of air quality concern.

Thanks, Karina

Karina OConnor
EPA, Region 9
Air Planning Office (AIR-2)
(775) 434-8176
okonnor.karina@epa.gov

From: Ryan Niblock [mailto:niblock@sjcog.org]
Sent: Wednesday, August 10, 2016 4:56 PM
To: Bagde, Abhijit J@DOT <abhijit.bagde@dot.ca.gov>; ahakimi@kerncog.org; amarcucci@sierraresearch.com; Andrew Chesley <Chesley@sjcog.org>; Mahaney, Ann@DOT <ann.mahaney@dot.ca.gov>; bnapier@kerncog.org; BGiuliani@tularecog.org; BRaymond@kerncog.org; Brenda Veenendaal <brendav@fresnocog.org>; De Terra, Bruce W@DOT <bruce.de.terra@dot.ca.gov>; Cecilia.Crenshaw@dot.gov; CMARKS@Stancog.org; chay.thao@valleyair.org; Chelsea Gonzales <CGonzales@fresnocog.org>; chris.lehn@co.kings.ca.us; CEchavarria@tularecog.org; Daniel Meza <meza@sjcog.org>; Deel, David@DOT <david.deel@dot.ca.gov>; Ipps, David T@DOT <david.ips@dot.ca.gov>; Jacobs, Dennis J@DOT <dennis.jacobs@dot.ca.gov>; Wade, Dennis@ARB <dennis.wade@arb.ca.gov>; Diane Nguyen <nguyen@sjcog.org>; dylan@maderactc.org; EFlickinger@kerncog.org; ehahn@stancog.org; EWright@tularecog.org; errol.villegas@valleyair.org; ggutierrez@tularecog.org; King, Heather@ARB <Heather.King@arb.ca.gov>; iojeda@stancog.org; jack.lord@dot.gov; Hodaly, Jacqueline J@DOT <jacqueline.hodaly@dot.ca.gov>; Perrault, James R@DOT <james.perrault@dot.ca.gov>; jfabela@stancog.org; Jeff@maderactc.org; Gray, Jennifer@ARB <jennifer.gray@arb.ca.gov>; Jessica.Fierro@valleyair.org; Jessica.Schlosser@valleyair.org; Taylor, Jonathan@ARB <jonathan.taylor@arb.ca.gov>; jstramaglia@kerncog.org; Joseph.Vaughn@dot.gov; Kai Han <KHan@fresnocog.org>; OConnor, Karina <OConnor.Karina@epa.gov>; Romero, Ken J@DOT <ken.j.romero@dot.ca.gov>; Nguyendo, Kevin@DOT <Kevin.Nguyendo@dot.ca.gov>; Kim Kloebe <Kloebe@sjcog.org>; Kristine Cai <kcai@fresnocog.org>; Van Valen, La Nae@DOT

<la.nae.van.valen@dot.ca.gov>; ldawson@fresnocog.org; Green, Lilibeth I@DOT
<lilibeth.green@dot.ca.gov>; Huy, Lima A@DOT <lima.huy@dot.ca.gov>; Lori.Flanders@mcagov.org;
Evans, Marcus B@DOT <marcus.evans@dot.ca.gov>; mtucker@stancog.org; Mortenson, Marilee
C@DOT <marilee.mortenson@dot.ca.gov>; Marjie.Kim@mcagov.org; MHays@tularecog.org;
Matt.Fell@mcagov.org; Melissa Garza <MGarza@fresnocog.org>; Melody Lin
<lin@sanjoaquinco.onmicrosoft.com>; Navarro, Michael@DOT <michael.navarro@dot.ca.gov>;
Aljabiry, Muhaned M@DOT <muhaned.aljabiry@dot.ca.gov>; Mui Zhou <mzhou@fresnocog.org>;
pat.robledo@dot.ca.gov; patricia@maderactc.org; Marquez, Paul Albert@DOT <paul-
albert.marquez@dot.ca.gov>; Ramirez, Pedro@DOT <pedro.ramirez@dot.ca.gov>;
rpacheco@kerncog.org; rball@kerncog.org; Rob Terry <RTerry@fresnocog.org>;
rphipp@kerncog.org; RBrady@tularecog.org; Tavit, Rodney A@DOT
<rodney.tavit@dot.ca.gov>; rpark@stancog.org; Samantha.long@co.kings.ca.us;
Scott.Carson@dot.gov; Christian, Shalanda M@DOT <shalanda.christian@dot.ca.gov>; Tracey,
Stephen R@DOT <stephen.tracey@dot.ca.gov>; Suzanne Martinez <SMartinez@fresnocog.org>;
Chelsea Gonzales <CGonzales@fresnocog.org>

Subject: Interagency Consultation on PM2.5 & PM10 hot-spot conformity assessment for Manthey
Road Bridge Project (Bridge number 29C0127; project number 5456(016)) - EPA and Caltrans Concur
requested

Hello Interagency Consultation Partners,

SJCOG is providing the attached PM 2.5/PM 10 Hot-spot Conformity Assessment memo for the
Manthey Road Bridge Project (Bridge number 29C0127; project number 5456(016)) for Interagency
Consultation. As part of the environmental review, it is requested that the Interagency Consultation
Partners concur that the project is not a "Project of Air Quality Concern" (POAQC) and will not result
in new violations of Federal PM 2.5 and PM 10 air quality standards. Please reply to all with
concurrence and/or comments by 5:00 p.m. on August 24, 2016. An interagency conference call will
be held upon request. If you have any questions regarding this e-mail or the attached memo, please
feel free to contact me by phone or email.

Thank you,

Ryan Cordero Niblock
Senior Regional Planner

San Joaquin Council of Governments
555 E. Weber Ave, Stockton, CA 95202
Direct Phone #: (209) 235-0588
E-mail: niblock@sjcog.org

From: [Ryan Niblock](#)
To: [Yoon, Laura](#)
Subject: FW: Interagency Consultation on PM2.5 & PM10 hot-spot conformity assessment for Manthey Road Bridge Project (Bridge number 29C0127; project number 5456(016)) - EPA and FHWA Concur requested
Date: Friday, October 7, 2016 12:38:08 PM

Hi Laura – here is FHWA’s concurrence.

Ryan Cordero Niblock
Senior Regional Planner

San Joaquin Council of Governments
555 E. Weber Ave, Stockton, CA 95202
Direct Phone #: (209) 235-0588
E-mail: niblock@sjcog.org

From: Vaughn, Joseph (FHWA) [mailto:Joseph.Vaughn@dot.gov]
Sent: Monday, October 03, 2016 3:15 PM
To: Ryan Niblock <niblock@sjcog.org>
Subject: RE: Interagency Consultation on PM2.5 & PM10 hot-spot conformity assessment for Manthey Road Bridge Project (Bridge number 29C0127; project number 5456(016)) - EPA and FHWA Concur requested

FHWA concurs that this is not a project of air quality concern.

Joseph Vaughn
Environmental Specialist
FHWA, CA Division
(916) 498-5346

From: Ryan Niblock [mailto:niblock@sjcog.org]
Sent: Thursday, September 29, 2016 7:17 PM
To: Vaughn, Joseph (FHWA); Tavitas, Rodney A@DOT
Subject: RE: Interagency Consultation on PM2.5 & PM10 hot-spot conformity assessment for Manthey Road Bridge Project (Bridge number 29C0127; project number 5456(016)) - EPA and FHWA Concur requested

Hello – it looks like I have another misdirected IAC memo – the PM has confirmed that EPA and FHWA (not Caltrans) concurrence is required. For reference, EPA’s concurrence is attached.

Regards,

Ryan Cordero Niblock
Senior Regional Planner

San Joaquin Council of Governments
555 E. Weber Ave, Stockton, CA 95202
Direct Phone #: (209) 235-0588
E-mail: niblock@sjcog.org

From: Ryan Niblock

Sent: Wednesday, August 10, 2016 4:55 PM

To: Bagde, Abhijit J@DOT <abhijit.bagde@dot.ca.gov>; ahakimi@kerncog.org; amarcucci@sierraresearch.com; Andrew Chesley <chesley@sjcog.org>; Mahaney, Ann@DOT <ann.mahaney@dot.ca.gov>; bnapier@kerncog.org; BGiuliani@tularecog.org; BRaymond@kerncog.org; Brenda Veenendaal <brendav@fresnocog.org>; De Terra, Bruce W@DOT <bruce.de.terra@dot.ca.gov>; Cecilia.Crenshaw@dot.gov; CMARKS@Stancog.org; chay.thao@valleyair.org; Chelsea Gonzales <CGonzales@fresnocog.org>; chris.lehn@co.kings.ca.us; CEchavarria@tularecog.org; Daniel Meza <meza@sjcog.org>; Deel, David@DOT <david.deel@dot.ca.gov>; Ipps, David T@DOT <david.ippo@dot.ca.gov>; Jacobs, Dennis J@DOT <dennis.jacobs@dot.ca.gov>; Wade, Dennis@ARB <dennis.wade@arb.ca.gov>; Diane Nguyen <nguyen@sjcog.org>; dylan@maderactc.org; EFlickinger@kerncog.org; ehahn@stancog.org; EWright@tularecog.org; errol.villegas@valleyair.org; ggutierrez@tularecog.org; King, Heather@ARB <Heather.King@arb.ca.gov>; iojeda@stancog.org; jack.lord@dot.gov; Hodaly, Jacqueline J@DOT <jacqueline.hodaly@dot.ca.gov>; Perrault, James R@DOT <james.perrault@dot.ca.gov>; jfabela@stancog.org; Jeff@maderactc.org; Gray, Jennifer@ARB <jennifer.gray@arb.ca.gov>; Jessica.Fierro@valleyair.org; Jessica.Schlosser@valleyair.org; Taylor, Jonathan@ARB <jonathan.taylor@arb.ca.gov>; jstramaglia@kerncog.org; Joseph.Vaughn@dot.gov; Kai Han <KHan@fresnocog.org>; OConnor.Karina@epamail.epa.gov; Romero, Ken J@DOT <ken.j.romero@dot.ca.gov>; Nguyendo, Kevin@DOT <Kevin.Nguyendo@dot.ca.gov>; Kim Kloebe <kloebe@sjcog.org>; Kristine Cai <kcai@fresnocog.org>; Van Valen, La Nae@DOT <la.nae.van.valen@dot.ca.gov>; ldawson@fresnocog.org; Green, Lilibeth I@DOT <lilibeth.green@dot.ca.gov>; Huy, Lima A@DOT <lima.huy@dot.ca.gov>; Lori.Flanders@mcagov.org; Evans, Marcus B@DOT <marcus.evans@dot.ca.gov>; mtucker@stancog.org; Mortenson, Marilee C@DOT <marilee.mortenson@dot.ca.gov>; Marjie.Kim@mcagov.org; MHays@tularecog.org; Matt.Fell@mcagov.org; Melissa Garza <MGarza@fresnocog.org>; Melody Lin <lin@sanjoaquinco.onmicrosoft.com>; Navarro, Michael@DOT <michael.navarro@dot.ca.gov>; Aljabiry, Muhaned M@DOT <muhaned.aljabiry@dot.ca.gov>; Mui Zhou <mzhou@fresnocog.org>; pat.robledo@dot.ca.gov; patricia@maderactc.org; Marquez, Paul Albert@DOT <paul.albert.marquez@dot.ca.gov>; Ramirez, Pedro@DOT <pedro.ramirez@dot.ca.gov>; rpacheco@kerncog.org; rball@kerncog.org; Rob Terry <RTerry@fresnocog.org>; rhipps@kerncog.org; RBrady@tularecog.org; Tavit, Rodney A@DOT <rodney.tavitas@dot.ca.gov>; rpark@stancog.org; Samantha.long@co.kings.ca.us; Scott.Carson@dot.gov; Christian, Shalanda M@DOT <shalanda.christian@dot.ca.gov>; Tracey, Stephen R@DOT <stephen.tracey@dot.ca.gov>; Suzanne Martinez <SMartinez@fresnocog.org>; Chelsea Gonzales <CGonzales@fresnocog.org>

Subject: Interagency Consultation on PM2.5 & PM10 hot-spot conformity assessment for Manthey Road Bridge Project (Bridge number 29C0127; project number 5456(016)) - EPA and Caltrans Concur requested

Hello Interagency Consultation Partners,

SJCOG is providing the attached PM 2.5/PM 10 Hot-spot Conformity Assessment memo for the Manthey Road Bridge Project (Bridge number 29C0127; project number 5456(016)) for Interagency

Consultation. As part of the environmental review, it is requested that the Interagency Consultation Partners concur that the project is not a "Project of Air Quality Concern" (POAQC) and will not result in new violations of Federal PM 2.5 and PM 10 air quality standards. Please reply to all with concurrence and/or comments by 5:00 p.m. on August 24, 2016. An interagency conference call will be held upon request. If you have any questions regarding this e-mail or the attached memo, please feel free to contact me by phone or email.

Thank you,

Ryan Cordero Niblock
Senior Regional Planner

San Joaquin Council of Governments
555 E. Weber Ave, Stockton, CA 95202
Direct Phone #: (209) 235-0588
E-mail: niblock@sjcog.org



United States Department of the Interior

FISH AND WILDLIFE SERVICE
San Francisco Bay-Delta Fish And Wildlife
650 Capitol Mall
Suite 8-300
Sacramento, CA 95814
Phone: (916) 930-5603 Fax: (916) 930-5654
[http://kira_squires@fws.gov](mailto:kira_squires@fws.gov)



In Reply Refer To:

April 03, 2020

Consultation Code: 08FBDT00-2016-SLI-0155

Event Code: 08FBDT00-2020-E-00336

Project Name: Manthey Road Bridge Replacement Project

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

04/03/2020

Event Code: 08FBDT00-2020-E-00336

1

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

San Francisco Bay-Delta Fish And Wildlife

650 Capitol Mall

Suite 8-300

Sacramento, CA 95814

(916) 930-5603

04/03/2020

Event Code: 08FBDT00-2020-E-00336

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Project Summary

Consultation Code: 08FBDT00-2016-SLI-0155

Event Code: 08FBDT00-2020-E-00336

Project Name: Manthey Road Bridge Replacement Project

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Description: Replace the existing Manthey Road Bridge.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/37.78752174011067N121.30800127974419W>



Counties: San Joaquin, CA

Endangered Species Act Species

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Riparian Brush Rabbit <i>Sylvilagus bachmani riparius</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6189	Endangered

Reptiles

NAME	STATUS
Giant Garter Snake <i>Thamnophis gigas</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

04/03/2020

Event Code: 08FBDT00-2020-E-00336

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Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander <i>Ambystoma californiense</i> Population: U.S.A. (Central CA DPS) There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is final critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Flowering Plants

NAME	STATUS
Large-flowered Fiddleneck <i>Amsinckia grandiflora</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5558	Endangered

04/03/2020

Event Code: 08FBDT00-2020-E-00336

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Critical habitats

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> https://ecos.fws.gov/ecp/species/321#crithab	Final

From: [Kozlowski, Jeff](#)
To: [Ashkar, Shahira](#)
Subject: FW: Caltrans: Manthey Road Bridge Replacement Project, BRLS-5456 (016) (Updating Species List; 4/3/2020)
Date: Friday, April 3, 2020 11:04:17 AM
Attachments: [image001.png](#)

From: Kozlowski, Jeff <Jeff.Kozlowski@icf.com>
Sent: Friday, April 3, 2020 10:43 AM
To: nmfswwcrca.specieslist@noaa.gov
Cc: Kozlowski, Jeff <Jeff.Kozlowski@icf.com>; Samuel.porras@dot.ca.gov
Subject: Caltrans: Manthey Road Bridge Replacement Project, BRLS-5456 (016) (Updating Species List; 4/3/2020)

Good Morning,

On behalf of Caltrans, I am requesting an updated ESA species list for the quad listed below (previous request was submitted by Caltrans on October 31, 2019). Caltrans is the federal lead agency, as designated by FHWA. The City of Lathrop is the project proponent (non-federal lead agency).

Federal Lead Agency:

Samuel Porras
California Department of Transportation
1976 E. Dr. Martin Luther King Jr. Blvd
Stockton, CA 95205
Email: Samuel.porras@dot.ca.gov
Office Phone: (209) 948-3667

Environmental Consultant (Point of Contact for City of Lathrop):

Jeff Kozlowski
ICF
Sacramento, CA
Email: jeff.kozlowski@icf.com
Office Phone: (916) 231-9593

Quad Name **Lathrop**
Quad Number **37121-G3**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -

SRWR Chinook Salmon ESU (E) -

NC Steelhead DPS (T) -

CCC Steelhead DPS (T) -

SCCC Steelhead DPS (T) -

SC Steelhead DPS (E) -

CCV Steelhead DPS (T) - X

Eulachon (T) -

sDPS Green Sturgeon (T) - X

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -

CCC Coho Critical Habitat -

CC Chinook Salmon Critical Habitat -

CVSR Chinook Salmon Critical Habitat -

SRWR Chinook Salmon Critical Habitat -

NC Steelhead Critical Habitat -

CCC Steelhead Critical Habitat -

SCCC Steelhead Critical Habitat -

SC Steelhead Critical Habitat -

CCV Steelhead Critical Habitat - X

Eulachon Critical Habitat -

sDPS Green Sturgeon Critical Habitat - X

ESA Marine Invertebrates

Range Black Abalone (E) -

Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -

Olive Ridley Sea Turtle (T/E) -

Leatherback Sea Turtle (E) -

North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -

Fin Whale (E) -

Humpback Whale (E) -

Southern Resident Killer Whale (E) -

North Pacific Right Whale (E) -

Sei Whale (E) -

Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -

Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH -

Chinook Salmon EFH -

X

Groundfish EFH -

Coastal Pelagics EFH -

Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office

562-980-4000

MMPA Cetaceans -

MMPA Pinnipeds -



Jeff Kozlowski | Senior Fish Biologist <''''''''><

980 9th Street | Suite 1200 | Sacramento | CA 95814

office 916.737.3000 | direct 916.231.9593 | mobile 916.752.0945

Jeff.Kozlowski@icf.com | icf.com

Learn how [ICF makes big things possible for its clients.](#)

From: [Kozlowski, Jeff](#)
To: [Ashkar, Shahira](#)
Subject: FW: Caltrans: Manthey Road Bridge Replacement Project, BRLS-5456 (016) (Updating Species List; 4/3/2020)
Date: Friday, April 3, 2020 11:05:11 AM

From: NMFSWCRCA Specieslist - NOAA Service Account
<nmfswcrca.specieslist+canned.response@noaa.gov>
Sent: Friday, April 3, 2020 10:44 AM
To: Kozlowski, Jeff <Jeff.Kozlowski@icf.com>
Subject: Re: Caltrans: Manthey Road Bridge Replacement Project, BRLS-5456 (016) (Updating Species List; 4/3/2020)

Receipt of this message confirms that NMFS has received your email to nmfswcrca.specieslist@noaa.gov. If you are a federal agency (or representative) and have followed the steps outlined on the California Species List Tools web page (http://www.westcoast.fisheries.noaa.gov/maps_data/california_species_list_tools.html), you have generated an official Endangered Species Act species list.

Messages sent to this email address are not responded to directly. For project specific questions, please contact your local NMFS office.

Northern California/Klamath (Arcata) 707-822-7201

North-Central Coast (Santa Rosa) 707-387-0737

Southern California (Long Beach) 562-980-4000

California Central Valley (Sacramento) 916-930-3600