Stockton Channel Viaduct Bridge Improvements

In San Joaquin County on Interstate 5 in the city of Stockton at the
Channel Viaduct Bridge
10-SJ-5-PM 26.1-27.6
EA 10-0X460 and Project ID 1012000259

Initial Study
with Proposed Mitigated Negative Declaration/ Environmental Assessment and Section 4(f) Evaluation

Prepared by the
State of California Department of Transportation

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 U.S. Code 327 and the Memorandum of Understanding dated December 23, 2016, and executed by the Federal Highway Administration and Caltrans.

December 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 San Joaquin County in California. The document explains why the project is being proposed, the alternatives being considered for the project, 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. The Initial Study with Proposed Mitigated Negative Declaration/Environmental Assessment is accessible online on the Caltrans District 10 website at https://dot.ca.gov/caltrans-near-me/district-10. If you would like a printed version or CD of this document to be sent to your home address, please contact C. Scott Guidi at 209-990-5719 or email him at Scott.Guidi@dot.ca.gov.
- Attend the public information meeting on February 18, 2021
- Tell us what you think. If you have any comments regarding the proposed project, please attend the public meeting and/or send your written comments to Caltrans by the deadline. Submit comments via U.S. mail to: Scott Guidi, Central Region Environmental, California Department of Transportation, 1976 East Doctor Martin Luther King Junior Boulevard, Stockton, California 95205. Submit comments via email to: scott.guidi@dot.ca.gov.
- Submit comments by the deadline: March 4, 2021

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, Caltrans could design and construct all or part of the project.

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

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please write to or call Caltrans, Attention: Scott Guidi, Central Region Environmental, 1976 East Doctor Martin Luther King Junior Boulevard, Stockton, California 95205; 209-990-5719 (Voice), or use the California Relay Service 1-800-735-2929 (TTY), 1-800-735-2929 (Voice), or 711.

10-SJ-5-PM 26.1-27.6
EA 10-0X460 and Project ID 1012000259

Stockton Channel Viaduct Bridge Improvements on Interstate 5 from post miles 26.1 to 27.6 in San Joaquin County

INITIAL STUDY
with Proposed Mitigated Negative Declaration/ ENVIRONMENTAL ASSESSMENT and Section 4(f) Evaluation

Submitted Pursuant to: (State) Division 13, California Public Resources Code (Federal) 42 U.S. Code 4332(2)(C), 23 U.S. Code 138 and 49 U.S. Code 303

THE STATE OF CALIFORNIA
Department of Transportation

Philip Vallejo

Philip Vallejo
Environmental Office Chief, North
California Department of Transportation
NEPA and CEQA Lead Agency

11/30/2020
Date

The following individual can be contacted for more information about this document:

C. Scott Guidi, California Department of Transportation, District 10, 1976 East Doctor Martin Luther King Junior Boulevard, Stockton, California 95205; 209-990-5719

DRAFT
Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

District-County-Route-Post Mile: 10-SJ-5-PM 26.1-27.6

EA/Project Identification: EA 10-0X460 and Project ID 1012000259

Project Description

The California Department of Transportation (Caltrans) proposes to replace or rehabilitate the northbound and southbound Stockton Channel Viaduct Bridges (Bridge Numbers 29-0176L and 29-0176R) in the City of Stockton on Interstate 5 from post miles 26.1 to 27.6.

Determination

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

The proposed project would have no effect on aesthetics, agriculture and forest resources, energy, geology and soil resources, hazards and hazardous materials, land use and planning, mineral resources, population and housing, and wildfire.

The proposed project would have no significant effects on air quality, cultural resources, greenhouse gas emissions, hydrology and water quality, noise, public services, recreation, transportation, tribal cultural resources, and utilities and service systems.

On the basis of this study, it is determined that the proposed action with the incorporation of the identified mitigation measures would not have a significant effect on biological or paleontological resources for the following reasons:

- Compensatory Mitigation—Compensatory conservation measures would be used in the form of Conservation Bank Credits and a Replanting Plan to reduce incidental take due to the loss of Federal Endangered Species Act species or for potential adverse effects to critical habitat.
- Project-Specific Paleontological Mitigation Plan—A qualified principal paleontologist would prepare a project-specific paleontological mitigation plan. Implementation of the project-specific paleontological mitigation plan would ensure the project would not have a significant effect on potential paleontological resources discovered during construction activities.

Philip Vallejo
Environmental Office Chief, North
California Department of Transportation

Date

National Environmental Policy Act (NEPA) Assignment

California participated in the "Surface Transportation Project Delivery Pilot Program" (Pilot Program) pursuant to 23 U.S. Code 327, for more than five years, beginning July 1, 2007, and ending September 30, 2012. MAP-21 (P.L. 112-141), signed by President Barack Obama on July 6, 2012, amended 23 U.S. Code 327 to establish a permanent Surface Transportation Project Delivery Program. As a result, the California Department of Transportation (Caltrans) entered into a Memorandum of Understanding pursuant to 23 U.S. Code 327 (NEPA Assignment MOU) with the Federal Highway Administration. The NEPA Assignment MOU became effective October 1, 2012 and was renewed on December 23, 2016 for a term of five years. In summary, Caltrans continues to assume Federal Highway Administration 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, the Federal Highway Administration assigned, and Caltrans assumed all of the U.S. Department of Transportation 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 the Federal Highway Administration assigned to Caltrans under the 23 U.S. Code 326 CE Assignment MOU, projects excluded by definition, and specific project exclusions.

Summary

The California Department of Transportation (Caltrans) proposes to replace or rehabilitate the northbound and southbound Stockton Channel Viaduct Bridges (Bridge Numbers 29-0176L and 29-0176R) in the City of Stockton on Interstate 5 from post miles 26.1 to 27.6. Caltrans proposes to replace or rehabilitate the existing bridge superstructures, including decks, girders, railings, diaphragms, and expansion joints. The project would also replace or rehabilitate the substructure, including existing abutments, wingwalls, and piers to meet current standards of the American Association of State Highway and Transportation Officials Load Resistance Factor Design.

A proposed rehabilitation alternative (Alternative 1A), estimated to cost $228.2 million and require a two-year construction window (one construction year is equal to 220 working days within a calendar year), would replace the road deck (superstructure), strengthen existing steel girders and lateral bracing, upgrade the substructure of the bridge abutments, and rehabilitate the bridge foundations.

Another proposed rehabilitation alternative (Alternative 2), estimated to cost $341.4 million and require a four-year construction window, would replace the structure above (superstructure) and improve the existing substructure and foundation of the Stockton Channel Viaduct Bridge.

A replacement alternative (Alternative 3), estimated to cost $477.1 million and require a four-year construction window, would require the full replacement of the bridge including the superstructure, substructure, and foundations.

Section 1.4 discusses the three build alternatives and the No-Build Alternative in detail for the proposed project. The following table provides a summary of the results of the environmental studies and shows the potential impacts for each alternative.

Summary of Potential Impacts from Alternatives

Potential Impact	Alternative 1A	Alternative 2	Alternative 3	No-Build Alternative
Land Use—Consistency with the City of Stockton General Plan	Project is consistent with City of Stockton General Plan	Project is consistent with City of Stockton General Plan	Project is consistent with City of Stockton General Plan	No impacts
Land Use—Consistency with the San Joaquin County General Plan	Project is consistent with San Joaquin County General Plan	Project is consistent with San Joaquin County General Plan	Project is consistent with San Joaquin County General Plan	No impacts
Coastal Zone	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts
Wild and Scenic Rivers	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts
Parks and Recreational Facilities	NEPA: No adverse impacts. CEQA: Less than significant impact	NEPA: No adverse impacts. CEQA: Less than significant impact	NEPA: No adverse impacts. CEQA: Less than significant impact	NEPA: No adverse impacts. CEQA: No impacts
Farmlands and Timberlands	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts
Growth	No adverse impacts	No adverse impacts	No adverse impacts	No adverse impacts
Community Character and Cohesion	No adverse impacts	No adverse impacts	No adverse impacts	No adverse impacts
Relocations and Real Property Acquisition—Business Displacements	No adverse impacts: Business displacement of 10 units under airspace lease agreement, and one parcel acquisition for proposed storm basin	No adverse impacts: Business displacement of 10 units under airspace lease agreement, and one parcel acquisition for proposed storm basin	No adverse impacts: Business displacement of 10 units under airspace lease agreement, and one parcel acquisition for proposed storm basin	No adverse impacts
Relocations and Real Property Acquisition—Housing Displacements	No adverse impacts	No adverse impacts	No adverse impacts	No adverse impacts

Potential Impact	Alternative 1A	Alternative 2	Alternative 3	No-Build Alternative
Relocations and Real Property Acquisition—Utility Service Relocation	No adverse impacts	No adverse impacts	No adverse impacts	No adverse impacts
Environmental Justice	No adverse impacts on minority or low-income populations	No adverse impacts on minority or low-income populations	No adverse impacts on minority or low-income populations	No adverse impacts
Utilities and Emergency Services	NEPA: No adverse impacts. CEQA: Less than significant impact	NEPA: No adverse impacts. CEQA: Less than significant impact	NEPA: No adverse impacts. CEQA: Less than significant impact	NEPA: No adverse impacts. CEQA: No impacts
Traffic and Transportation/ Pedestrian and Bicycle Facilities	NEPA: No adverse impacts. CEQA: Less than significant impact	NEPA: No adverse impacts. CEQA: Less than significant impact	NEPA: No adverse impacts. CEQA: Less than significant impact	NEPA: No adverse impacts. CEQA: No impacts
Visual/Aesthetics	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts
Cultural Resources	NEPA: No adverse impacts. CEQA: Less than significant impacts with Standard Measures	NEPA: No adverse impacts. CEQA: Less than significant impacts with Standard Measures	NEPA: No adverse impacts. CEQA: Less than significant impacts with Standard Measures	NEPA: No adverse impacts. CEQA: No impacts
Hydrology and Floodplain	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts	No adverse impacts
Water Quality and Storm Water Runoff	NEPA: No adverse impacts. CEQA: Less than significant impact—best management practices would protect water quality from short-term construction activities	NEPA: No adverse impacts. CEQA: Less than significant impact—best management practices would protect water quality from short-term construction activities	NEPA: No adverse impacts. CEQA: Less than significant impact—best management practices would protect water quality from short-term construction activities	No adverse impacts
Geology, Soils, Seismicity and Topography	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts

Potential Impact	Alternative 1A	Alternative 2	Alternative 3	No-Build Alternative
Paleontology	NEPA: No adverse impacts. CEQA: No impacts	NEPA: Potential adverse impacts from temporary construction activities will be lessened with implementation of paleontology mitigation plan. CEQA: Less than significant impact with paleontology mitigation plan incorporated	NEPA: Potential adverse impacts from temporary construction activities will be lessened with implementation of paleontology mitigation plan. CEQA: Less than significant impact with paleontology mitigation plan incorporated	NEPA: No adverse impacts. CEQA: No impacts
Hazardous Waste and Materials	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts
Air Quality	NEPA: No adverse impacts, CEQA: Less than significant impacts from construction activities	NEPA: No adverse impacts. CEQA: Less than significant impacts from construction activities	NEPA: No adverse impacts. CEQA: Less than significant impacts from construction activities	NEPA: No adverse impacts. CEQA: No impacts
Noise and Vibration	NEPA: No adverse impacts. CEQA: Less than significant impact	NEPA: No adverse impacts. CEQA: Less than significant impact	NEPA: No adverse impacts. CEQA: Less than significant impact	NEPA: No adverse impacts. CEQA: No impacts
Energy	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts
Natural Communities	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts

Potential Impact	Alternative 1A	Alternative 2	Alternative 3	No-Build Alternative
Wetlands and Other Waters	NEPA: No adverse impacts to wetlands, however temporary adverse impacts to Other Waters of the United States. Effects will be mitigated with compensatory actions. CEQA: No impacts to wetlands; however, it would have Temporary Construction Impacts to “Other Waters of the United States” and will be Less than Significant with Mitigation through compensatory actions.	NEPA: No adverse impacts to wetlands, however temporary adverse impacts to Other Waters of the United States. Effects will be mitigated with compensatory actions. CEQA: No impacts to wetlands; however, it would have Temporary Construction Impacts to “Other Waters of the United States” and will be Less than Significant with Mitigation through compensatory actions.	NEPA: No adverse impacts to wetlands, however temporary adverse impacts to Other Waters of the United States. Effects will be mitigated with compensatory actions. CEQA: No impacts to wetlands; however, it would have Temporary Construction Impacts to “Other Waters of the United States” and will be Less than Significant with Mitigation through compensatory actions.	NEPA: No adverse impacts. CEQA: No impacts
Plant Species	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts
Animal Species	NEPA: Temporary adverse impacts from construction activities to special-status fish and animal species. Effects will be lessened with avoidance and minimization measures. CEQA: Less than significant impact with avoidance and minimization measures	NEPA: Temporary adverse impacts from construction activities to special-status fish and animal species. Effects will be lessened with avoidance and minimization measures. CEQA: Less than significant impact with avoidance and minimization measures	NEPA: Temporary adverse impacts from construction activities to special-status fish and animal species. Effects will be lessened with avoidance and minimization measures. CEQA: Less than significant impact with avoidance and minimization measures	NEPA: No adverse impacts. CEQA: No impacts

Potential Impact	Alternative 1A	Alternative 2	Alternative 3	No-Build Alternative
Threatened and Endangered Species	NEPA: Temporary adverse impacts from construction activities to species and habitat. Impacts will be lessened with compensatory mitigation measures. CEQA: Temporary construction impacts, and potential "take" of Federal Endangered Species and Habitat will mitigated to less than significant with compensatory mitigation	NEPA: Temporary adverse impacts from construction activities to species and habitat. Impacts will be lessened with compensatory mitigation measures. CEQA: Temporary construction impacts, and potential "take" of Federal Endangered Species and Habitat will be mitigated to less than significant with compensatory mitigation	NEPA: Temporary adverse impacts from construction activities to species and habitat. Impacts will be lessened with compensatory mitigation measures. CEQA: Temporary construction impacts, and potential "take" of Federal Endangered Species and Habitat will be mitigated to less than significant with compensatory mitigation	NEPA: No adverse impacts. CEQA: No impacts
Invasive Species	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts
Cumulative Impacts	No adverse impacts	No adverse impacts	No adverse impacts	No adverse impacts
Wildfire	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts	NEPA: No adverse impacts. CEQA: No impacts
Climate Change	Less than significant impacts	Less than significant impacts	Less than significant impacts	No impacts

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Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration, is the lead agency under the National Environmental Policy Act (NEPA). Caltrans is also the lead agency under the California Environmental Quality Act (CEQA).

Caltrans proposes to either replace or rehabilitate the Stockton Channel Viaduct Bridges in the City of Stockton on Interstate 5 from post miles 26.1 to 27.6 to meet current American Association of State Highway and Transportation Officials standards for Load Resistance Factor Design.

The project is included in the 2016 State Highway Operations and Protection Program with funding from the Bridge Rehabilitation and Replacement Program. It is included in the San Joaquin County Association of Governments' Federal Transportation Improvement Program under Administrative Modification 9 to the San Joaquin County Association of Governments 2019 Federal Transportation Improvement Program.

1.2 Purpose and Need

The purpose of the project is to ensure the long-term serviceability and structural integrity, and improve the permit load rating, of the Stockton Channel Viaduct Bridges (29-0176L/R) on Interstate 5 in San Joaquin County.

The project is needed because of structural deficiencies and continued bridge repairs. The bridges exhibit concrete and steel superstructure/foundation deficiencies. The deficiencies include a longstanding issue of concrete deck deterioration resulting in ongoing maintenance challenges, freckled rust forming at various locations throughout the superstructure steel elements, damaged steel bracing, and cracking in the concrete retaining walls, bents and columns. Substructure deficiencies, such as soil liquefaction potentially caused by seismic activity, are also prevalent. In addition, the current structures are not rated to accommodate permit loading, which is required for goods movement.

The project must meet a requirement for Independent Utility and Logical Termini. Independent utility, or independent significance, is defined as being a usable and reasonable expenditure even if no additional transportation improvements in the area are made. Logical termini are defined as (1) rational end points for transportation improvement, and (2) rational end points for a review of the environmental impacts. The project's independent utility is the

need to replace or rehabilitate deteriorating existing bridge structures on Interstate 5 and improve the permit loading of the bridges. All the elements that define the project are not dependent on the construction of any other state or federal highway system improvement. This project will stand on its own and has rational start and end points for construction and the environmental study area.

1.3 Project Description

The project lies in San Joaquin County on Interstate 5 from post miles 26.1 to 27.6 over and near the Stockton Deep Water Channel. Total length of the project is 1.6 miles with the bridge work occurring between post miles 26.4 to 27.06. The project's construction limit begins south of the Interstate 5/State Route 4 Separation and ends near the Carlton Avenue Undercrossing structures. Current traffic data indicate the two bridge structures service about 133,000 vehicles a day, of which 19 percent is truck traffic.

Caltrans proposes to replace or rehabilitate the existing Stockton Channel Viaduct bridge structures. The rehabilitation work consists of removing and replacing the bridge decks, railings, diaphragms, and expansion joints, as well as repairing/strengthening steel elements, including girders and later bracing. The replacement work consists of removing and replacing the superstructure, bents/columns, and foundations. In addition, the project would also replace or rehabilitate the existing abutments, wingwalls, and piers to meet current Load Resistance Factor design standards of the American Association of State Highway and Transportation Officials.

Figures 1-1 and 1-2 show the project location and vicinity maps. Figure 1-3 shows the potential construction staging area and additional areas need for equipment and material storage, necessary for the construction of the proposed improvements.

The project considered two other improvements: relocating and replacing the Pershing Avenue off-ramp with a braided structure and constructing a pedestrian and bicycle path structure along the east side of the considered Pershing Avenue off-ramp structure. However, due to funding constraints and the Federal Highway Admistration's assessment that the proposed Pershing off-ramp would increase capacity and thus would be project of air quality of concern, these improvements were not included in this project.

This project contains several standardized project measures that are used in 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 discussed in more detail throughout the document in the Construction Impacts Section found in Chapter 2.

Figure 1-1 Project Vicinity Map

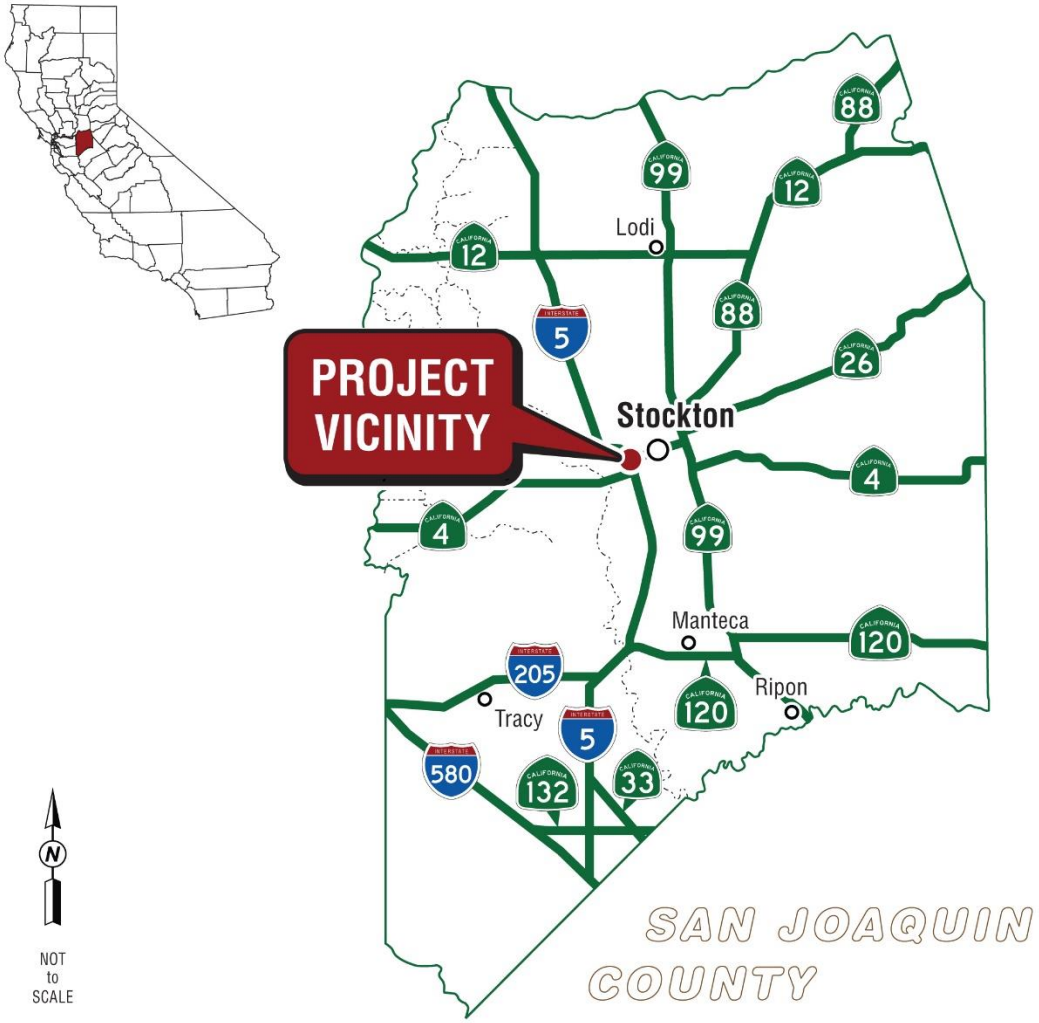


Figure 1-2 Project Location Map

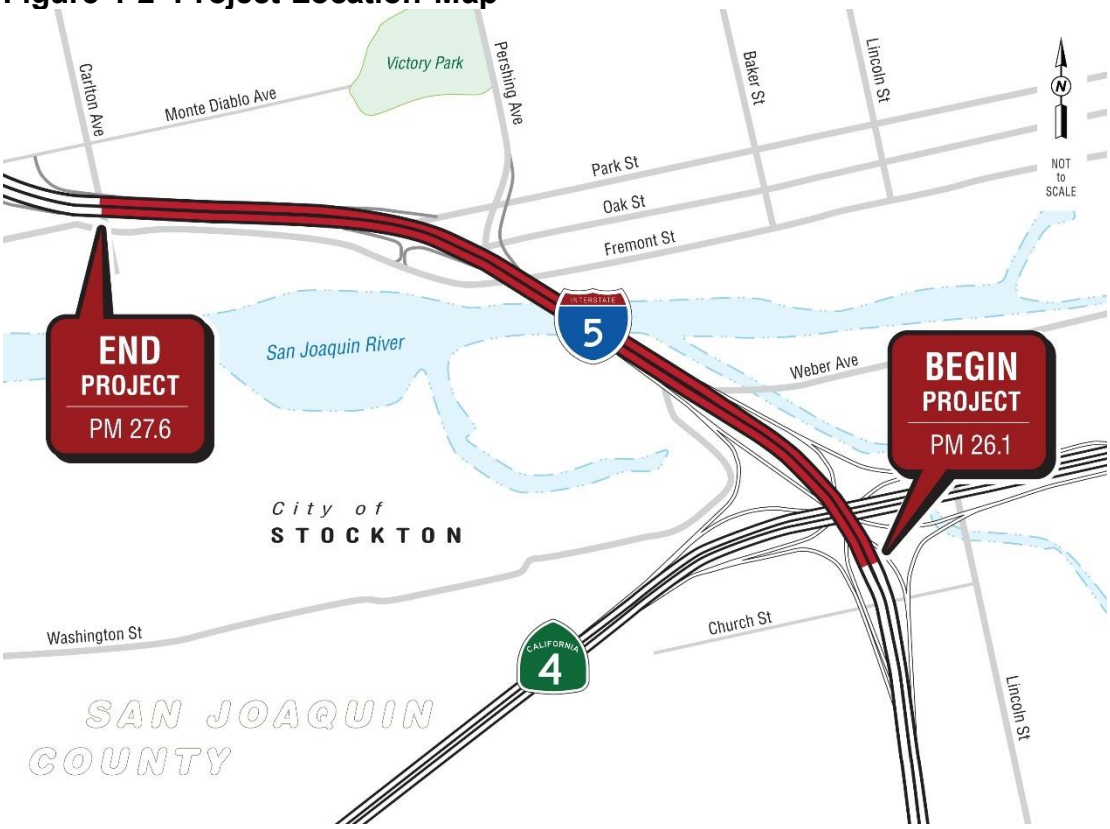
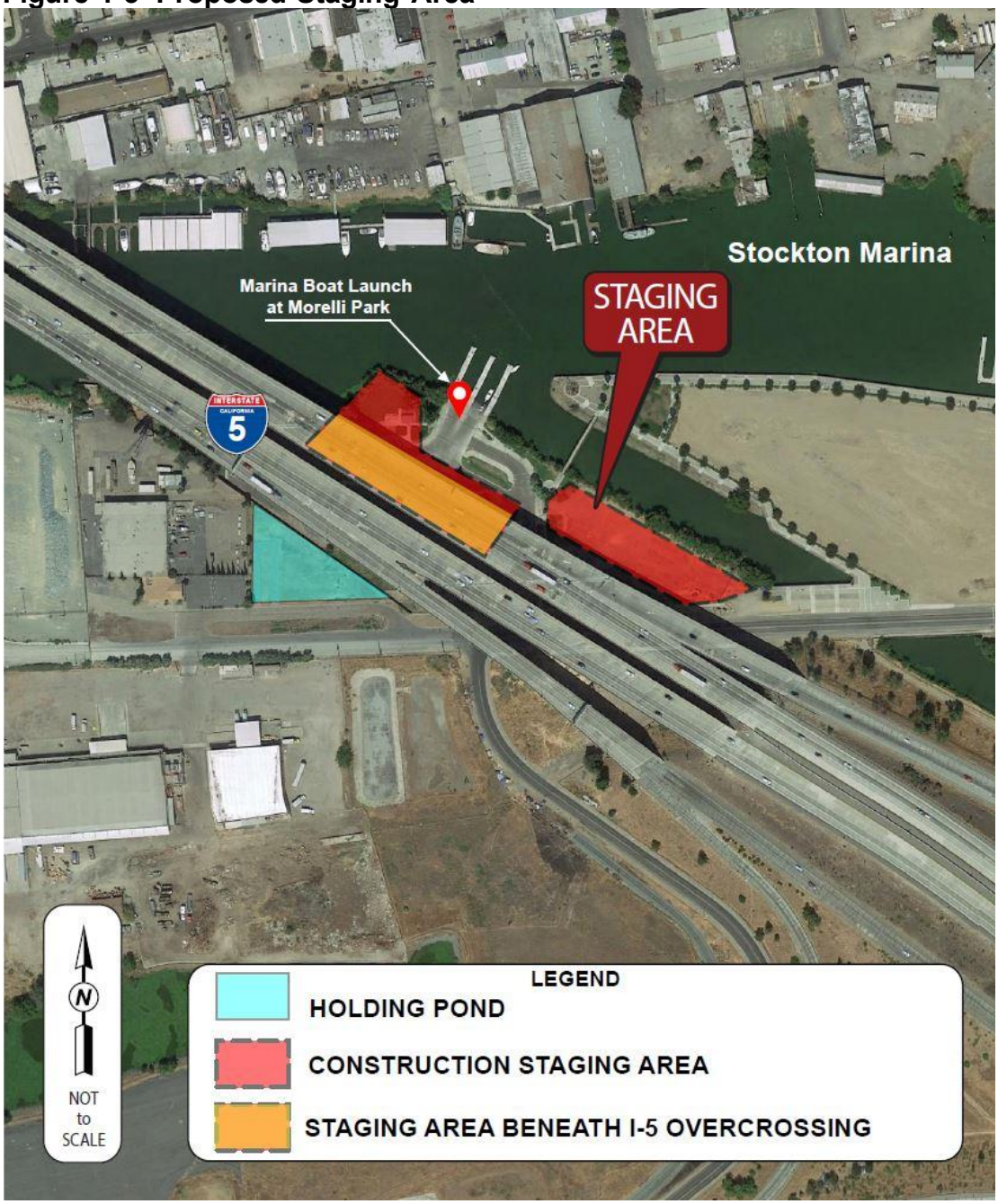


Figure 1-3 Proposed Staging Area



1.4 Project Alternatives

This section describes the proposed action and the project alternatives developed to meet the purpose and need of the project. The alternatives include three build alternatives—Alternative 1A, minimum rehabilitation (not replacing steel girders), Alternative 2, rehabilitation (not replacing steel girders), and Alternative 3, full bridge replacement—as well as the No-Build Alternative. All build alternatives meet the purpose and need of the project

and are environmentally and financially comparable, with Alternative 1A being the least costly and Alternative 3, the costliest.

1.4.1 Build Alternatives—Common Design Features

- All build alternatives would require additional right-of-way and temporary construction easements. The temporary construction easements are required for work along the channel outside the existing state right-of-way. In addition, 7.5 acres of additional temporary construction easements are estimated to be required for constructing the project . Permanent right-of-way acquisition is required for the drainage basin south of the channel on the west side of Interstate 5. For that, 0.9 acre of permanent right-of-way is estimated to be required.
- Structures would be designed to accommodate heavy permitted loads.
- Structures would be designed using Load Resistance Factor Design, Edition 6.
- Bridge deck surfaces would be replaced with normal-weight concrete on Interstate 5 in both directions, including connectors/auxiliary lanes and the structure portion of the Pershing Avenue off-ramp.
- Permanent median closure on the Stockton Channel Viaduct bridge, with concrete barriers, are proposed to maintain acceptable traffic operation along Interstate 5 and the connectors.
- In-water work, including dewatering a section of the Stockton Channel, would occur. A temporary retention basin would be constructed for dewatering discharge.
- Pavement north and south of the Stockton Channel Viaduct bridge structures on Interstate 5, including portions of the existing connectors and ramps, would be replaced.
- Portions of the median barriers and guardrails would be replaced.
- Part of a sound wall atop concrete barriers along the outside of northbound Interstate 5, north of the Stockton Channel, would be replaced.
- Drainage systems would be replaced or modified.
- Tree removal, clearing, and grubbing would occur to accommodate the new off-ramp access point and road approach work.
- A traffic management plan would facilitate traffic operation during construction. Construction is anticipated to involve night work. Night work and temporary lane closures would be required on Interstate 5. Short-term detours for local streets and long-term detours for Interstate 5 would be required.

- A construction staging area has been identified for storage of construction equipment and materials (see Figure 1-3).
- Existing airspace leases for businesses north of the Stockton Deep Water Channel and the City park/boat launch south of the Stockton Channel Deep Water Channel would be suspended or terminated during construction.

Build Alternatives—Differentiating Design Features

Alternative 1A—Minimum Bridge Rehabilitation

Alternative 1A would rehabilitate the existing superstructure and strengthen the substructure elements of the Stockton Channel Viaduct Bridges on Interstate 5. This alternative would improve the structure permit load for up to a 9-axle vehicle.

Work unique to Alternative 1A includes the following:

- Replace portions of the superstructure, which includes the decking (road surface), bridge railings and bearings.
- Rehabilitate portions of the superstructure, which includes strengthening the existing steel girders and steel lateral bracing elements.
- Upgrade the superstructure at the bride abutments and bottom of the bents/columns of the bridge to improve load bearing. Rehabilitation of the abutments include repair of cracks in the wingwalls and retaining walls. Rehabilitation of the foundations include reconstruction of pier caps and reconstruction of the reinforcement from the pier caps connecting the bents and columns.

Alternative 1A would require additional right-of-way for temporary construction easements, which are required for work along the channel outside the existing state right-of-way. Also, an estimated 7.5 acres of temporary construction easements would be required.

These improvements are estimated to cost $228.2 million and require a two-year construction window (one construction window is approximately 220 working days within a calendar year). Alternative 1A is generally believed to provide an estimated 15-year to 20-year service life.

Alternative 2—Bridge Rehabilitation

Alternative 2 would replace the existing superstructure and strengthen the superstructure elements of the Stockton Channel Viaduct Bridge on Interstate 5. This alternative would improve the structure permit load for up to a 15-axle vehicle.

Work unique to Alternative 2 includes the following:

- Replace the superstructure, which includes the decking (road surface), girder (large web beams), railing, bearings, and steel lateral bracing elements.
- Upgrade the substructure at the bridge abutments and bottom of the bents/columns of the bridge to improve load bearing. Rehabilitation of the abutments include repair of cracks in the wingwalls and retaining walls. Rehabilitation of the foundations include reconstruction of pier caps and reconstruction of the reinforcement from the pier caps connecting to the bents/columns.
- Rehabilitation work also includes additional piles at various foundations with either cast-in-drill-holes and/or cast-in-steel-shells piles within and outside the Stockton Deep Water Channel.

These improvements are estimated to cost $341.4 million and require a four-year construction window (one construction year is equal to 220 working days within a calendar year). Alternative 2 is generally believed to provide an estimated 30-year to 50-year service life.

Alternative 3—Bridge Replacement

Alternative 3 would replace both structures of the Stockton Channel Viaduct Bridge on Interstate 5 and replace the Park Street Undercrossing along the Pershing Avenue off-ramp. This alternative would improve the structure permit load for up to a 15-axle vehicle.

Work unique to Alternative 3 includes the following:

- Remove existing structures, and construct bridges for northbound and southbound Interstate 5 and portions of various connector ramps.
- Realign a portion of Weber Avenue beneath and east of the existing bridges, south of the Stockton Deep Water Channel. This would involve removing a portion of Weber Avenue and constructing a new intersection at Washington Street, south of the existing intersection.
- Construct large bents/columns to support the superstructure and connect to the proposed foundations.
- Construct foundations, including cast-in-drilled hole and/or cast-in-steel-shell-piles within and outside the Stockton Deep Water Channel.
- Construct various retaining walls (i.e., concrete walls with foundations and/or mechanically stabilized earthen walls) for retaining embankment due to increase in roadway profile/elevation at the approximate locations as follows:
    - North and south of the structures along Interstate 5
    - Along portions of the State Route 4/Interstate 5 connectors

- Along the entire Pershing Avenue off-ramp, north of the viaduct structure portion
- Along the Fremont Street off-ramp, north of the viaduct structure portion
- Alternative 3 would be built in three stages:

- **Stage 1—Center Span:** This stage would build a new 56-foot-wide center span and construct the paved portions of the median to the north and south of the Stockton Channel Viaduct bridges.
  - Included in this stage would be a portion of the crossover for Stage 2, Phase 1 southbound Interstate 5 to eastbound State Route 4 temporary connector access.
  - This stage would also construct a stormwater basin in the southwest area for dewatering needs.
- **Stage 2—Southbound Interstate 5:** This stage would construct the 62-foot-wide southbound Stockton Channel Viaduct Bridge.
  - Phase 1: Construct Stockton Channel Viaduct Bridge and a portion of roadway north of the bridge.
  - Includes removal and construction of the Fremont Street on-ramp, Fremont Street off-ramp and a portion of the southbound Interstate 5 to State Route 4 connector exit area, and the westbound State Route 4 connector work.
  - Phase 2: Construct the remaining portions of the southbound Interstate 5 roadway south of the Stockton Channel Viaduct Bridge and remove any existing temporary crossover.
  - Phase 3: Construct major portions of the temporary Pershing Avenue off-ramp east of the Interstate 5 sound wall. Construct a portion of the temporary crossover between State Route 4 and northbound Interstate 5.
- **Stage 3—Northbound Interstate 5:** This stage would construct the 62-foot-wide northbound Stockton Channel Viaduct Bridge.
  - Phase 1: Construct the northern portion of the Stockton Channel Viaduct bridge north of the Stockton Deep Water Channel and portions of roadway north of the end of the bridge.
  - Construction includes a retaining wall for the forthcoming sound wall along northbound Interstate 5 north of the bridge.
  - Construction includes placement of signing and striping for the temporary Pershing Avenue off-ramp to be used in Phase 2.
  - Phase 2: Construct the remaining portion of the Stockton Channel Viaduct Bridge over and south of the Stockton Deep Water Channel and roadway portion of the State Route 4 to Interstate 5 connector.

- Phase 3: Construct all remaining work:

  Construct the northbound interstate roadway portions south of the bridge.

  Remove the temporary crossover used in Phase 1.

  Construct the sound wall and barrier along Interstate 5, north of the bridge.

  Remove the temporary Pershing Avenue off-ramp.

  Construct the new Weber Avenue realignment.

- For Alternative 3 only, design options have been submitted with two options for the final Pershing Avenue off-ramp:
  - Option 1: The Stockton Channel Viaduct Bridge would end at its current location, and the existing retaining wall would be used to tie into the existing Park Street Undercrossing for the Pershing off-ramp and roadway.
  - Option 2: Extend the Stockton Channel Viaduct Bridge to the north side of Park Street, removing existing retaining walls and/or embankment between Oak Street and Park Street, and the Park Street Undercrossing is replaced with bridge extensions. New columns and foundations would need to be constructed.

These improvements are estimated to cost $477.1 million and require a four-year construction window. Alternative 3 would provide an estimated 75-year service life.

1.4.2 **No-Build (No-Action) Alternative**

Under the No-Build Alternative, Caltrans would not improve the Stockton Channel Viaduct Bridge. This alternative would not meet the purpose and need because the bridge would remain unchanged and the structural integrity of the structures would not improve.

1.5 Comparison of Alternatives

Three build alternatives are proposed for the Stockton Channel Viaduct Bridge, in addition to a No-Build Alternative, as identified in this Initial Study/Environmental Assessment. A comparison of the environmental effects for the proposed project is provided in the Summary Table at the beginning of this document.

Alternative 1A has the least environmental impacts and cost, shortest construction schedule. Alternative 2, which in addition to Alternative 1A's scope of work, includes proposed new steel girders and additional foundation work, involves more environmental impacts, additional cost, a longer

construction schedule than Alternative 1A Alternative 3 has the most environmental impacts, highest cost, longest construction schedule. For environmental impacts, Alternatives 2 and 3 are similar except for two elements: Relocations and Real Property Acquisition/Utility and Service Relocation and impacts to the waterway (Stockton Deep Water Channel). Detailed discussions of the environmental impacts from both build alternatives are provided in Chapters 2 and 3.

For cost and construction schedule, respectively, for each alternative, Alternative 1A is estimated at $228.2 million and 2 years; Alternative 2 is estimated at $341.4 million and 4 years; and Alternative 3 is estimated at $477.1 million and 4 years.

After the public circulation period for this document, all comments would be considered, and Caltrans would select a preferred alternative and make the final determination of the project's effect on the environment. Under the California Environmental Quality Act (CEQA), if no unmitigable significant adverse impacts are identified, Caltrans would prepare a Negative Declaration or Mitigated Negative Declaration.

Similarly, if Caltrans, as assigned by the Federal Highway Administration, determines the National Environmental Policy Act (NEPA) action does not significantly impact the environment, Caltrans would issue a Finding of No Significant Impact.

1.6 Alternatives Considered but Eliminated from Further Discussion

This section discusses an alternative considered but eliminated from further discussion because it did not meet the purpose and need of the project.

Alternative 1: Bridge Deck Replacement with New Lightweight Deck—This alternative would have replaced the existing lightweight reinforced concrete bridge deck on both the left and right structures with a new lightweight concrete deck. This improvement would have provided an estimated less-than-30-year service life. Seismic improvements and possible strengthening would have been considered as appropriate. Spot preparation and painting of all steel elements would have also been included.

This alternative did not address the structures' inability to handle desired permitted load capacities for interstate travel. For this reason, the alternative was eliminated from further study and consideration.

1.7 Permits and Approvals Needed

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

Agency	Permit/Approval	Status
U.S. Fish and Wildlife Service	Biological Opinion for Section 7 consultation for federally listed threatened and endangered species	Formal consultation would be completed before the completion of the final environmental document.
National Marine Fisheries Service	Biological Opinion for Section 7 consultation for federally listed threatened and endangered species	Formal consultation would be completed before the completion of the final environmental document.
California Department of Fish and Wildlife	Fish and Game Code Section 1602 Lake and Streambed Alteration Agreement. Section 2081 (b) and (c) Incidental Take Permit.	An application for the Section 1602 Streambed Alteration Agreement and Section 2081 (b) and (c) Incidental Take Permits would be submitted during the design phase of the project.
Regional Water Quality Control Board	Clean Water Act Section 401 Water Quality Certification	An application for Section 401 Certification would be submitted during the design phase of the project.
U.S. Army Corps of Engineers	Clean Water Act Section 404 Permit	An application for Section 404 Permits would be submitted during the design phase of the project.
U.S. Coast Guard	Bridge Permit	An application for a bridge permit would be submitted during the design phase of the project.

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. So, there is no further discussion of these issues in this document.

- Coastal Zone: The project is outside the coastal zone; therefore, the Coastal Zone Management Act would not apply. (Caltrans Coastal Commission)
- Wild and Scenic Rivers: Review of the U.S. Fish and Wildlife Service, National Wild and Scenic River System Map, showed that there are no wild and scenic rivers within or near the project area. (U.S. Fish and Wildlife Service)
- Farmland: No farmlands are within the project study area. (Farmland Mapping and Monitoring Program)
- Timberland: No timberlands are within the project study area. The project is within the Sacramento-San Joaquin Delta region, specifically within the city limits of the City of Stockton. (City of Stockton General Plan 2040)
- Growth: The project is consistent with the San Joaquin Council of Governments' Regional Transportation Plan/Sustainable Communities Strategy and the City of Stockton General Plan 2040. The project would not influence growth beyond the expected goals in those plans. (City of Stockton General Plan 2040)
- Community Character and Cohesion: There are no expected impacts to community character and cohesion. Additionally, construction effects that occur within sensitive receptors would be avoided and minimized through Best Management Practices and project features. (Community Impact Assessment Memorandum, June 2020)
- Environmental Justice: No minority or low-income populations were identified that would be adversely affected by the proposed project. All three build Alternatives are a replacement in kind of an existing structure and would not cause disproportionately high and adverse effects on any minority or low-income populations in accordance with the provisions of Executive Order 12898. (Community Impact Assessment Memorandum, June 2020)

- Aesthetics/Visual: It was determined that the project would have no significant impacts on the scenic qualities of the resources in the project study area. According to the Scenic Resource Evaluation, visual impacts would be insignificant and temporary with the use of the standard measures, Best Management Practices, standard special provisions, and non-standard special provisions that are common in all of Caltrans' construction contracts. Section 2.4, Construction Impacts describes these measures in detail. (Scenic Resource Evaluation, July 2020)
- Hydrology and Floodplain: According to the Location Hydraulic Study and Summary Floodplain Encroachment Report, it was determined that the project would have no adverse impacts on Stockton Deep Water Channel, so no significant impacts on the base floodplain would occur. Temporary impacts caused by project construction would be managed through the standard measures, Best Management Practices, standard special provisions, and non-standard special provisions that are common in all of Caltrans' construction contracts. Section 2.4, Construction Impacts describes these measures in detail.(Location Hydraulic Study, February 2019)
- Water Quality and Stormwater Runoff: According to the Water Quality Assessment Report, project construction would have temporary, insignificant impacts to water quality and stormwater runoff with the use of the standard measures, Best Management Practices, standard special provisions, and non-standard special provisions that are common in all of Caltrans' construction contracts. Section 2.4, Construction Impacts describes these measures in detail. (Water Quality Assessment Report, July 2020)
- Geology, Soils, Seismicity, and Topography: According to the Seismic Design Recommendation Report, the project would have temporary, insignificant impacts to geology, soils, seismicity, and topography with the use of the standard measures, Best Management Practices, standard special provisions, and non-standard special provisions that are common in all of Caltrans' construction contracts. Section 2.4, Construction Impacts describes these measures in detail. (Seismic Design Recommendation Report, April 2019)
- Hazardous Waste and Materials: According to the Hazardous Waste Initial Site Assessment, the project would have no significant impacts on hazardous waste and materials. Temporary impacts caused by project construction would be managed through the use of the standard measures, Best Management Practices, standard special provisions, and non-standard special provisions that are common in all of Caltrans' construction contracts. Section 2.4, Construction Impacts describes these measures in detail. (Hazardous Waste Initial Site Assessment, August 2020)

- Plant Species: No special-status plant species were found in the project area. Therefore, the project would not impact special-status plant species. (Natural Environment Study, 2020)
- Natural Communities: No natural communities were identified within the project's environmental study limits. Therefore, the project would not impact natural communities. (Natural Environment Study, 2020)
- Wildfire: A review of the California Department of Forestry and Fire Protection's Fire Hazard Severity Zones Map for San Joaquin County shows the project location is not in a high risk area for wildfires.
- This project has several 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 discussed in more detail in Section 2.4, Construction Impacts.

2.1 Human Environment

2.1.1 Existing and Future Land Use

Affected Environment

The City of Stockton adopted its general plan in 2017. A general plan update was released in December 2018.

The project study area, within the boundary of the City of Stockton, consists of a mix of high-density residential, commercial, industrial, and recreational land uses. Most recreational land uses occur at the Stockton Deepwater Channel, where Interstate 5 and State Route 4 meet. The larger downtown area features a mix of commercial and residential neighborhoods. This mix of uses is consistent with the updated general plan, which allows substantial amounts of high-density residential and commercial uses in downtown Stockton.

Future land use in the Stockton area is following a regional trend toward more residential and commercial development where there is currently open land designated for agriculture. Large residential development projects are planned at the edge of the city limits. However, in the downtown core, within the Stockton Channel Viaduct Bridge Improvement project area there are infill opportunity sites that have been identified. The proposed project is included in the City of Stockton General Plan and the San Joaquin Council of Governments' Regional Transportation Plan/Sustainable Communities Strategy documents. The existing land use for the City of Stockton located within the project area is general industrial and commercial with low, medium, and high-density residential units located noth and east of the project.

Environmental Consequences

No-Build Alternative

Under the No-Build Alternative, the Stockton Channel Viaduct Bridge would not be improved. The traffic Level of Service, as defined in the Traffic Operations Memorandum, dated April 12, 2018, and circulation would not be improved, and existing conditions would continue to degrade. The Level of Service is a qualitative measure used to describe the traffic flow condition. Letters designate each level of traffic operation, from A to F, with A representing the best level and F the worst. The No-Build Alternative would not support the goal of the San Joaquin County General Plan to not conflict with an applicable congestion management program system.

Under the No-Build Alternative, bridge structural deficiencies along Interstate 5 would not be addressed and not meet the purpose and need for this project.

All Alternatives

Under all three build alternatives, the project would improve the Stockton Channel Viaduct Bridge deficiencies along Interstate 5 to improve mobility and meet the permitted load rating. Under all three build alternatives, no residential displacements would occur. However, one parcel would be required, and two state-owned airspaces would displace business tenants. The right-of-way required for the build alternatives would include a portion of a parcel next to Interstate 5 and the airspace parcels under the existing Stockton Channel Viaduct Bridges on Fremont Street. The land uses of the parcels impacted include recreation and commercial uses.

All three build alternatives would not result in any substantial land-use changes within the project corridor and would not hinder recreational or commercial operations in the project vicinity.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures are required to address existing and future land use.

2.1.2 Consistency with State, Regional, and Local Plans and Programs

This section discusses the project's consistency with state, regional, local plans and programs with regard to the various land-use plans.

Affected Environment

The City of Stockton adopted its general plan in 2017. A general plan update was released in December 2018. The project study area, within the boundary of the City of Stockton, consists of a mix of lower-density residential, commercial, industrial, and recreational land uses. Most recreational land uses occur at the Stockton Deep Water Channel, where Interstate 5 and State Route 4 meet. The larger downtown area features a mix of commercial

and residential neighborhoods. This mix of uses is consistent with the updated general plan, which allows substantial amounts of high-density residential and commercial uses in downtown Stockton. Future land use in the Stockton area is following a regional trend toward more residential and commercial development where there is currently open land designated for agriculture. Large residential development projects are planned at the edge of the city limits. However, there are sites designated as infill opprotunities sites within the downtown core, located within the Stockton Channel Viaduct Bridge Improvement Project.

The project is included in the City of Stockton General Plan and the San Joaquin Council of Governments' Regional Transportation Regional Transportation Plan/Sustainable Communities Strategy. The project is consistent with the City of Stockton General Plan's measure to promote the safe transport of goods along the Interstate Route 5 corridor, promoting economic vitality within the region.

The project would support the goal of the San Joaquin County General Plan to maintain a safe, efficient, and cost-effective roadway system for goods and people.

Environmental Consequences

Under the Build and No-Build Alternatives, the land use in the project area would remain the same.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization and/or mitigation measures were identified for the project.

2.1.3 Parks and Recreational Facilities

This section is based on the Community Impact Assessment, June 2020 Memorandum.

Regulatory Setting

The Park Preservation Act (California Public Resources Code Sections 5400-5409) prohibits local and state agencies from acquiring any property which is in use as a public park at the time of acquisition unless the acquiring agency pays sufficient compensation or land, or both, to enable the operator of the park to replace the park land and any park facilities on that land.

Affected Environment

The following community parks and recreational areas are near the project, but no use or impacts would occur:

- Victory Park—about 0.34 mile from the project location.

- Weber Point—about 0.54 mile from the project location.
- North Seawall Park—about 0.62 mile from the project location.
- Stockton Deep Water Channel—next to the project location.

A publicly owned community park—Morelli Park Boat Launch at 1025 West Weber Avenue in Stockton—sits under the Stockton Channel Viaduct Bridges. The park is currently under lease to the City of Stockton through Caltrans. Morelli Park features picnic benches, walking paths, a restroom, and a parking lot. Morelli Park also provides one of several boat launch ramps found within Stockton. The boat launch facility consists of a four-lane boat ramp.

The above recreational resources are in an urbanized area of Stockton and currently experience noise from existing transportation facilities. Urbanized features, such as buildings, transient activity, and freeways, are visible from within the park. Additionally, a Class 1 -bike path occurs along Weber Avenue next to the project study area.

Environmental Consequences

Under the build alternatives, Morelli Park closure would result in the use of a Section 4(f) resource. Morelli Park is eligible for protection under Section 4(f) because it is publicly owned, open to the public, and its main use is recreation, specifically boating.The park, boat launch, and parking area would be closed and would be used for staging and storage of construction equipment and materials. Caltrans expects that a temporary construction easement would be necessary for a minimum of three to four construction seasons (660 to 880 days). Caltrans has consulted with the City of Stockton, which is the official agency with jurisdiction over the park. For Section 4(f), the de minimis impact finding is discussed in Appendix A..

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures beyond the listed Best Management Practices and standard practices described in Section 2.4, Construction Impacts, would be proposed to address parks and recreational facilities.

2.1.4 **Relocations and Real Property Acquisition**

Regulatory Setting

The 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 because of a transportation project are treated fairly, consistently, and equitably so that such persons will not suffer disproportionate injuries

because of projects designed for the benefit of the public. See Appendix C for a summary of the relocation benefits.

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

Affected Environment

Temporary construction easements would be needed for staging construction equipment at Morelli Park, under the bridge on Fremont Street, and next to the existing right-of-way within the Stockton Channel on both sides of Interstate 5. A permanent acquisition would be needed for the proposed water retention basin at 1245 West Weber Avenue, which is next to the Stockton Channel Viaduct Bridge structures (see Figure 2-1, Retention Basin Location).

Figure 2-1 Retention Basin Location

Per the June 2020 Community Impact Assessment, the project would remove buildings directly below the existing bridge structure at the north end of Fremont Street and Pershing Avenue. The land that would be affected is currently operating under an airspace lease agreement for existing businesses. An airspace area of about 72,070 square feet and an airspace area of about 72,463 square feet are existing state-owned properties with commercial and recreational land uses. (San Joaquin County, 2018)

Environmental Consequences

Under all three build alternatives, the airspace areas would be impacted by construction activities. Businesses currently under the airspace lease

agreement 10 business units would be displaced. In general, a business under an airspace lease agreement is not subject to relocation benefits. The build alternatives would not result in land-use changes within the project area and would not hinder recreational or commercial operations near the project.

For any person(s) whose real property interests may be impacted by the project, the acquisition of those property interests would comply fully with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. The act is a federally mandated program that applies to all acquisitions of real property or displacements of persons resulting from federal or federally assisted programs or projects. It was created to provide for and ensure the fair and equitable treatment of all such persons (see Appendix C, Summary of Relocation Benefits).

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures are required for relocations and right-of-way acquisitions.

2.1.5 Utilities and Emergency Services

Affected Environment

The following utilities were identified within the proposed project area:

- California Water Service waterlines
- City of Stockton sewer lines and storm drain lines
- Pacific Gas and Electric Company gas lines and electrical lines
- American Telephone and Telegraph communication lines and telephone lines.

Environmental Consequences

Impacts on the utilities identified within the project area were summarized within two main areas—the north side and the south side of the Stockton Deep Water Channel. The estimated impacts on utilities on each side of the Stockton Channel were identified under each alternative.

North Side of the Stockton Deep Water Channel

- California Water Service's waterlines and valves were identified at two locations—along the south side of Park Street and the west side of Pershing Avenue. For Alternatives 1A and 2, about 150 feet of waterlines would be affected due to the temporary off-ramp work. For Alternative 3, about 300 feet of waterlines would be affected along the Park Street undercrossing and intersection. Additionally, about 100 feet of waterlines would be affected along the south side of Fremont Street beneath the Stockton Channel Viaduct Bridge.

- The City of Stockton's storm drain lines were identified at two locations. For Alternatives 1A and 2, about 150 feet of storm drain lines would be affected due to temporary off-ramp and at the intersection Park Street and across Pershing Avenue. For Alternative 3, about 300 feet of storm drain lines would be affected at the Park Street undercrossing and across Pershing Avenue. Additionally, about 140 feet of storm drains lines would be affected east of the Pershing Avenue off-ramp, south of Oak Street, and north of Fremont Street, within the state right-of-way leased airspace.
- The Pacific Gas and Electric Company's gas lines were identified within the project area. Under Alternative 3, about 250 feet of gas lines would be affected along Park Street, across Pershing Avenue. Under all three alternatives, the Pacific Gas and Electric Company's electrical lines were identified and would be affected. About 600 feet of electrical lines and two vault boxes would be affected along the north side of Fremont Street and along the east side of the Pershing Avenue off-ramp, north of Fremont Street.
- The American Telephone and Telegraph overhead telephone lines were identified within the proposed project area and would be affected. Under all three alternatives, about 120 feet of overhead telephone lines were identified within a state-owned right-of-way, east of the Pershing Avenue off-ramp, north of Oak Street, and south of Park Street. They included two telephone poles. About 300 feet of underground telephone lines were identified within the state-owned right-of-way airspace leases. Additionally, 130 feet of underground telephone lines would be affected east of the Pershing Avenue off-ramp, north of Fremont Street, and north of the Stockton Deep Water Channel. Under Alternative 3, about 70 feet of underground telephone lines would be affected east of the Pershing Avenue off-ramp, south of Oak Street, and north of Fremont Street.

South Side of the Stockton Deep Water Channel

- California Water Service's waterlines and the City of Stockton's fire hydrants were identified within the area along the north side of Weber Avenue. For Alternatives 1A and 2, about 700 waterlines and three fire hydrants would be affected by the project's retrofit work and new drainage basin on the west side of Interstate 5, south of the Stockton Channel. For Alternative 3, about 1,200 feet of waterlines and five fire hydrants would be affected by the Stockton Channel Viaduct bridge removal, replacement work, and new drainage basin.
- The City of Stockton's storm drains were identified within the project area. For Alternative 3, about 600 feet of storm drains would be affected along the south side of Weber Avenue for the bridge removal and replacement work for bent number 2. Bents are a combination of a bridge cap and pile that when put together supports the entire bridge

  The City of Stockton's sewer lines at Morelli Park would be affected. For Alternatives 1A and 2, about 300 feet of sewer lines would be affected by

the bridge retrofit work within Morelli Park and existing bridge supports. For Alternative 3, about 600 feet of sewer lines would be affected for the bridge replacement within Morelli Park and new bent construction.

- The Pacific Gas and Electric Company's gas lines were identified within the area and would be affected. Under Alternative 3, about 700 feet of gas lines would be affected along the south side of Weber Avenue due to new bent construction, foundation work, and realignment of Weber Avenue.

  The Pacific Gas and Electric Company's electrical lines were identified along north and south of Weber Avenue, and within Morelli Park. For Alternatives 1A and 2, about 300 feet of electrical lines would be affected by bridge retrofit work within Morelli Park and existing bents. Electrical lines along north and south Weber Avenue would be affected. For Alternative 3, about 1,500 feet of electrical lines would be affected due to bridge replacement work within Morelli Park, new bent construction, and realignment of Weber Avenue.
- The American Telephone and Telegraph's underground telephone lines were identified within the area. There are about 1,300 feet of underground telephone lines within a state-owned right-of-way. For Alternatives 1A and 2, relocation of the telephone lines would be within existing Weber Avenue. For Alternative 3, relocation of the telephone lines would be within the proposed realignment of Weber Avenue, south of the existing Weber Avenue.

Emergency Services

Under all three build alternatives, the project would not affect emergency services. Impacts from detours and temporary road closures would affect emergency within the project area during construction. Traffic detours are discussed in Section 2.1.6, Traffic and Transportation/Pedestrian and Bicycle Facilities. Coordination with emergency service providers would be implemented per the traffic management plan.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures have been identified at this time. A utility relocation plan would be developed during the plans, specifications, and estimates phase for the project. Emergency services concerns would be addressed in the traffic management plan, which would be developed during the plans, specifications, and estimates phase of the project.

2.1.6 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 U.S. Department of Transportation issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally assisted programs is governed by the U.S. Department of Transportation regulations (49 Code of Federal Regulations Part 27) implementing Section 504 of the Rehabilitation Act. (29 U.S. Code 794) The Federal Highway Administration has enacted regulations for the implementation of the 1990 Americans with Disabilities Act (ADA), 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

Traffic and Transportation

A traffic operations analysis was completed in April 2018 for the proposed improvements to the Stockton Channel Viaduct Bridge Improvement Project from westbound State Route 4 to northbound Interstate 5. The Caltrans District 10 Travel Forecasting Branch provided traffic data for the existing year 2017, opening year 2025, and design year 2045 under the assumption that traffic is operating at an acceptable Level of Service (Traffic Operations Memorandum, April 2018)

Within the project location, the current Level of Service, as defined in the Traffic Operations Memorandum, dated April 12, 2018, is rated D, which is considered poor. The Level of Service is a qualitative measure used to describe the traffic flow condition. Letters designate each level of traffic operation, from A to F, with A representing the best level and F the worst.

The project location is on Interstate 5, which is a major north-south interstate freeway and functions as the main transportation route in San Joaquin County. Interstate 5 runs through the western portion of the City of Stockton, providing four travel lanes in each direction through the central portion of Stockton. The Stockton Channel Viaduct Bridges 29-0176L and 29-0176R carry the southbound and northbound Interstate 5 lanes and span the Stockton Channel. These two bridges are commonly referred to as the Stockton Channel Viaduct Bridges.

Existing Operational Analysis

The spot location analysis confirmed that delay and associated Level of Service exceed Caltrans standards (Level of Service D or lower) at all locations during the evening peak hours. The traffic weaving along northbound Interstate 5 between the connector and Pershing Avenue creates stop-and-go traffic with queues extending east of the State Route 4 and El Dorado interchange during morning peak hours of 7:00 a.m. to 9:00 a.m. and the evening peak hours of 4:00 p.m. to 6:00 p.m.

An intersection analysis determined that the morning and evening peak hour operations operate within an acceptable Level of Service, and the delay for the northbound Interstate 5 and Monte Diablo off-ramp is acceptable. The corridor analysis determined the morning peak hours operate more efficiently than the evening peak hours within the project study area (see Table 2.1).

Table 2.1 Current Year 2017 Measure of Effectiveness

Measure of Effectiveness	Existing Morning Peak Hours (7:00 a.m. to 9:00 a.m.)	Existing Evening Peak Hours (4:00 p.m. to 6:00 p.m.)
Travel Time	155 Vehicles Per Hour	658 Vehicles Per Hour
Vehicle Miles Traveled	10,836 Miles	12,772 Miles
Average Speed (Miles Per Hour)	70 Miles Per Hour	50 Miles Per Hour
Average Density (Level of Service)	Level of Service B	Level of Service D
Gasoline Consumed (Gallons)	726 Gallons	976 Gallons

Source: Caltrans Operations Analysis (April 2018).

Design Year 2025 Operational Analysis

Design year 2025 analysis was performed to determine the projected open-to-traffic operations at and next to the northbound Interstate 5 and State Route 4 connector within the project study area. The morning and evening peak period volumes were analyzed during and outside the high occupancy lane windows to determine the worst-case scenario.

The spot location analysis found significant delays and congestion happen during the evening peak hours between the connector and Pershing Avenue off-ramp along northbound Interstate 5. The delay and associated Level of Service surpass Caltrans standards (Level of Service D or lower) in the project study area during the evening peak hours.

The corridor analysis projected that the morning peak hours operate more efficiently than evening peak hours in the project study area (see Table 2.2).

Table 2.2 Opening Year 2025 Measure of Effectiveness

Measure of Effectiveness	Opening Year Morning Peak Hours (7:00 a.m. to 9:00 a.m.)	Opening Year Evening Peak Hours (4:00 p.m. to 6:00 p.m.)
Travel Time	196 Vehicles Per Hour	1,339 Vehicles Per Hour
Vehicle Miles Traveled	13,545 Miles	14,348 Miles
Average Speed (Miles Per Hour)	69 Miles Per Hour	29 Miles Per Hour
Average Density (Level of Service)	Level of Service B	Level of Service E
Gasoline Consumed (Gallons)	803 Gallons	1,243 Gallons

Source: Caltrans Operational Analysis (April 2018).

Design Year 2045 Operational Analysis

The design year 2045 without project analysis was performed to determine the design year traffic operations at and next to the northbound Interstate 5 and State Route 4 connectors within the project study area and with the existing lane configurations. The morning and evening peak period volumes were analyzed during and outside the high occupancy lane operation windows to determine the worst-case scenario.

The spot location analysis projected that significant delays and congestion would occur during the morning and evening peak hours between the connector and Pershing Avenue along northbound Interstate 5. The delay and associated Level of Service exceed Caltrans standards (Level of Service D or lower) at all locations during the morning and evening peak hours. The evening peak hour delay is expected to exceed the acceptable delay threshold of 35 seconds (Level of Service D) to 36 seconds (Level of Service E), lowering its Level of Service. The corridor analysis projects the morning peak hours would be acceptable. However, the evening peak hour operations for the corridor are projected to fall below Caltrans' standards (see Table 2.3). No additional planned project is projected to ease this congestion.

Table 2.3 Design Year 2045 Measure of Effectiveness

Measure of Effectiveness	Design Year Morning Peak Hours (7:00 a.m. to 9:00 a.m.)	Design Year Evening Peak Hours (4:00 p.m. to 6:00 p.m.)
Travel Time	920 Vehicles Per Hour	3,778 Vehicles Per Hour
Vehicle Miles Traveled	15,700 Miles	13,479 Miles
Average Speed (Miles Per Hour)	50 Miles Per Hour	14 Miles Per Hour
Average Density (Level of Service)	Level of Service D	Level of Service E
Gasoline Consumed (Gallons)	1,242 Gallons	2,215 Gallons

Source: Caltrans Operational Analysis (April 2018).

Pedestrian and Bicycle Facilities

The City of Stockton updated its Bicycle Master Plan in 2017. Currently, there are no pedestrian and/or bicycle facilities on the Stockton Channel Viaduct Bridges, freeways, or connecting on-ramps and off-ramps. Pedestrian and bicycle uses are strictly prohibited in these areas.

Within the project study areas, a Class 1 pedestrian/bicycle pathway exists (see Photo 1) across from Morelli Park, accessible via a pedestrian bridge over Mormon Slough (see Photo 2). Weber Avenue and Fremont Street are considered "bicycle friendly" areas but do not have bikeway facilities meeting the Caltrans standards of Class 1, 2, or 3.

Photo 1-Class 1 Pedestrian/Bicycle Facility

Photo 2-Pedestrian/Bicycle Bridge

Environmental Consequences

Preliminary Traffic Impacts for Mainline, Connectors, Ramps and Streets

Caltrans Central Region Design Branch summarized the expected traffic handling and impacts for the Stockton Channel Viaduct Bridge Improvements Project. The following section discusses the traffic impacts during construction for all three build alternatives for Interstate 5, its connectors, on-ramps and off-ramps, local streets, and associated detours.

Mainline Interstate 5-All Alternatives

The existing eight-lane divided highway on Interstate 5, with auxiliary lanes across the viaduct structure and portions to the south and north, would have various nighttime lane closures for installation/removal of temporary K-rails between the various stages of construction for traffic handling. There would be nighttime lane closures and ramp closures for existing roadways for structure removal and setup of falsework for new structure improvements. There would also be weekend closures of connectors/ramps for roadway work. It is anticipated the project will have various traffic handling methods for stage construction. There will be, one lane reduction in each direction throughout project construction. Traffic shifts are expected in which one lane in at least one direction would not have access to local ramps within the project limits.

An optional detour path for through traffic would be in place to minimize traffic volume during construction. The southbound detour on Interstate 5 would be from State Route 12 to southbound State Route 99 to westbound State Route 4.The northbound detour would be from eastbound State Route 4 to northbound State Routed 99 to westbound State Route 12. The detour is expected to be in place throughout project construction.

State Route 4 and Interstate 5 Connectors

For Alternative 3, the westbound and eastbound State Route 4 and northbound Interstate 5 connectors would have extended weekend or possibly weeklong closures for roadway work between northbound Interstate 5 and its on-ramp. For Alternatives 1A and 2, there would be nighttime closures and some extended weekend closures of the on-ramps for roadway work.

Detours would apply for all three build alternatives for the local downtown traffic movement. Local traffic to northbound Interstate 5 traffic via State Route 4 would be detoured to southbound Center Street to westbound Martin Luther King Junior Boulevard to the northbound Interstate 5 on-ramp.

Detours would apply for all three build alternatives. Traffic on the westbound State Route 4 connector to northbound Interstate 5 would be detoured to the southbound Interstate 5 connector to the Charter Way southbound off-ramp to Martin Luther King Junior Boulevard and onto the northbound Interstate 5 on-ramp.

Detours would also apply for all three build alternatives for the eastbound State Route 4 connector to northbound Interstate 5. The detour would divert traffic onto Navy Drive to eastbound Tillie Lewis Drive to eastbound Charter Way to the northbound Interstate 5 on-ramp.

Southbound Interstate 5 and Westbound and Eastbound State Route 4 Connectors

Detours would be proposed for southbound Interstate 5 traffic to westbound State Route 4. Southbound traffic would be detoured to southbound Interstate 5 to the Charter Way off-ramp, west on Charter Way to Tillie Lewis Drive, north on Navy Drive, and onto westbound State Route 4.

Temporary Pershing Avenue Off-Ramp

Construction of a temporary single-lane off-ramp north of the existing off-ramp would be required. It is expected that the temporary off-ramp would be needed during the later phase of construction to minimize full closure impacts. The temporary off-ramp would require modification of signal, signage, and striping at the existing Pershing Avenue off-ramp and Park Street intersection. Signage would also direct traffic to the Monte Diablo Avenue off-ramp as a secondary exit in conjunction with the temporary off-ramp. It is expected that the temporary off-ramp would be the main exit for vehicles, as well as truck traffic.

For Alternative 3, there would be a nighttime closure of the existing Pershing Ave off-ramp to build the temporary Pershing Avenue off-ramp, as well as weekend closures for roadway work. For Alternatives 1A and 2, there would

be nighttime closures of the off-ramp to build the temporary off-ramp and intersection modification work.

A detour would be in place during the construction of the temporary Pershing Avenue off-ramp. The temporary Pershing Avenue off-ramp traffic would be detoured to the Monte Diablo Avenue off-ramp and would then travel east to Pershing Avenue.

Fremont Street On-Ramp and Off-Ramp

The existing Fremont Street on and off ramps would have various closures. For Alternative 3, there would be nighttime closures of the ramps for roadway work on southbound Interstate 5. There would also be extended weekend closures to rebuild the Fremont Street on-ramp and off-ramp. A detour would direct traffic to the southbound Monte Diablo off-ramp to westbound Monte Diablo Avenue to Ryde Avenue to Freemont Street and vice versa for the southbound on-ramp. For Alternatives 1A and 2, there would be nighttime closures of the Fremont Street on-ramp for structure work. No roadway or structure work is expected for the Fremont Street off-ramp.

Pershing Avenue

For Alternatives 1A and 2, Pershing Avenue would have several lane closures during the daytime and nighttime. Under Alternative 3, the existing four-lane Pershing Avenue would have numerous daytime and nighttime lane closures for the proposed removal and replacement of abutment number 8 and the removal of existing bent number 13 along Interstate 5.

Fremont Street

For Alternatives 1A and 2, Fremont Street would have many daytime and nighttime lane closures. For Alternative 3, there would be various daytime and nighttime lane closures for the removal of some of the eastbound Fremont Street on-street parking for the construction of bent number 6.

Oak Street

Under all three build alternatives, Oak Street would have many daytime and nighttime lane closures for construction of the Pershing Avenue off-ramp. More daytime and nighttime closures would be required under Alternative 3, full replacement of the Stockton Channel Viaduct Bridges, than Alternatives 1A and 2.

Park Street

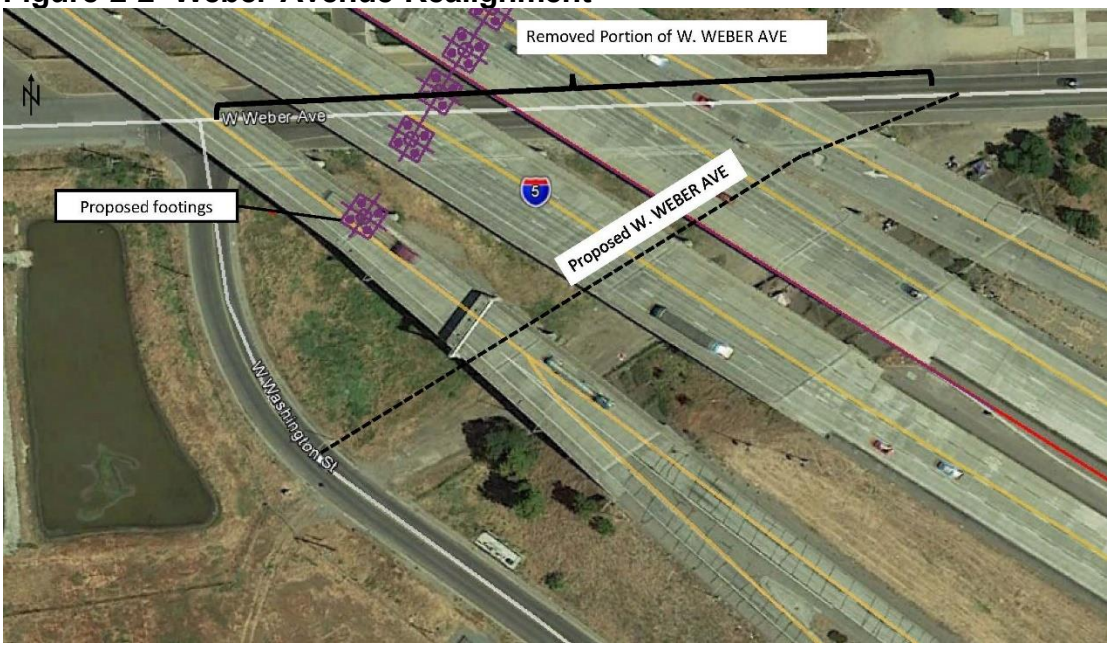
For Alternative 3 only, Park Street would have various daytime and nighttime lane closures for construction of the Pershing Avenue off-ramp and Park Street structure work.

Weber Avenue and Washington Street

Under Alternative 3, a portion of Weber Avenue beneath and east of the existing bridges, south of the Stockton Deep Water Channel will be realigned. This would involve removing a portion of Weber Avenue and building a new intersection at Washington Street, south of the existing intersection. Traffic impacts for the Weber Avenue realignment would include the full closure of eastbound and westbound Weber Avenue traffic due to the new bridge bents being constructed across Weber Avenue and removal of existing bent number 3, near Washington Street.

Alternatives 1A and 2 would require a partial closure of Weber Avenue with one-way traffic control. There would also be proposed temporary portable signals on westbound and eastbound Weber Avenue and a portion of Washington Street to accommodate the construction of bent number 3 (see Figure 2-2 Weber Avenue Alignment).

Figure 2-2 Weber Avenue Realignment



For Alternative 3, westbound and eastbound detours would be proposed. Eastbound traffic from Weber Avenue would be directed to West Washington Street to South Fresno Avenue to Charter Way to South Lincoln Street back to Weber Avenue. Westbound Weber Avenue traffic would be reversed for the eastbound detour.

Nighttime and Weekend Closures

For all three build alternatives, nighttime closures and some extended weekend closures of either the on-ramps or off-ramps within the project limits would be expected.

- Stage 1: Center Span Construction—It is expected that construction during Stage 1 would require a few nighttime closures with detours to the Charter Way Interchange due to lane closures and traffic handling on the southbound Interstate 5 for setting up traffic shifts to be used during Stage 1 construction.
- Stage 2: Southbound Side of Stockton Channel Viaduct Bridges—Expected full closure for 1 year of the current southbound Interstate 5 exit to both the eastbound and westbound State Route 4 connectors due to construction of the new bridge portion and roadway portion of the westbound State Route 4 connector. Traffic will shift back to having connectors open, with the temporary crossover for the eastbound State Route 4 connector removed.
- Stage 3: Northbound Side of Stockton Channel Viaduct Bridge—Expected nighttime closures with a detour to the Charter Water Interchange due to any finishing work (striping, signage, etc.).

No-Build Alternative

Because no construction activities are proposed under the No-Build Alternative, the project would not be completed, and the bridge structure would not meet the standards of load requirements.

Operational Impacts For All Build Alternatives

Implementation of the project would not improve the Level of Service operations along studied freeway segments and intersections. Under the design year 2045, the Interstate 5 corridor would operate at Level of Service F during the evening peak hours.

Vehicle Miles Traveled

Since the propose project is a replacement in kind of an existing facility and not adding roadway capacity, it will not increase vehicle miles traveled and will not conflict with or be inconsistent with CEQA Guidelines Section 15064.3(b).

Pedestrian and Bicycle Facilities

No impacts to existing bicycle or transit facilities are expected.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures are required for traffic and transportation/pedestrian and bicycle facilities. A traffic management plan would be developed during the plans, specifications, and estimates phase to address project vicinity detours and Weber Avenue realignment.

2.1.7 Cultural Resources

Regulatory Setting

The term "cultural resources" as used in this document refers to the "built environment" (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 following.

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 U.S. Code 327)

Historic properties may also be covered under Section 4(f) of the U.S. Department of Transportation Act, which regulates the "use" of land from historic properties (in Section 4(f) terminology—historic sites). See Appendix A for specific information about Section 4(f).

The California Environmental Quality Act (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 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.

Public Resources Code Section 5024 requires state agencies to identify and protect state-owned historical resources that meet the National Register of Historic Places listing criteria. It further requires Caltrans to inventory state-owned structures in its rights-of-way.

Affected Environment

A Historical Property Survey Report was completed in April 2020 to consider the area of potential effects for the project. This area consists of the potential limits of the direct and indirect impacts proposed by the project, including a construction staging area. Cultural resources surveys, including both architectural and archaeological resources, involved record searches, background research, field surveys, and consultation and coordination with Native American groups.

Identification efforts resulted in a single newly identified historic era archaeological site within the area of potential effects. This site is considered eligible for this project only per the Section 106 agreement.

Environmental Consequences

Within the project area, one prehistoric archaeological site was determined eligible for inclusion in the National Register of Historic Places. This site would not be adversely affected by the project because the site would be avoided and protected by environmentally sensitive area fencing. Therefore, the finding for the project is "no adverse effect with standard conditions."

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures would be incorporated into the construction contract to ensure that the impacts caused by the project would have no significant adverse impacts on the one identified archaeological site.

- ESA-1: Environmentally Sensitive Area Designation: The establishment of environmentally sensitive areas would be designated by environmentally sensitive area fencing within Caltrans' right-of-way.

"Environmentally sensitive area" information would be shown on contract plans and discussed in Section 14-1.02 of the Caltrans 2018 Standard Specifications "Environmentally sensitive area" provisions may include but are not necessarily limited to the use of temporary orange fencing or other high-visibility marking to identify the proposed limit of work in areas next to sensitive resources or to locate and exclude sensitive resources from potential construction impacts. Contractor encroachment into "environmentally sensitive areas" would be prohibited, and immediate work stoppage and notification to the Caltrans resident engineer is required if an "environmentally sensitive area" is breached. "Environmentally sensitive area" provisions would be implemented as the first order of work and remain in place until all construction activities are complete.

- CULT-1: Caltrans Standard Special Provision Section 14-1.02A would be required to mark over the boundary of the archaeological resource, given the archaeological resource temporary ID Number 2567-1, which would prevent the contractor from disturbing the site during construction.
- CULT-2: Caltrans Standard Special Provision Section 14-1.03B: An Archaeological Monitoring Area would be included in the construction contract. An archaeologist and Native American monitor would be onsite during construction to ensure the integrity of the environmentally sensitive areas and see any unexpected discoveries that might become exposed through construction activities.

2.2 Physical Environment

2.2.1 Paleontology

Regulatory Setting

Paleontology is a natural science focused on the study of ancient animal and plant life as it is preserved in the geologic record as fossils. A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized projects.

1. 23 U.S. Code 1.9(a) requires that the use of federal-aid funds must be in conformity with all federal and state laws.
2. 23 U.S Code 305 authorizes the appropriation and use of federal highway funds for paleontological salvage as necessary by the highway department of any state, in compliance with 16 U.S. Code 431-433 above and state law.

Under California law, paleontological resources are protected by the California Environmental Quality Act (CEQA).

Affected Environment

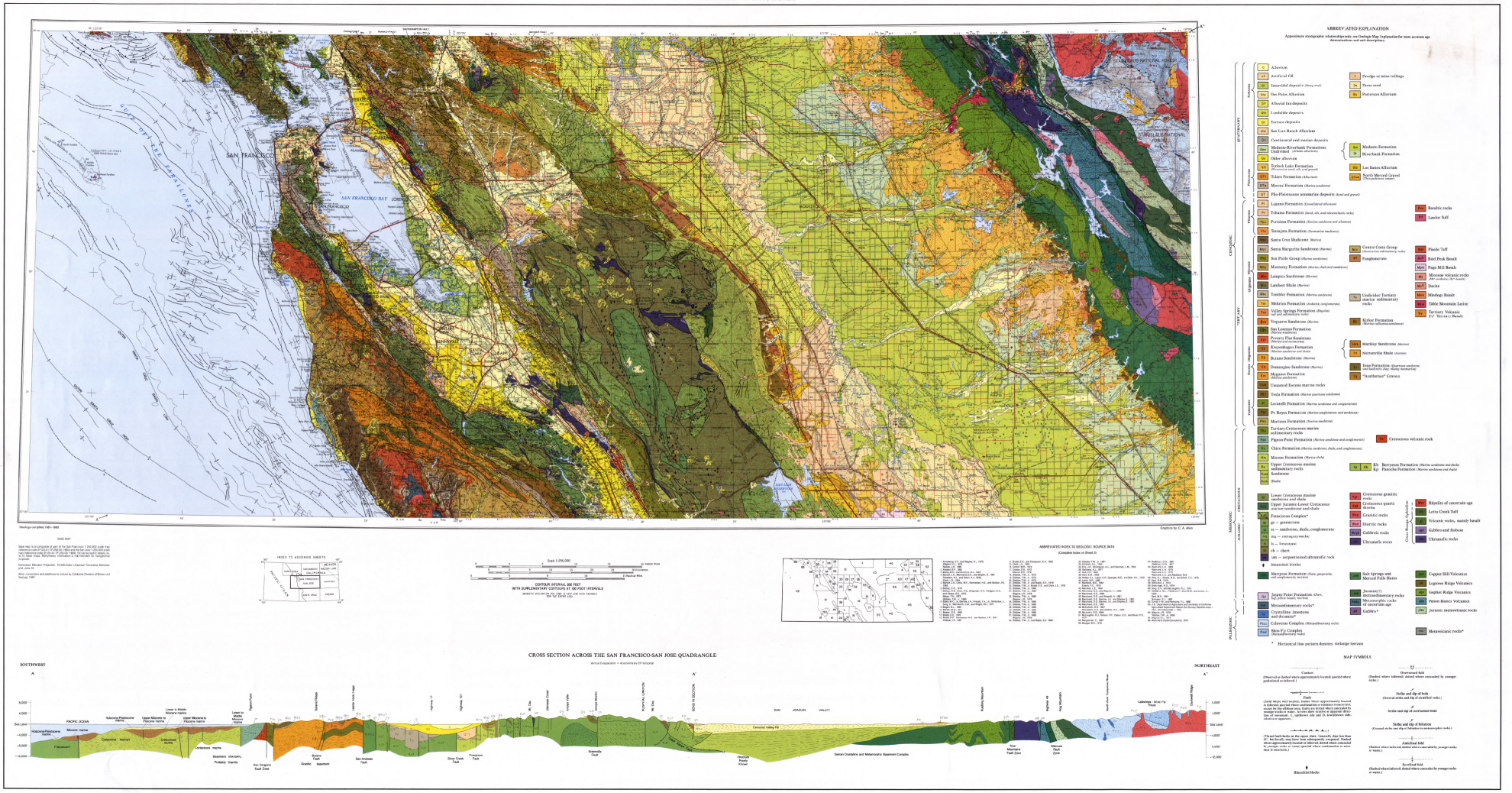
A Paleontological Identification Report was completed for the project in April 2020.

The project is within the Great Valley Geomorphic Province. The underlying sediments consist of sand, silt, clay, and gravel from the paleo-Calaveras River and are associated with the Quaternary Modesto Formation.

The California State University, Fresno Paleontological Sensitivity Mapping Project database (2000) lists the paleontological sensitivity in the Quaternary Modesto Formation as “low.” Even though the paleontological sensitivity for the Modesto Formation is low, numerous scientifically significant vertebrate fossils have been found in the Modesto Formation within a short distance from the project area since the 2000 mapping project. The paleontological sensitivity of the Modesto Formation is now categorized as “high,” and there is a high potential that it will likely contain significant vertebrate, invertebrate, and/or plant fossils within the project area.

Figure 2-3 shows the general geological formations within Central California. Most notably is the Quaternary Formation; the Modesto Formation falls within that formation.

Figure 2-3 Geologic Map of San Francisco-San Jose Quadrangle



Environmental Consequences

The potential for disturbing scientifically important paleontological resources is considered high for Alternative 2 and Alternative 3. The place with the greatest likelihood of encountering paleontological resources is within the area that is needed for the water retention basin next to the Stockton Channel Viaduct Bridge for dewatering activities. The estimated depth to the Modesto Formation in the project area is about 3 feet to 5 feet below surface grade. (Paleontological Identification Report, April 2020)

The estimated excavation depth for the proposed water retention basin is 15 feet below surface grade and is an estimated 35,000 square feet in total area (see Figure 2-4). Due to the depths and lateral extent of the water retention basin, there is a high potential for impacting paleontological resources.

Figure 2-4 Retention Basin Location

Other construction activities may impact paleontological resources within the project area. Under Alternative 3, work would consist of installing cast-in-steel-shell piles, which are 4 feet to 10 feet in diameter to a depth of about 100 feet below surface grade. As discussed in the Paleontological Identification Report, the process of installing the cast-in-steel-shell piles to this depth would displace any potential paleontological resources as the pile is advanced, so any scientifically significant fossils could be destroyed.

Avoidance, Minimization, and/or Mitigation Measures

A Paleontological Evaluation Report would be prepared during the plans, specifications, and estimates phase to verify the need for mitigation. If substantiated, a qualified paleontologist would need to prepare a Paleontological Mitigation Plan.

- PALEO-1: A project-specific Paleontological Evaluation Report will verify the need for a Paleontological Mitigation Plan. If the Paleontological Mitigation Plan is warranted it would need to be prepared by a qualified principal paleontologist (Master of Science or Doctorate in paleontology) once adequate project design information regarding subsurface disturbance location, depth, and lateral extent is available.

2.2.2 **Air Quality**

Regulatory Setting

The Federal Clean Air Act, as amended, is the primary federal law that governs air quality while the California Clean Air Act is its companion state law. These laws, and related regulations by the U.S. 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 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 and particles of 2.5 micrometers and smaller, lead, and sulfur dioxide. In addition, 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 the National Environmental Policy Act (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 U.S. 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 only for the specific National Ambient Air Quality Standards that are or

were violated. U.S. EPA 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 (CO), nitrogen dioxide, ozone, particulate matter (Particulate Matter 10 and Particulate Matter 2.5), 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 SO2, 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 Plans) and 4 years (for the Federal Transportation Improvement Programs).

Regional Transportation Plans and Federal Transportation Improvement Programs conformity use 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 Plans and/or Federal Transportation Improvement Programs 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 Plans and Federal Transportation Improvement Programs, 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 Plans and Transportation Improvement Plan; the project has a design concept and scope that has not changed significantly from those in the Regional Transportation Plans and Transportation Improvement Plan; project analyses have used the latest planning assumptions and EPA-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

The Stockton Channel Viaduct Bridge Imporvements project site is located in Stockton, California in San Joaquin County, an area within the San Joaquin Valley Air Basin, which includes San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and a portion of Kern County. Air quality regulation in San Joaquin Valley Air Basin is administered by The San Joaquin Valley Air Pollution Control District.

The climate of the project area is generally Mediterranean in character, with cool winters (average high 56° Fahrenheit and average low 36° Fahrenheit in January) and warm, dry summers (average high 93° Fahrenheit and average low 57° Fahrenheit in July). Temperature inversions are common, affecting localized pollutant concentrations in the winter and enhancing ozone formation in the summer. Annual average rainfall is 17.85 inches per year.

Per the July 2020, Stockton Channel Viaduct Bridge Improvements Air Quality Memorandum, San Joaquin County is in nonattainment status for the Federal 8-hour Ozone and Particulate Matter 2.5 standards and in attainment for the Federal Particulate Matter 10 standard. San Joaquin County is in nonattainment status for the State Ozone, Particulate Matter 10, and Particulate Matter 2.5 standards.

Environmental Consequences

Per the Air Quality Memorandum, the Stockton Channel Viaduct Bridge Improvement Project is exempt from transportation conformity test, requiring transportation project assess a project's future vehicle emissions of air pollutants, since the project falls under Table 2 of 40 Code of Federal Regulations Section 93.126, Federal Highway Administration, "Widening narrow pavements or reconstructing bridges (no additional travel lanes)." Additionally, the Air Quality Memorandum stated the project is not expected to cause any operational effects on air pollution.

During construction, the project would generate air pollutants. The exhaust from construction equipment contains hydrocarbons, oxides of nitrogen, carbon monoxide, suspended particulate matter, and odors. However, the largest percentage of pollutants would be windblown dust generated during excavation, grading, hauling, and various other activities. The impacts of these activities would vary each day as construction progresses. Dust and odors during construction could cause occasional annoyance and complaints from residents along the state right-of-way.

Construction climate change emissions are estimated at 16 tons of Carbon Dioxide over 564 working days. Operational climate change emissions do not need to be estimated because the project is not capacity increasing.

Avoidance, Minimization, and/or Mitigation Measures

Caltrans' Standard Specifications that pertain to dust control and dust palliative requirements are a required part of all construction contracts and should effectively reduce and control emission impacts during construction. The provisions of Caltrans' Standard Specifications Section 14-9.02, "Air Pollution Control" and Section 10-5, "Dust Control," require the contractor to comply with the air pollution control rules, ordinances, regulations, and statutes that apply to work performed under the contract, including those provided in Government Code Section 11017. The implementation of the above Standard Specifications would help minimize any potential temporary construction-related impacts to air quality. Additionally, a dust control plan would be required if:

- At least 2,500 cubic yards of material are moved in a day for at least three days of the project, or 5 or more acres of land will be disturbed during construction.

2.2.3 **Noise**

Regulatory Setting

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

California Environmental Quality Act

CEQA requires a strict 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. The rest of this section will focus on the NEPA/Title 23 Part 772 of the Code of Federal Regulations noise analysis; please see Chapter 3 of this document for further information on noise analysis under CEQA.

National Environmental Policy Act and 23 Code of Federal Regulations 772

For highway transportation projects with Federal Highway Administration involvement (and Caltrans, as assigned), the Federal-Aid Highway Act of 1970 and its 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 decibels) is lower than the noise abatement criteria for commercial areas (72 decibels). The following table lists the noise abatement criteria for use in the NEPA/23 Code of Federal Regulations 772 analysis.

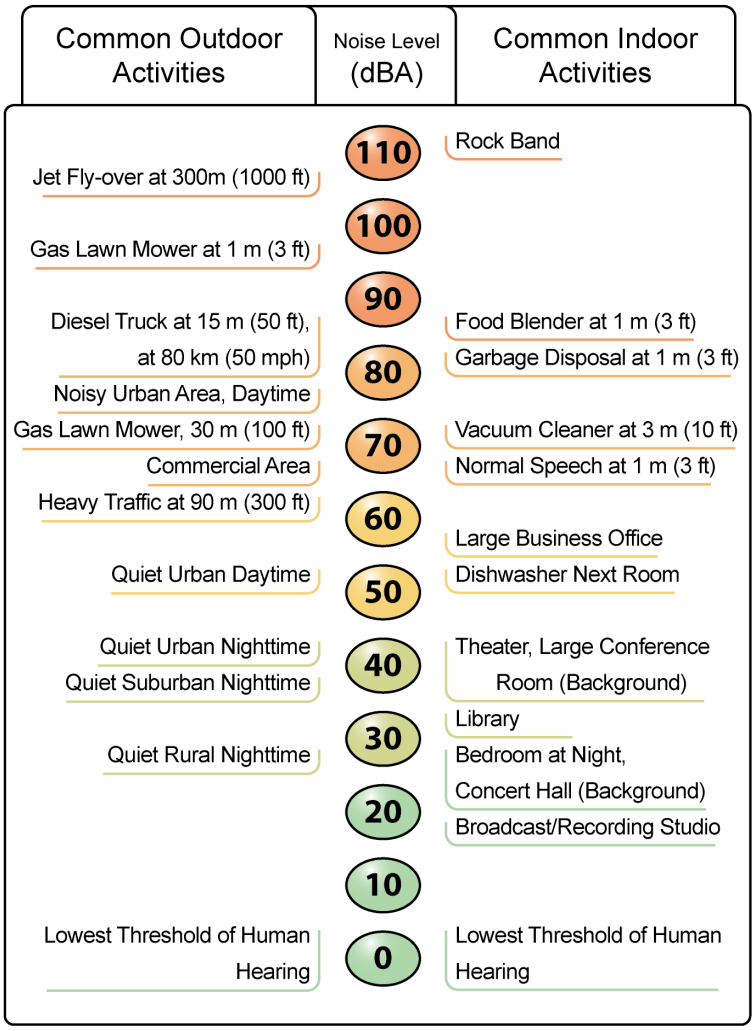
In Table 2.4 below, undeveloped lands are permitted for the activity categories for B and C.

Table 2.4 Noise Abatement Criteria

Activity Category	Noise Abatement Criteria, Hourly A-Weighted Noise Level, Leq(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	67 (Exterior)	Residential.
C	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 warehouses.
G	No Noise Abatement Criteria—Reporting Only	Undeveloped lands that are not permitted.

Figure 2-5 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 2-5 Noise Levels of Common Activities



According to Caltrans' Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, May 2011, a noise impact occurs when the predicted future noise level with the project substantially exceeds the existing noise level (defined as 12 decibels or more) or when the future noise level with the project approaches or exceeds the Noise Abatement Criteria. A noise level is considered to approach the Noise Abatement Criteria if it is within 1 decibels of the Noise Abatement Criteria.

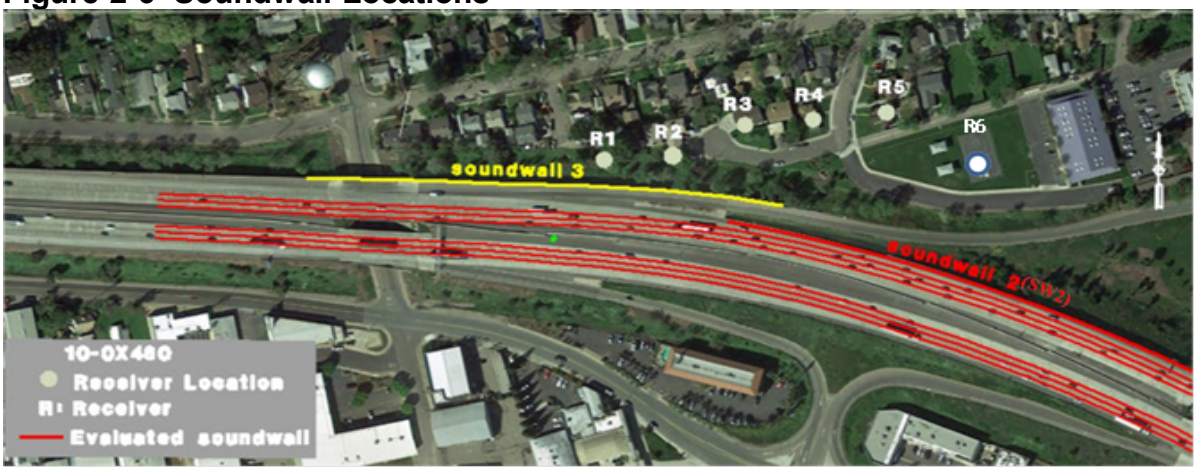
If it is determined that the project will have noise impacts, then potential abatement measures must be considered. Noise abatement measures that are determined to be reasonable and feasible at the time of final design are incorporated into the project plans and specifications. This document discusses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

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. Noise abatement must be predicted to reduce noise by at least 5 decibels at an impacted receptor to be considered feasible from an acoustical perspective. It must also be possible to design and construct the noise abatement measure for it to be considered feasible. Factors that affect the design and constructability of noise abatement include, but are not limited to, safety, barrier height, topography, drainage, access requirements for driveways, presence of local cross streets, underground utilities, other noise sources in the area, and maintenance of the abatement measure. The overall reasonableness of noise abatement is determined by the following three factors: 1) the noise reduction design goal of 7 decibels at one or more impacted receptors; 2) the cost of noise abatement; and 3) the viewpoints of benefited receptors (including property owners and residents of the benefited receptors).

Affected Environment

The July 2020 Noise Study Report determined that the proposed project would affect the residential neighborhood near the Interstate 5 on-ramp from Pershing Avenue. The report identified two sound walls currently in the project area—sound wall 3 and sound wall 2. Sound wall 3, which is built on the Park Street on-ramp, is the main sound wall next to the residential homes. Sound wall 3 would not be altered during construction activities. Sound wall 2 was built to extend noise abatement generated from Interstate 5 traffic. Sound wall 2 is about 900 feet long; per the project description, sound wall 2 would be demolished and rebuilt under all three build alternatives due to the construction of the temporary Pershing Avenue off-ramp. The Noise Study Report identified 13 first-row receivers that are currently benefitting from the existing overlapping sound walls 2 and 3. For the purpose of this noise re-evaluation, only six first-row receivers were selected and shown in the figure 2-6, Soundwall Locations. The results from noise modeling for these receptors were used to determine the height of the 900-foot sound wall 2 (see Figure 2-6).

Figure 2-6 Soundwall Locations



Environmental Consequences

The Federal Highway Administration defines a Type 1 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 alignments or increases the number of through-traffic lanes. Under Alternative 3, the project would alter the horizontal and/or vertical alignments of the Stockton Channel Viaduct Bridge, which would qualify the project as a Type 1 project, requiring a noise study. For Alternatives 1A and 2, the project would be considered a rehabilitation project, which would not qualify the project as a Type 1 project.

The analysis for the Noise Study Report was conducted for barrier heights ranging from 10 feet to 14 feet since the sound wall proposed in the project description would be on the edge of the shoulder (see Figure 2-7). The height and location for the proposed reconstruction of sound wall 2 were evaluated to determine if a minimum reduction of 5 A-weighted decibels at the represented first-row receivers could be achieved; they were also evaluated to determine if a reduction of 7 A-weighted decibels could be obtained for one first-row receiver. The following is a summary of each build alternative.

Alternative 1A

A sound wall would need to be built at the existing location of sound wall 2 to achieve the minimum noise reduction of 5 decibels for the six first-row receivers. Sound wall 2 would break the line of sight at all proposed heights of 10, 12, and 14 feet and would also achieve a reduction of 7 decibels for at least one first-row receiver at the maximum height of 14 feet. For detailed discussion please refer to the July 2020 Noise Study Report.

Alternative 2

A sound wall would need to be built at the existing location of sound wall 2 to achieve the minimum noise reduction of 5 decibels for the six first-row receivers. Sound wall 2 would break the line of sight at all proposed heights of

10, 12, and 14 feet and would also achieve a reduction of 7 decibels for at least one first-row receiver at the maximum height of 14 feet. For detailed discussion please refer to the July 2020 Noise Study Report.

Alternative 3

A sound wall would need to be built at the existing location of sound wall 2 to achieve the minimum noise reduction of 5 decibels for the six first-row receivers. Sound wall 2 would break the line of sight at all proposed heights of 10, 12, and 14 feet and would also achieve a noise reduction of 7 decibels for at least one fist-row receiver at the maximum height of 14 feet. For detailed discussion please refer to the July 2020 Noise Study Report.

The findings for the Noise Study Report found that for Alternative 3, the proposed reconstruction of sound wall 2 would need to be raised to 14 feet to meet the reduction of 7 decibels for one first-row receiver since it is a Type 1 project.

The findings for Alternatives 1A and 2 concluded the proposed reconstruction of sound wall 2 with a height of 10 feet to 12 feet would be sufficient to meet noise reduction standards since these alternatives do not meet the definition of a Type 1 project.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures are discussed in this section. The project scope accounts for the demolition and reconstruction of the existing sound wall 2 and proposes the appropriate length and height for each build alternative.

2.3 Biological Environment

Environmental study limits for the project were established to encompass all areas determined by Caltrans Engineering, Construction, and Environmental staff to be affected directly or indirectly by the project. This included areas required for the placement and construction of project features and areas required for the access, operation, storage, and staging of construction equipment and personnel. The environmental study limits represent the project's construction footprint.

The "Action Area" is defined for the purposes of the federal Endangered Species Act as "all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action." (50 Code of Federal Regulations Section 402.02) The Action Area is a biological determination of the reach of the proposed action on federally listed species.

The Action Area will be considered as the same area for the purposes of federal agency consultation, including for the purposes of Clean Water Act

Section 404 permitting and Federal Endangered Species Act Section 7 Consultation. The Action Area consists of the project construction footprint as well as all connecting waterways extending up to 3,280 feet (0.62 mile) away from underwater sound sources produced by construction activities. Figure 2-7 shows the biological environmental study limits and Action Area.

Figure 2-7 Project Environmental Study Limits and Federal Action Area

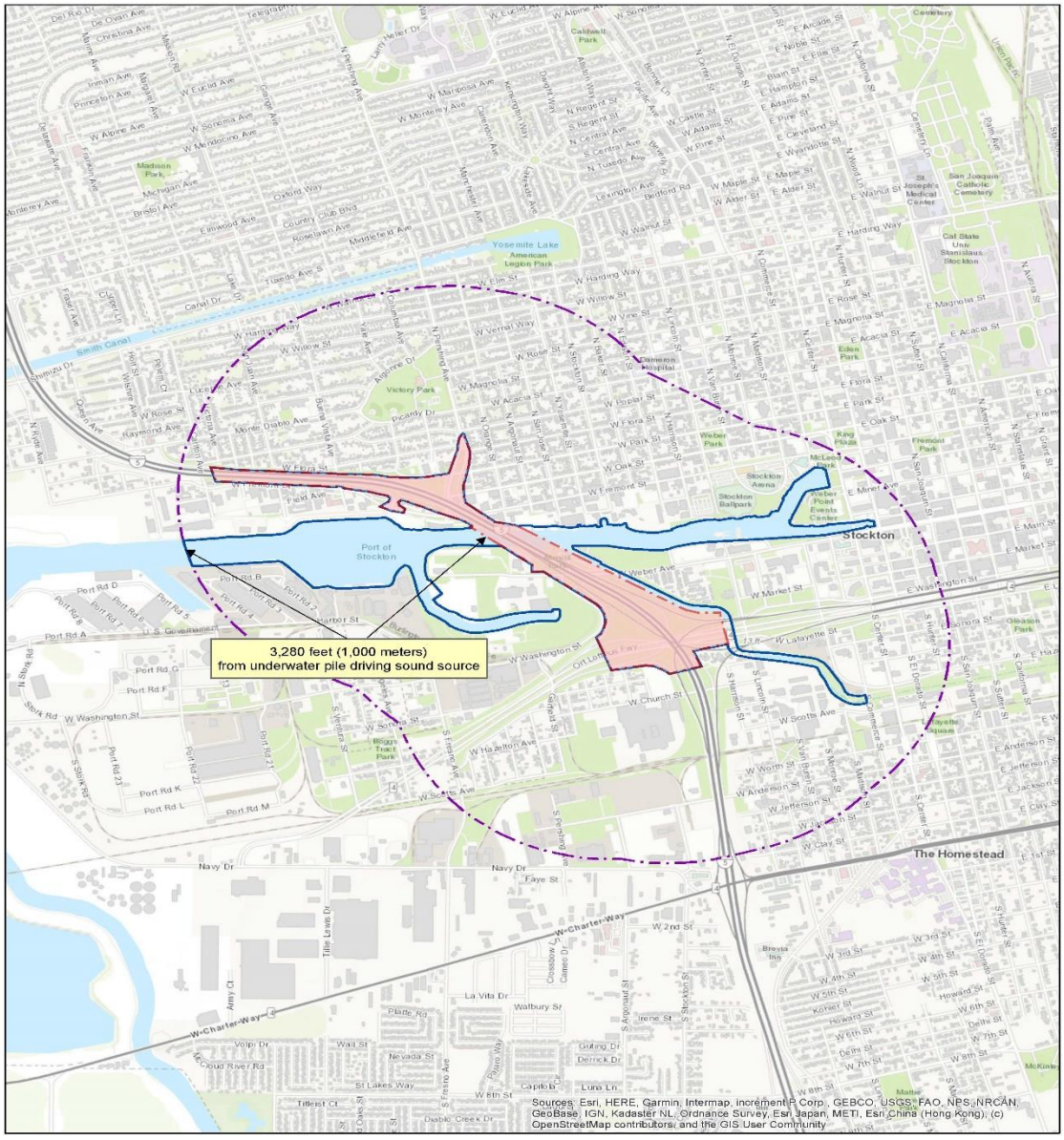


Figure 2-8
Project Environmental Study Limits and Federal Action Area

10-0X460 SJ-05 PM 26.47
Stockton Channel Viaduct Bridge Improvement Project
I-5 in San Joaquin County, CA

Datum: North American Datum 1983
Projection: California State Plane, Zone 3
Map Prepared on May 22, 2019 By
Jason Meigs, Associate Environmental Planner - NS
California Department of Transportation, District 10

LEGEND

- Environmental Study Limits
- Federal Action Area
- 1,000 Meter Underwater Noise Threshold

N
W E
S

1:18,000
1 inch = 1,500 feet

0 750 1,500 3,000 Feet

2.3.1 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 (CWA) (33 United States Code [USC] 1344), is the primary law regulating wetlands and surface waters. One purpose of the Clean Water Act is to regulate the discharge of dredged or fill material into waters of the U.S., including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas, and other waters that may be used in interstate or foreign commerce. The lateral limits of jurisdiction over non-tidal water-bodies extend to the ordinary high water mark (OHWM), 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 U.S. Army Corps of Engineers (USACE) with oversight by the U.S. Environmental Protection Agency. (U.S. EPA)

The U.S. 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 U.S. Army Corps of Engineers' Individual permits. There are two types of Individual permits: Standard permits and Letters of Permission. For Individual permits, the U.S. Army Corps of Engineers decision to approve is based on compliance with U.S. EPA's Section 404(b)(1) Guidelines (40 Code of Federal Regulations [CFR] 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines (Guidelines) were developed by the U.S. EPA in conjunction with the U.S. Army Corps of Engineers and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that the U.S. Army Corps of Engineers may not issue a

permit if there is a "least environmentally damaging practicable alternative" (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

The Executive Order for the Protection of Wetlands (EO 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, Executive Order 11990 states that a federal agency, such as FHWA and/or the Department, 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 (SWRCB), the Regional Water Quality Control Boards (RWQCBs) and the California Department of Fish and Wildlife (CDFW). 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 of 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 or 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 U.S. Army Corps of Engineers may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the California Department of Fish and Wildlife.

The RWQCBs 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 (WDRs) and may be required even when the discharge is already permitted or exempt under the Clean Water Act. In compliance with Section 401 of the Clean Water Act, the RWQCBs also issue water quality certifications for activities which may result in a discharge to waters of the U.S. This is most frequently required in tandem with a Section 404 permit request. Please see the Water Quality section for more details. Because permanent and temporary impacts to "other waters" of the U.S. are potentially jurisdictional under Section 404 of the Clean Water Act and are expected to occur under Alternatives 1A, 2, and 3, the Stockton Channel Viaduct Bridge Improvements Project is expected to require a Clean Water Act Section 404 Permit from the U.S. Army Corps of Engineers under each build alternative. Because the project would conduct

activities in waters designated by the U.S. Army Corps of Engineers as navigable waters under Alternatives 1A, 2, and 3, Section 10 of the Rivers and Harbors Act is also applicable under each build alternative.

Because the project proposes to conduct construction activities below the highest high tide line of jurisdictional waters of the State of California (the Stockton Deepwater Channel) under Alternatives 1A, 2, and 3, the Stockton Channel Viaduct Bridge Improvements Project is expected to require a California Fish and Game Code Section 1600 Lake or Streambed Alteration Agreement and a Clean Water Act Section 401 Certification from the Central Valley Regional Water Quality Control Board under each build alternative.

Affected Environment

Impacts to waters of the U.S. and waters of the State could be caused by project construction. Additional details are provided in the 2020 Natural Environment Study.

The following existing information was reviewed to develop an inventory of potentially jurisdictional waters of the U.S. occurring within the project vicinity:

- 1987 Wetlands Delineation Manual
- Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0) 2008
- Hydric soils would be determined by the methodology outlined in the Field Indicators of Hydric Soils in the U.S., Version 6.0 (2006) from the U.S. Department of Agriculture Natural Resources Conservation Service.
- Preliminary determinations of the jurisdictional status of delineated wetlands were based on 85 Federal Register 22250 (April 21, 2020).

The following existing information was reviewed to develop an inventory of potentially jurisdictional waters of the State of California occurring within the project vicinity. All water-bodies found were evaluated to determine if they qualified as waters of the State of California based upon the following criteria:

- All federally jurisdictional wetlands and other waters, as described in the 2020 Natural Environment Study in Sections 2.3.1 and 2.3.2.
- Waters of the State of California jurisdiction at streams, lakes, and ponds considered as “other waters” of the U.S. extends beyond the ordinary high-water mark to the top of the bank or to the greatest lateral extent of riparian vegetation, whichever is greater.

The jurisdiction of the waters of the State of California includes isolated, non-navigable, intrastate wetlands that do not qualify as waters of the U.S.

Waters of the U.S.

The U.S. Army Corps of Engineers has not issued a preliminary jurisdictional determination, an approved jurisdictional determination, or an aquatic resources verification per its Regulatory Guidance Letter 08-02 for the project. Wetlands and other waters of the U.S. would be verified during the permitting process.

A feature possessing characteristics of wetlands and other waters was detected in the approximate center of the triangular-shaped northeast quadrant of the Interstate 5/State Route 4 interchange loops **(**Potential Wetland Location-01). The Potential Wetland Location-01 is about 0.93 acre in the area (see Figure 2-8 and Figure 2-9).

Figure 2-8 Potential Wetland Location-01 Viewed From Southbound Interstate 5 Off-Ramp

Figure 2-9 Highway Stormwater Conveyance at Northern Point of Potential Wetland Location-01

It has been preliminarily determined that the Potential Wetland Location-01 does not qualify as jurisdictional waters of the U.S. under Section 404 of the Clean Water Act based upon the definition provided in "Navigable Waters Protection Rule: Definition of "Waters of the U.S." (85 Federal Register 22250) This determination would be considered preliminary until verified by the U.S. Army Corps of Engineers.

Based on the current project design and with the implementation of avoidance measures, Potential Wetland Location-01 is not expected to be permanently or temporarily impacted by the proposed project under Alternatives 1A, 2, and 3.

The methodology described in the Corps of Engineers Wetlands Delineation Manual, as well as the methodology described in the U.S. Army Corps of Engineers' 2005 Regulatory Guidance Letter ("Ordinary High-Water Mark Identification"), was used to preliminarily identify potentially jurisdictional "other waters" of the U.S. in the form of tidal perennial streams (the Stockton Deep Water Channel and Mormon Slough). The elevation of the mean high tide line occurs about 4.85 feet above mean sea level. A total of 7.02 acres (305,783.40 square feet) of potentially jurisdictional "other waters" of the U.S. was preliminarily identified within the project's environmental study limits. Because the project's Action Area extends upstream and downstream for about 3,280 feet, about 237.49 acres of potential "other waters" of the U.S. is estimated to occur within the project's Action Area. These boundaries of "other waters" of the U.S. features within the environmental study limits and Action Area would be considered preliminary until verified by the U.S. Army Corps of Engineers.

Environmental Consequences

Proposed construction activities that would occur within potentially jurisdictional waters of the U.S. include pile driving for deep foundations, pile driving for temporary sheet pile cofferdams, and pile driving for temporary trestles. Also included would be temporary dewatering activities and resulting temporarily dewatered areas, construction of pile caps, and demolition or removal of existing structures under Alternatives 1A, 2, and 3. Access to potentially jurisdictional waters of the U.S. and many of the proposed construction activities would be accomplished by the use of barges or trestles. Some construction activities within potentially jurisdictional waters of the U.S. may also be performed behind dewatered cofferdams.

Permanent and temporary impacts to potentially jurisdictional waters of the U.S. under Section 404 of the Clean Water Act would include the following:

- No impacts to potentially jurisdictional wetlands are expected to occur under Alternatives 1A, 2, and 3.
- Under Alternative 3, 0.15 acre of permanent fill would be placed in potentially jurisdictional "other waters" of the U.S., and 0.35 acre of potentially jurisdictional "other waters" of the U.S. would be temporarily affected by dewatered areas and temporary fill.
- Under Alternatives 1A and 2, 0.10 acre of permanent fill would be placed in potentially jurisdictional "other waters" of the U.S., and 0.09 acre of potentially jurisdictional "other waters" of the U.S. would be temporarily affected by dewatered areas and temporary fill.

Waters of the State of California

The 2020 Natural Environment Study identified impacts to potentially jurisdictional waters of the State of California that also qualify as potentially jurisdictional waters of the U.S. under Alternatives 1A, 2, and 3. These waters are discussed above as "waters of the U.S."

Streams within the project's environmental study limits have beds and banks but do not support riparian vegetation. Strip plantings of ornamental trees along Mormon Slough and in Morelli Park on the south side and along West Fremont Street under the structure on the north side of the Stockton Deep Water Channel within the project's environmental study limits were not considered as riparian vegetation. The top of the bank and limits of non-federal waters of the State of California of the Stockton Deep Water was preliminarily considered to be the tidal "mean higher high water" mark, occurring at about 6.33 feet above mean sea level. A total of 0.16 acre of potentially jurisdictional waters of the State of California was preliminarily delineated within the project's environmental study limits.

Under Alternatives 1A, 2, and 3, the project may have impacts on potentially jurisdictional waters of the State. Construction activities associated with the

contractor's access to the Stockton Deep Water Channel including, but not limited to barge operation, the construction, use, and subsequent removal of temporary trestles, removal of landscape vegetation, and the storage and staging of construction equipment and materials would pose an impact to jurisdictional waters of the State.

Under Alternative 3, segments of potentially jurisdictional waters of the State of California would be occupied by permanent fill made up of portions of pile caps and bridge piers. The permanent fill would represent about (0.002 acre).

For this analysis, all remaining areas between the mean high tide line and the tidal "mean higher high water" mark in the Stockton Deepwater Channel within the project's environmental study limits would be considered as temporarily impacted by the project construction activities under Alternatives 1A, 2, and 3, which is about (0.07 acre).

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance, minimization, and/or mitigation measures are identified in the 2020 Natural Environment Study and would be submitted in the construction contract to minimize the impacts to wetlands and other waters. A detailed explanation can be found in Appendix E Avoidance, Minimization and/or Mitigation measures, or within the 2020 Natural Environment Study.

- ESA-1: Environmentally Sensitive Area Designation
- BIO-1: Designated Biologist
- BIO-2: Worker Environmental Awareness Training
- BIO-3: Limited Operation Period—In-Water Construction Activities
- BIO-4: Containment Measures/Construction Site Best Management Practices
- BIO-5: Restore and Revegetate Temporarily Disturbed Areas Onsite
- BIO-20: Compensatory Mitigation

2.3.2 **Animal Species**

Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service, National Oceanic and Atmospheric Administration's National Marine Fisheries Service, and 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 as threatened or endangered under the federal or state Endangered Species Act. Species listed or

proposed for listing as threatened or endangered are discussed in the Threatened and Endangered Species section, Section 2.2 in the 2020 Natural Environment Study. All other special-status animal species are discussed here, including California Department of Fish and Wildlife fully protected species and species of special concern, and U.S. Fish and Wildlife Service or National Oceanic and Atmospheric Administration's National Marine Fisheries Service candidate species.

Federal laws and regulations relevant to wildlife include the following:

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

State laws and regulations relevant to wildlife include the following:

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

Affected Environment

Project construction could cause impacts on special-status animal species. Additional details are provided in the 2020 Natural Environment Study.

The following existing information was reviewed to develop a list of special-status animal species potentially occurring within the project vicinity:

- California Natural Diversity Database record searches and Geographical Information System data referencing the Stockton West and Stockton East 7.5-minute U.S. Geological Survey quadrangles downloaded on July 1, 2020.
- U.S. Fish and Wildlife Service Official Species List, provided on July 1, 2020.
- National Oceanic and Atmospheric Administration National Marine Fisheries Service list, referencing the Stockton West and Stockton East 7.5-minute U.S. Geological Survey quadrangles, downloaded on July 1, 2020.
- California Department of Fish and Wildlife Special Animals List

The Caltrans August 2020 Natural Environment Study discusses the following animal species of special concern:

White Sturgeon

The white sturgeon is a fish species of special concern in California and can be found in saltwater from the Gulf of Alaska south to Ensenada, Mexico.

Spawning occurs in only a few large rivers from the Sacramento-San Joaquin Delta system northward. In California, the white sturgeon spawns mostly in the Sacramento River (to Keswick Dam) but may also spawn in the San Joaquin River and the Feather River (to Oroville Dam facilities) when water quality and flow conditions are favorable. The project's environmental study limit lies within the historic and current range of the white sturgeon. This species accesses the Stockton Deep Water Channel year-round. During the proposed in-water work window of June 1 to October 15, the white sturgeon could be present within the Stockton Deep Water Channel. The Stockton Deep Water Channel within the project's environmental study limit does not provide suitable spawning habitat for the white sturgeon.

Pacific Lamprey

The Pacific lamprey is a fish species of special concern in California and is in decline throughout its range in California. Pacific lampreys occur from Los Angeles to Del Norte counties throughout the rivers and sloughs of the Central Valley.

The project's environmental study limit lies within the historic and current range of the Pacific lamprey. This species accesses the Stockton Deep Water Channel seasonally. During the proposed in-water work window of June 1 to October 15, this species could be present within the Stockton Deep Water Channel. The Stockton Deep Water Channel within the project's environmental study limit does not provide suitable spawning habitat for the Pacific lamprey.

Western Brook Lamprey

The western brook lamprey is a fish species of special concern in California. Western brook lampreys are still present in the least disturbed portions of many watersheds, but all populations are likely small, isolated, and declining. Western brook lampreys occur in coastal streams from southeastern Alaska south to California and inland in the Columbia River and Sacramento-San Joaquin River drainages. California populations are found mostly in the Sacramento River watershed.

The project's environmental study limit is within the historic and current range of the western brook lamprey. This species accesses the Stockton Deep Water Channel seasonally. During the proposed in-water work window of June 1 to October 15, this species may be expected to be present within the Stockton Deep Water Channel. The Stockton Deep Water Channel within the project's environmental study limit does not provide suitable spawning habitat for the western brook lamprey.

Sacramento-San Joaquin Tule Perch

The Sacramento-San Joaquin tule perch is a species tracked by the California Natural Diversity Database. This species originally occurred

throughout Clear Lake, the Russian River, the Sacramento River, the San Joaquin River, and out into the estuaries around San Francisco Bay and the drainages of the Pajaro River and Salinas River. It is still common as far north as the Pit River, though it has mostly disappeared from the San Joaquin Basin.

The project's environmental study limit lies within the historic and current range of the Sacramento-San Joaquin tule perch. This species has access to the Stockton Deep Water Channel year-round. During the proposed in-water work window of June 1 to October 15, this species could be present within the Stockton Deepwater Channel. The Stockton Deep Water Channel within the project's environmental study limit may provide suitable spawning habitat for the Sacramento-San Joaquin tule perch.

Sacramento Hitch

The Sacramento hitch is a fish species of special concern in California. The Sacramento hitch was once found throughout the Sacramento Valley and San Joaquin Valley in low-elevation streams and rivers, as well as in the Sacramento-San Joaquin Delta. Today, the Sacramento hitch is absent from the San Joaquin River and the lower reaches of its tributaries. In the Sacramento-San Joaquin Delta, the Sacramento hitch seems to be largely confined to the northern Delta.

The project's environmental study limit lies within the historic and current range of the Sacramento hitch. This species accesses the Stockton Deep Water Channel year-round. During the proposed in-water work window of June 1 to October 15, this species could be present within the Stockton Deep Water Channel. The Stockton Deep Water Channel within the project's environmental study limit does not provide suitable spawning habitat for the Sacramento hitch.

Hardhead Catfish

The hardhead is a fish species of special concern in California. The hardhead is widely distributed in streams at low-elevation to mid-elevation in the drainages of the Sacramento River, San Joaquin River, and Russian River. In the Sacramento River drainage, the hardhead is found in most large tributaries, as well as in the Sacramento River itself.

The project's environmental study limit lies within the historic and current range of the hardhead. This species accesses the Stockton Deep Water Channel seasonally. During the proposed in-water work window of June 1 to October 15, this species could be present within the Stockton Deep Water Channel. The Stockton Deep Water Channel within the project's environmental study limit does not provide suitable spawning habitat for the hardhead.

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

The Central Valley Fall Run Evolutionarily Significant Unit and Central Valley Late Fall Run Evolutionarily Significant Unit Chinook Salmon are fish species of special concern in California. Migrations between the ocean and the river continue to be of concern because these fishes are supported, to a large extent, by hatchery production, which has ecological and genetic impacts on the sustainability of the fish species.

Today, in the watersheds of the Sacramento River and the San Joaquin River, these fishes spawn upstream as far as the first impassible dams. Passage into the mainstem San Joaquin River, above the confluence with the Merced River, is intentionally blocked at the California Department of Fish and Wildlife-operated weir at Hills Ferry. Levees also block access for juveniles to the historic floodplain and tidal marsh rearing habitats.

The project's environmental study limit lies within the historic and current range of the Central Valley Fall Run Evolutionarily Significant Unit and Central Valley Late Fall Run Evolutionarily Significant Unit Chinook Salmon. This species accesses the Stockton Deep Water Channel seasonally. During the proposed in-water work window of June 1 to October 15, this species could be present within the Stockton Deep Water Channel. The Stockton Deep Water Channel within the project's environmental study limit does not provide suitable spawning habitat for Chinook salmon.

Sacramento Splittail

The Sacramento splittail is a fish species of special concern in California and was recently de-listed (2003) as a threatened species by the U.S. Fish and Wildlife Service because of the demonstrated resiliency of its populations.

The Sacramento splittail is now mainly confined to the San Joaquin Delta, Suisun Bay, Suisun Marsh, Napa River, Petaluma River, and other parts of the San Francisco Estuary while spawning on upstream floodplains and channel edges. In the Delta, the Sacramento splittail is most abundant in the north and west portions, though other areas may be used for spawning.

The project's environmental study limit lies within the historic and current range of the Sacramento splittail. This species accesses the Stockton Deep Water Channel year-round. During the proposed in-water work window of June 1 to October 15, this species could be present within the Stockton Deep Water Channel.

Western Pond Turtle

The western pond turtle is a species of special concern. Western pond turtles are associated with permanent or nearly permanent water sources in a wide variety of habitat types, including marshes, rivers, ponds, lakes, streams,

irrigation ditches, or permanent pools. Western pond turtles require basking sites such as partially submerged logs, rocks, mats of floating vegetation, or open mud banks.

The project's environmental study limit lies within the historic and current range of the western pond turtle. The Stockton Deep Water Channel, within the project's environmental study limit, provides suitable dispersal and foraging habitat, as well as potential upland and breeding habitat along the levee banks. Potential habitat for the western pond turtle is constrained by nearby urban development on both sides of the levees of the Stockton Deep Water Channel. No western pond turtles were seen during aquatic wildlife surveys conducted in the project's environmental study limit.

Migratory Birds and Raptors

The Migratory Bird Treaty Act makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in Section 50 Code of Federal Regulations, Part 10, including feathers or other parts, nests, eggs or products, except as allowed by implementing regulations (Section 50 Code of Federal Regulations, Part 21). Several species of migratory birds could potentially nest on the ground or within shrubs and trees within the project's environmental study limit.

Suitable nesting habitat for nesting migratory birds, including raptors, occurs within the project's environmental study limit. Migratory birds and raptors could nest in appropriate habitats there, including structures, vegetation, mammal burrows, and ground-nesting sites, between February 1 and September 30.

Cliff swallows and barn swallows are often seen nesting on the existing bridge structures, particularly at sites over water. However, swallow nests are generally not seen on any of the existing Stockton Viaduct Bridge structures or any of the Interstate 5/State Route 4 interchange structures within the project's environmental study limits during site visits. Steel girders below the bridge deck overhangs do not provide suitable surfaces for swallow nesting. During site visits conducted between October 2017 and April 2020, only the April 2020 survey revealed the presence of a past-season swallow nest attached to a delaminated concrete spall on the concrete bridge deck overhang of the northbound Stockton Channel Viaduct Bridge structures.

Barn owls are known to nest in mature palm trees. No sign of barn owls (scat, pellets) was detected in mature palm trees within the project's environmental study limit during surveys in April 2019.

Bats

Several species of special-status and non-special-status bats could potentially roost in the project's environmental study limit. In addition to bat species listed as sensitive by the resource agencies, state laws protect bats

and their occupied roosts from harassment and destruction, such as California Fish and Game Code Sections 2000, 2002, 2014, and 4150, and California Code of Regulations Section 251.1.

The project's environmental study limit was surveyed for bat presence or assessed for the potential presence of bat day roosts—areas used by bats from about sunrise to sunset to sleep and raise their young—or bat night roosts—used by bats from about sunset to sunrise to rest and digest their food. Survey results detected the presence of structure roosting bats within the project area.

The project's environmental study limit contains structures—bridges and buildings—that could potentially provide day or maternity roosts—areas for bats to birth their young—for bats. The existing Stockton Channel Viaduct Bridge structures could potentially provide day or maternity roosts for bats that roost on structures. Such roosts are often found in expansion joints or other crevices. Ideal crevices are 0.75 inch to 1 inch wide.

The north side of the Stockton Deep Water Channel within the project's environmental study limit includes commercial buildings below the existing Stockton Channel Viaduct Bridge and Pershing Avenue off-ramp structures at West Fremont Street that may potentially provide day roosts for bats that roost in crevices. Structures within the project's Action Area could also potentially serve as bat night roosts.

The project's environmental study limit contains landscape tree plantings along the highway embankment slopes, along local roads, and at interchange "cloverleaf" areas. These small-sized trees to medium-sized trees generally lack cavities and exfoliating bark that are often preferred by bats that roost in trees. Mature palm trees are known to support day and maternity roosts for bat species that roost in crevices and trees. Mature palm trees within the project's environmental study limit could serve as bat night roosts.

Environmental Consequences

Project construction could cause impacts on special-status animal species or species of special concern. Additional details are provided in the 2020 Natural Environment Study.

The California Fish and Game Code Section 86 defines "take" as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." This definition of take would be applied to all special-status animal species considered as California species of concern, California Endangered Species Act-listed or California Endangered Species Act candidate species, California Department of Fish and Wildlife Watch List species, California Fully Protected species, or "rare" California species analyzed in this document. Consultation with California Department of Fish and Wildlife under California Fish and Game Code Section 1600 would be required to address any

common fish species or fish species considered as California species of concern, California Department of Fish and Wildlife Watch List, California Fully Protected, or "rare."

The Migratory Bird Treaty Act makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 Code of Federal Regulations Section 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations. (50 Code of Federal Regulations Section 21) The Migratory Bird Treaty Act in 50 Code of Federal Regulations Section 10.12 defines "take" as "pursue, hunt, shoot, wound, kill, capture, trap, or collect." This definition of take would be applied to all Migratory Bird Treaty Act-listed bird species, including raptors, analyzed in this document. With the implementation of avoidance measures, the proposed construction within the project's environmental study limits is not expected to result in the "take" (as defined by the Migratory Bird Treaty Act) of any migratory birds or their active nests under Alternatives 1A, 2, or 3.

Special-Status Fish Species

Special-status fish species that may be impacted by the project's construction activities include the white sturgeon, Pacific lamprey, western brook lamprey, Sacramento-San Joaquin tule perch, Sacramento hitch, hardhead, Central Valley Fall/Late Fall-Run Evolutionary Significant Unit Chinook salmon, and Sacramento splittail. Potential impacts to special-status fish species from the construction of the project's three build alternatives include the following: permanent and temporary fill; underwater barotrauma (sound); dewatering activities; vegetation removal; structure shading; sediment mobilization; contaminates/toxic chemicals; construction lighting; and, noise. Each impact is discussed further below. For a detailed discussion of the effects from construction activities to specials-status fish species, please refer to the 2020 Natural Environment Study.

Effects of Permanent and Temporary Fill

Permanent and temporary fill would result in the permanent or temporary displacement of habitat for special-status fish species. Under Alternatives 1A and 2, permanent fill would be placed within the Stockton Deep Water Channel in the form of permanent piles, pile caps, and bent columns. The permanent and temporary fill would displace the aquatic habitat of special-status fish species where they would normally occupy. Below is a discussion of the approximate effects permanent and temporary fill may have.

Under Alternatives 1A and 2, permanent fill would be placed within the Stockton Deep Water Channel in the form of permanent piles, pile caps, and bent columns:

- Piles would be used to support the Stockton Channel Viaduct Bridge beneath the water as a foundation where the pile caps and bent columns

would be placed. It is estimated that the permanent placement of piles would occupy 0.02 acre within the Stockton Deep Water Channel.

- It is estimated that the construction of two concrete pile caps would permanently impact 0.08 acre within the Stockton Deep Water Channel.
- It is estimated that the center widening at bents 8 and 9 would permanently impact 0.002 acre of the Stockton Deep Water Channel.

Under Alternatives 1A and 2, temporary fill would be placed within the Stockton Deep Water Channel in the form of temporary piles:

- Construction of temporary trestles under Alternatives 1A and 2 is estimated to temporarily impact 0.01 acre of the Stockton Deep Water Channel.
- Additionally, the preliminary cofferdam concept during construction activities would temporarily add 25.12 square feet of fill and temporarily displace 3,721 cubic feet of the water column.

Under Alternative 3, permanent fill would be placed within the Stockton Deep Water Channel in the form of permanent foundation piles, pile caps, and bent columns:

- Under Alternative 3, construction of the foundation piles would permanently occupy about 0.02 acre of the water column within the Stockton Deep Water Channel
- Under Alternative 3, reinforced concrete pile caps associated with the new pile foundations for the new viaduct structure would be permanently occupied with permanent fill in an area of about 0.11 acre below the high-water mark of the Stockton Deep Water Channel to build the new viaduct foundation pile caps.
- Under Alternative 3, the construction of bridge pier columns would permanently occupy 0.01 acre of the water column of the Stockton Deep Water Channel.

Under Alternative 3, temporary fill would be placed within the Stockton Deep Water Channel in the form of temporary piles:

- Under Alternative 3, construction of temporary trestle piles would temporarily occupy about 0.01 acre of the area; it would also temporarily displace about 753.60 cubic yards of the water column within the Stockton Deep Water Channel.
- Under Alternative 3, the installation of temporary sheet pile cofferdams is expected to result in a maximum total of about 14,715.80 square feet (0.34 acre) of the temporarily dewatered area and 21,801.19 cubic yards of the dewatered water column in the Stockton Deep Water Channel.

Underwater Barotrauma

Under Alternatives 1A, 2, and 3, the effects of underwater barotrauma resulting from pile driving activities may result in take due to mortality to special-status fish species considered as California species of concern.

Underwater barotrauma is defined as the physical or behavioral impact on aquatic species caused by underwater sound due to construction activities. Barotrauma analysis using the Caltrans 2015 Technical Guidance document was performed to assess barotrauma to fish in the Action Area. The rate of sound reduction through a body of water was used to predict the area that would be exposed to direct and indirect effects. (Natural Environment Study, 2020)

Effects of Dewatering Activities

Under Alternatives 1A, 2, and 3, proposed dewatering activities associated with foundation pile construction may require fish salvage. Fish salvage activities would result in take due to pursuit, catch, and/or capture of special-status fish species considered as California species of concern.

Effects of Vegetation Removal

Under Alternatives 1A, 2, and 3, it is assumed that the mature trees that occur within the project's environmental study limits next to the banks of the Stockton Deep Water Channel would be removed to facilitate contractor access and construction activities resulting in a loss of 0.62 acre of streamside canopy coverage.

Effects of Structure Shading

The existing viaduct consists of a pair of parallel structures with an overall outside width of about 180 feet and with a center gap measuring about 20 feet. Under Alternatives 1A, 2, and 3 the outside width of the overall structure would remain about the same; however, the center gap would be replaced with a new viaduct center section. The closure of the existing center gap would increase to about 0.34 acre of the shaded area from baseline conditions occurring directly over the waters of the Stockton Deep Water Channel. This represents an approximate 0.3 percent increase in the shaded area from the existing current viaduct bridge structure. The construction of the new viaduct structure is expected to have little or no effect on the biological productivity of aquatic habitat within the project's Action Area.

Overwater structures can affect the amount of light that reaches the water in the waterway, which can limit plant growth, affect prey species that special-status species rely on for food, which can increase the risk of special-status fish mortality.

Effects of Mobilization of Sediment

The abundance, distribution, and survival of fish populations have been linked to levels of turbidity (water disruption) and silt deposition. Prolonged exposure to high levels of suspended sediment could reduce visual capability in fish, reduce feeding and growth rates, and cause the loss of respiratory function.

Increased turbidity levels associated with Alternatives 1A, 2, and 3 of the Stockton Channel Viaduct Improvements projects are not expected to physically injure special-status fish species or result in adverse behavioral effects. These levels would likely result in some limited behavioral effects, such as temporarily reduced feeding efficiency of special-status fish species. These behavioral changes are not expected to cause mortality or decrease the probability of survival of individual juvenile or adult special-status fish species.

Under Alternatives 1A, 2, and 3, moderate but temporary increases in turbidity are expected to occur during pile driving activities, during the removal of piles, and during barge operations. Except for Sacramento tule perch, spawning habitat for special-status fish species considered in this document is not available within the project's environmental study limits. Adverse effects to spawning habitat for these species resulting from suspended and/or deposited fine sediment are not expected to occur.

The proposed Stockton Channel Viaduct Bridge Improvements Project has developed avoidance and minimization measures that would reduce the probability of and/or the amount of mobilization of sediment into the Stockton Deep Water Channel. These measures are discussed in the 2020 Natural Environment Study and Appendix E in this document

Effects of Contaminants/Toxic Chemicals

Under Alternatives 1A, 2, and 3, the proposed project could involve the storage, use, or discharge of toxic and other harmful substances near aquatic habitat that could result in contamination of these water-bodies and potentially affect fish and other aquatic organisms.

The proposed project has developed avoidance and minimization measures that would reduce the probability of aquatic habitat contamination due to exposure to toxic or hazardous substances.

Effects of Construction Noise and Lighting

For Alternatives 1A, 2, and 3, temporary noise disturbances caused by construction equipment, including the use of pile drivers, barges, and associated equipment, would occur during construction. The likely effects on special-status fish species would be the avoidance of habitat next to the construction area. The above-water noise effects of construction equipment

are not expected to rise to a level that would result in injury to or direct mortality of special-status fish species.

Night work is proposed, and temporary lighting of work areas to facilitate nighttime construction, including areas over the Stockton Deep Water Channel, is expected to occur. It is also expected that permanent navigational lighting may be installed below the bridge deck. When artificial lighting shines near waterways, it can penetrate the water and affect fish behavior by altering their natural circadian cycle. Light pollution can affect the survival of special-status fish species in multiple ways. Individuals of some species, which may include predators, are attracted to lights, which can alter nighttime swimming behavior. Specific light frequencies can change the timing of sexual maturation or migratory timing.

The proposed project has developed avoidance and minimization measures that would reduce the probability of disturbance, injury, or mortality of special-status fish species due to noise and lighting.

Special-Status Animal Species

Impacts on special-status animal species, including western pond turtles, migratory birds and raptors, and bats could be caused by construction activities. Additional details are provided in the 2020 Natural Environment Study.

Western Pond Turtle

During construction activities in aquatic habitat under Alternatives 1A, 2, and 3, western pond turtles may be potentially affected by permanent or temporary fill in aquatic habitat, underwater sound exposure, exposure to sediment, toxic chemicals, artificial shading, or by noise or lighting. With the implementation of avoidance measures, the proposed construction within the project's environmental study limits is not expected to result in the "take" (as defined by the California Fish and Game Code Section 86) of western pond turtles under Alternatives 1A, 2, or 3.

Migratory Birds and Raptors

Under Alternatives 1A, 2, and 3, the project proposes construction activities—structure work, vegetation removal, ground disturbance, noise, lighting, or other physical disturbances—that could potentially result in adverse impacts to nesting migratory bird individuals, their occupied nests, eggs, or chicks. Construction activities from all three build alternatives have the potential to result in temporary adverse effects to potential foraging and nesting habitat for many bird species. Construction noise for all three build alternatives is not expected to cause any long-term adverse effects on migratory bird species.

With the implementation of avoidance measures, the proposed construction activities are not expected to result in the "take" (as defined by the Migratory

Bird Treaty Act) of any migratory birds or their active nests under Alternatives 1A, 2, or 3. These measures are discussed in the 2020 Natural Environment Study and Appendix E in this document.

Bats

Under Alternatives 1A, 2, and 3, the project proposes construction activities—structure work, tree removal, construction noise, and lighting—that could potentially result in adverse impacts to day-roosting or maternity-roosting bats or night roosts. Potential impacts to special-status bat species caused by project construction would remove potential bat habitat in the expansion joints, gaps, and groves in the existing viaduct bridges. Additionally, the removal of the existing commercial structures located within would remove potential habitat, such as groves, overhang, and other building structure elements.

Tree-Roosting Bats: Mature trees suitable as potential day roosts for bats occur within and next to the project's environmental study limits. Under Alternatives 1A, 2, and 3, large mature landscape strip trees that occur next to Mormon Slough on the south side are expected to be preserved during construction activities. Although woody vegetation removal would be limited as much as feasible. It is assumed that all other trees within the project's environmental study limits that occur in freeway interchange loops and highway embankments are potentially subject to removal because contractors may choose to use these areas as construction staging or storage areas. Additionally, it is assumed that any trees that occur within about 50 feet of the existing viaduct structure are also potentially subject to removal to facilitate construction activities. Based on these assumptions, an unknown number of mature trees potentially suitable as day roost habitat for bats may be removed as a result of project construction under Alternatives 1A, 2, and 3. Additionally, tree-roosting bats would be affected by construction noise, temporary construction lighting, permanent structure lighting, and any proposed night work for construction.

The 2020 Natural Environment Study identified some beneficial effects from the construction of Alternative 3. Under Alternative 3, the new viaduct superstructure section would consist of multiple, parallel, nearby cast-in-place, prestressed concrete box girders. The concrete construction material and full sun exposure of the new viaduct structural section would represent ideal potential roosting habitat for crevice-roosting bats. The three parallel structures of the new viaduct structure would be tied together into a single structure on deck using closure pours, leaving opportunities for habitat features between the spans below deck. Bats use parallel concrete box beam bridges more than any other kind. Preliminary plans also indicate that each of the parallel viaduct structures would require two expansion joints under Alternative 3. These expansion joints would provide suitable habitat for special-status bats.

Under Alternatives 1A, 2, and 3, avoidance measures (exclusion devices) are expected to be feasible to implement for structure-roosting bats. With the implementation of avoidance measures, the proposed construction activities within the project's environmental study limits are not expected to result in the take (as defined by California Fish and Game Code Section 86) of structure-roosting bats.

Under Alternatives 1A, 2, and 3, avoidance measures (exclusion devices) would likely be infeasible to implement in habitats for tree-roosting bat species (mature trees) within the project's environmental study limits. Minimization measures would be implemented to reduce the potential for the proposed construction activities within the project's environmental study limits to result in the take and/or to minimize the extent of take (as defined by California Fish and Game Code Section 86) of tree-roosting bats.

These avoidance measures are discussed in detail in the 2020 Natural Environment Study and Appendix E in this document.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance, minimization, and/or mitigation measures are proposed under Alternatives 1A, 2, and 3 to avoid, minimize, or mitigate adverse effects to special-status animal species for the selected build alternative. A detailed discussion of the avoidance, minimization, and/or mitigation measures can be found in the 2020 Natural Environment Study or Appendix E in this document.

- ESA-1: Environmentally Sensitive Area Designation
- BIO-1: Designated Biologist
- BIO-2: Worker Environmental Awareness Training for Construction Personnel
- BIO-3: Limited Operation Period—In-Water Construction Activities
- BIO-4: Containment Measures/Construction Site Best Management Practices
- BIO-5: Restore and Revegetate Temporarily Disturbed Areas Onsite
- BIO-6: Vibratory Pile Installation
- BIO-7: Impact Pile Driving Attenuation
- BIO-8: Daily Limited Operation Period—Impact Pile Driving
- BIO-9: Salvage Species from Dewatered Areas
- BIO-10: Construction and Structure Lighting
- BIO-11: Migratory Birds and Raptors—Remove Nesting Habitat During Non-Nesting Season
- BIO-12: Migratory Birds and Raptors—Exclusionary Devices

- BIO-13: Migratory Birds and Raptors—Pre-Construction Surveys During Nesting Season
- BIO-14: Migratory Birds and Raptors—Protective Buffers
- BIO-15: Migratory Birds and Raptors—Construction Monitoring
- BIO-16: Bats—Exclusionary Devices
- BIO-17: Bats—Pre-Construction Surveys
- BIO-18: Bats—Protective Buffers
- BIO-19: Bats—Construction Monitoring

2.3.3 Threatened and Endangered Species

Regulatory Setting

The main federal law protecting threatened and endangered species is the Federal Endangered Species Act, 16 U.S. Code Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration (and Caltrans, as assigned), are required to consult with the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take statement or a Letter of Concurrence. Section 3 of Federal Endangered Species Act defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the California Endangered Species Act, California Fish and Game Code Section 2050, and following sections. The California Endangered Species Act emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. The California Department of Fish and Wildlife is the agency responsible for implementing 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 attempt to hunt, pursue, catch, capture, or kill." The California Endangered Species Act allows for take incidental to otherwise lawful development

projects; for these actions, an incidental take permit is issued by the California Department of Fish and Wildlife.

For species listed under both 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 a 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 fishery resources of the U.S., 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 fishery resources, and fishery resources in special areas.

Affected Environment

Project construction could cause impacts on animal species listed under the Federal Endangered Species Act, the California Endangered Species Act, or Essential Fish Habitat under the jurisdiction of the Magnuson-Stevens Fishery Conservation and Management Act. Additional details are provided in the Caltrans Biological Assessment dated October 22, 2019, U.S. Fish and Wildlife Letter of Concurrence dated December 17, 2019, the National Marine Fisheries Service Biological Opinion dated June 23, 2020, and the Caltrans Natural Environment Study, dated August 21, 2020.

Federal Endangered Species Act Consultation Summary: The proposed project was reviewed in sufficient detail to determine whether the proposed action may affect any threatened, endangered, or species listed by the Federal Endangered Species Act. The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration, will prepare a biological assessment under its assumption of responsibility at 23 U.S. Code 327(a)(2)(A). The biological assessment is also prepared per 50 Code of Federal Regulations 402, legal requirements found in Section 7 (a)(2) of the Federal Endangered Species Act (16 U.S. Code 1536(c)), and with Federal Highway Administration and Caltrans regulation, policy, and guidance.

Federal Endangered Species Act Section 7 consultation has proceeded under Alternative 3. However, the federal Action Area and the determinations summarized below are the same in Alternatives 1A, 2, and 3.

The U.S. Fish and Wildlife Service provided its official species list for the project's Action Area on July 1, 2020. A National Marine Fisheries Service list and a California Natural Diversity Database list referencing the Stockton West and Stockton East U.S. Geologic Survey quadrangles were downloaded on July 1, 2020.

Caltrans requested technical assistance from Lyla Pirkola of the National Marine Fisheries Service and Kim Squires of the U.S. Fish and Wildlife Service in an email dated April 29, 2019. On April 29, 2019, Lyla Pirkola concurred with the 1,000-meter guidance for the determination of the Action Area based on the effects of underwater sound provided in the Caltrans 2015 Compendium. On May 1, 2019, Kim Squires also concurred with the 1,000-meter guidance provided in the Caltrans 2015 Compendium. The Action Area for the Stockton Viaduct Improvements Project would therefore include the entire project's environmental study limits as well as all connecting waterways extending up to 3,280 feet (0.62 mile) away from the underwater sound source.

Caltrans requested a consultation with the U.S. Fish and Wildlife Service under Section 7 of the Federal Endangered Species Act in a correspondence dated October 29, 2019. In the October 29, 2019, correspondence, Caltrans initially determined that the project "may affect and is likely to adversely affect" the Federal Endangered Species Act-threatened Delta smelt and its designated critical habitat. Caltrans discussed the project with Brian Hansen of the U.S. Fish and Wildlife Service. Upon review of the current status of the Delta smelt, seasonal timing, and the location of the project, Caltrans changed its determination to "may affect but is not likely to adversely affect" the threatened Delta smelt or its designated critical habitat. On December 17, 2019, the U.S. Fish and Wildlife Service provided a "letter of concurrence" with Caltrans' determination that the Stockton Channel Viaduct Bridge Improvements Project "may affect but is not likely to adversely affect" the threatened Delta smelt or its designated critical habitat.

Caltrans determined that the proposed Stockton Channel Viaduct Bridge Improvements Project "may affect and is likely to adversely affect" the Federal Endangered Species Act-listed green sturgeon-Southern Distinct Population Segment and the Federal Endangered Species Act-listed Central Valley steelhead and their designated critical habitat. Caltrans also requested a consultation with the National Marine Fisheries Service under Section 7 of the Federal Endangered Species Act in a correspondence dated October 29, 2019. On November 15, 2019, Lyla Pirkola of the National Marine Fisheries Service emailed Caltrans requesting additional information before initiating formal Federal Endangered Species Act consultation.

On December 3, 2019, Caltrans responded to the National Marine Fisheries Service's November 15, 2019 request for additional information, and the

National Marine Fisheries Service initiated formal Federal Endangered Species Act Section 7 consultation on December 17, 2019.

The National Marine Fisheries Service requested that Caltrans update its determinations to include federally threatened Central Valley Spring-Run Chinook Salmon; the consultation was paused at that time. On February 7, 2020, Lyla Pirkola and Ellen McBride of the National Marine Fisheries Service and James P. Henke and Jason Meigs of Caltrans discussed project mitigation options, including compensatory mitigation. On February 28, 2020, Caltrans responded by updating its determinations to include that the project was "not likely to adversely affect" Federal Endangered Species Act-listed Central Valley Spring-Run Chinook Salmon.

On March 13, 2020, Ellen McBride and Lyla Pirkola of the National Marine Fisheries Service and James P. Henke and Jason Meigs of Caltrans met onsite to discuss project impacts and mitigation. On April 14, 2020, the National Marine Fisheries Service received additional information from Caltrans regarding proposed mitigation. On April 22, 2020, Lyla Pirkola requested clarification on the proposed mitigation. On April 23, 2020, Caltrans responded with sufficient information, and consultation initiation was reset and restarted. The National Marine Fisheries Service issued a Biological Opinion in a correspondence dated June 23, 2020.

California Endangered Species Act Consultation Summary: The California Endangered Species Act mandates that state agencies should not approve projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. (Fish and Game Code 2050 et seq.) The California Department of Fish and Wildlife regulates activities related to fish, wildlife, and plants in California and is responsible for administering the California Endangered Species Act.

If take of a state-listed species is unavoidable, an application per California Fish and Game Code Section 2081 would be prepared. The California Department of Fish and Wildlife has the authority under Section 2081 of the California Fish and Game Code to issue permits for the take of species listed under the California Endangered Species Act (state-listed species) if the take is incidental to an otherwise lawful development project; California Department of Fish and Wildlife has determined that the effects of the take have been minimized and fully mitigated; and, the take would not jeopardize the continued existence of the species. For projects that would affect both a state and federally listed species, compliance with the Federal Endangered Species Act would satisfy the California Endangered Species Act if the California Department of Fish and Wildlife determines that the federal incidental take authorization is "consistent" with the California Endangered Species Act under California Fish and Game Code Section 2080.1.

The project area is outside the range of the species mentioned above because of its lack of suitable habitat or habitat components and/or because the project would not harm individuals or alter the species' habitat. Caltrans has determined that the proposed project would not result in "take" (as defined by California Fish and Game Code Section 86) of species listed or candidates for proposed for listing under the California Endangered Species Act administered by the California Department of Fish and Wildlife under Alternatives 1A, 2, and 3.

The Magnuson-Stevens Fishery Conservation and Management Act Consultation Summary, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires federal agencies to consult with the National Marine Fisheries Service on activities that may adversely affect Essential Fish Habitat. Essential Fish Habitats are those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. Important components of Essential Fish Habitat are substrate; water quality; water quantity, depth, and velocity; channel gradient and stability; food; cover and habitat complexity; space; access and passage; and habitat connectivity. Only species covered by a Fishery Management Plan need to be considered for Essential Fish Habitat coordination.

Caltrans has determined that the proposed project may adversely affect Essential Fish Habitat for Pacific groundfish and Chinook salmon under Alternatives 1A, 2, and 3. Potential effects on Essential Fish Habitat related to the disturbance of stream substrate, sedimentation, turbidity, hazardous materials, and contaminants during in-water construction activities, including pile driving, would be temporary. Implementation of the proposed project under either build alternative is not expected to result in permanent changes or adverse effects to water quantity, water depth, water velocity, channel gradient and stability, availability of food or cover, habitat complexity, space, access, passage, or habitat connectivity to Essential Fish Habitat for Pacific groundfish and Chinook salmon within the Stockton Deep Water Channel.

Because the project proposes construction activities within waters identified as Essential Fish Habitat, consultation with the National Marine Fisheries Service under the Magnuson-Stevens Fisheries Management Act would be required under Alternatives 1A, 2, and 3. Caltrans requested a consultation with the National Marine Fisheries Service under Magnuson-Stevens Fisheries Management Act for Alternative 3 in a correspondence dated October 29, 2019, and the National Marine Fisheries Service initiated Magnuson-Stevens Fisheries Management Act consultation on December 17, 2019. The National Marine Fisheries Service provided its Essential Fish Habitat recommendations in a correspondence dated June 23, 2020.

The following existing information was reviewed to develop a list of animal species listed under the Federal Endangered Species Act and the California Endangered Species Act potentially occurring within the project vicinity:

- California Natural Diversity Database record searches and Geographical Information System data referencing the Stockton West and Stockton East 7.5-minute U.S. Geologic Survey quadrangles was downloaded on July 1, 2020.
- The U.S. Fish and Wildlife Service's official species list was provided on July 1, 2020.
- National Oceanic and Atmospheric Administration and National Marine Fisheries Service List, referencing the Stockton West and Stockton East 7.5-minute U.S. Geologic Survey quadrangles, was downloaded on July 1, 2020.
- The National Marine Fisheries Service Essential Fish Habitat Mapper (http://www.habitat.noaa.gov/protection/efh/efhmapper/) was accessed on July 1, 2020.

The Caltrans Biological Assessment, U.S. Fish and Wildlife Letter of Concurrence, the National Marine Fisheries Service Biological Opinion, and the Caltrans Natural Environment Study discussed the following threatened, endangered, or proposed threatened or endangered species:

Green Sturgeon, Southern Distinct Population Segment

The Green Sturgeon-Southern Distinct Population Segment is a threatened species under the Federal Endangered Species Act. Designated critical habitat for this species occurs within the Action Area in the Stockton Deep Water Channel.

The Green Sturgeon-Southern Distinct Population Segment ranges from the Alaska Bering Sea to Ensenada, Mexico, with abundance increasing north of Point Conception, California. The adults spawn every 2 to 4 years. Beginning in late February, travels from the ocean into freshwater to begin spawning migration. The juveniles rears and feeds in freshwater and estuarine (a mix of freshwater and saltwater) waters from 1 to 4 years before dispersing into marine waters as a subadult.

The project's Action Area lies within the historic and current range of the Green Sturgeon-Southern Distinct Population Segment. Migrating juveniles, subadults, and adults are widely distributed in the Sacramento-San Joaquin Delta and estuary areas. This species has unrestricted access to the Stockton Deep Water Channel, and juveniles may be expected to access the Stockton Deep Water Channel year-round.

During the proposed in-water work window of June 1 to October 15, this species may be present within the Stockton Deep Water Channel. The Stockton Deep Water Channel within the project's Action Area does not provide suitable spawning habitat for the Green Sturgeon-Southern Distinct Population Segment.

Delta Smelt

The Delta smelt is a threatened species under the Federal Endangered Species Act and endangered under the California Endangered Species Act. Designated critical habitat for this species occurs within the Action Area in the Stockton Deep Water Channel.

The Delta smelt is found only from the Suisun Bay upstream through the Delta in Contra Costa, Sacramento, San Joaquin, Solano, and Yolo counties. The range of the Delta smelt in the San Joaquin River is thought to extend to the City of Lathrop. The Delta smelt has a life span that runs to 1 year shortly after spawning. It spawns in river channels and tidally influenced backwater sloughs.

- The project's Action Area lies within the historic and current range of the Delta smelt. The Delta smelt has unimpeded access to the Stockton Deepwater Channel from the San Joaquin River and may be expected to access the Stockton Deep Water Channel, at least seasonally. It is unlikely that the Stockton Deep Water Channel within the project's Action Area provides suitable spawning habitat for the Delta smelt.
- According to the U.S. Fish and Wildlife Service (2019), the project area would not provide suitable habitat for Delta smelt during the summer and fall months, and it is likely that Delta smelt would not be present during the time frames (June 1 to October 15) of in-water construction in the project area.
- The aquatic environment is typically low in dissolved oxygen during the summer and fall months and lacks an ecology that would promote sufficient food production to sustain Delta smelt. Temperatures during the summer and fall months are also typically too hot for the Delta smelt's metabolism.

Steelhead Trout, California Central Valley Distinct Population Segment

The Steelhead Trout, California Central Valley Distinct Population Segment is a threatened species under the Federal Endangered Species Act. Currently, the Steelhead Trout, California Central Valley Distinct Population Segment includes steelhead trout in all river reaches accessible to the Sacramento and San Joaquin rivers and their tributaries in California. Designated critical habitat for this species occurs within the Action Area in the Stockton Deep Water Channel.

Adult steelhead trout enter the San Joaquin River freshwater system sometime between July through August. Peak migration of adults moving upriver occurs from September through February. Adult steelhead trout will hold until flows are high enough in the tributaries to move into riffle areas where they will spawn from December to April. Steelhead kelt (an adult steelhead that has successfully spawned) migrating back through the freshwater system to the Pacific Ocean may persist in the California Central

Valley from December through May, living for lengths of time in the Sacramento-San Joaquin Delta as they make the transition back to saltwater physiology.

Steelhead Trout, California Central Valley Distinct Population Segment have unimpeded access to the Stockton Deep Water Channel from the San Joaquin River and may be expected to access the Stockton Deep Water Channel, at least seasonally due to baseline water quality conditions. The Stockton Deep Water Channel does not provide suitable habitat for Steelhead Trout, California Central Valley Distinct Population Segment during the summer months, and it is likely that California Central Valley steelhead would not be present during the proposed in-water work window of June 1 to October 15. The Stockton Deep Water Channel is likely a deterrent for the California Central Valley steelhead because it is a low-quality habitat that occurs in a shipping traffic corridor. The aquatic environment is typically low in dissolved oxygen during the summer and fall months, and temperatures during the summer and fall months are also usually too warm for California Central Valley steelhead metabolism.

Central Valley Spring-Run Chinook Salmon San Joaquin River Experimental Population

In 2013, the National Marine Fisheries Service designated the Central Valley Spring-Run Chinook Salmon that was reintroduced to the San Joaquin River as an experimental nonessential population per Section 10(j) of the Federal Endangered Species Act. (78 Federal Register 79622) This allows for the release of threatened Central Valley Spring-Run Chinook Salmon outside their current range. The population is considered an experimental, nonessential population (meaning that if the population doesn't survive, it will not threaten the whole evolutionarily significant unit because the population is geographically separate from the protected population of the same species).

According to the final rule under the Federal Endangered Species Act Section 10(j), reintroduced Central Valley Spring-Run Chinook Salmon San Joaquin River Experimental are designated as a nonessential experimental population inside of the experimental population area, which is generally in the San Joaquin River from its confluence with the Merced River upstream to Friant Dam. (78 Federal Register 79622; December 31, 2013) However, outside of the experimental population area, Central Valley Spring-Run Chinook Salmon are considered part of the Central Valley Spring-Run Chinook Salmon Evolutionarily Significant Unit, which is listed as a threatened species under the Federal Endangered Species Act.

The project's Action Area is within the historical range of the Central Valley Spring-Run Chinook Salmon. Waters within the Sacramento-San Joaquin Delta and the Stockton Deep Water Channel are not suitable for Chinook

salmon spawning, and adult Chinook salmon probably do not feed in the Delta.

The Action Area for the proposed project occurs outside of the experimental population area; however, it is near the migration corridor that the reintroduced fish must take to reach the ocean or return to the experimental population area. The Central Valley Spring-Run Chinook San Joaquin River Experimental Population has unimpeded access to the Stockton Deep Water Channel from the San Joaquin River and could potentially access the Stockton Deep Water Channel, at least seasonally. Due to baseline water quality conditions discussed above, the channel would not provide suitable habitat for salmon during the summer and fall months, and it is likely that Central Valley Spring-Run Chinook Salmon San Joaquin River Experimental would not be present during the proposed in-water work window of June 1 to October 15.

Longfin Smelt

The longfin smelt is a threatened species under the California Endangered Species Act and is a candidate for listing under the Federal Endangered Species Act.

Scattered populations of the longfin smelt occur along the Pacific Coast of North America from Alaska to the San Francisco Bay Estuary. According to the California Department of Fish and Wildlife, the longfin smelt has been collected in the Cache Slough Complex (including in the nearby lower Stockton Deep Water Channel), the Yolo Bypass, the lower Sacramento River to almost the City of Sacramento, the Mokelumne River to Hog Slough, within the San Joaquin River to the vicinity of Turner Cut Island and Rough and Ready Island, and in the South Sacramento-San Joaquin Delta. Longfin smelts spend their adult life in bays, estuaries, and nearshore coastal areas and migrate into freshwater rivers to spawn.

The project's Action Area lies within the historic and current range of the longfin smelt, but the project's Action Area is thought to be at the upstream edge of the species' distribution. Larval survey data from the Bay-Delta indicate that longfin smelt spawning occurs from November through May, with a peak from February through April, after which most adults die. Longfin smelt spawning is expected to occur outside of the in-water work window, and longfin smelts are expected to spawn downstream and outside of the project's Action Area. Longfin smelts spend their adult life in bays, estuaries, and nearshore coastal areas and migrate into freshwater rivers to spawn. Adult longfin smelts are therefore not expected to be present in the project's Action Area at any time of the year.

Swainson's Hawk

The Swainson's hawk is a threatened species under the California Endangered Species Act.

The Swainson's hawk breeds in open habitats throughout much of the western U.S. and Canada, and in northern Mexico. In California, breeding populations of Swainson's hawks occur in the desert, shrub-steppe grassland (low rainfall natural grassland), and agricultural habitats. However, most of the state's breeding sites are in two disjunct—geographically separated—populations in the Great Basin and Central Valley. The largest population in California occurs between Sacramento and Modesto and in the northern San Joaquin Valley.

Swainson's hawk nests in the Central Valley of California are generally found in scattered trees or along riparian systems next to agricultural fields or pastures. These open fields and pastures are the main foraging areas where Swainson's hawks hunt and eat insects and small mammals.

With rare exceptions, Swainson's hawks are migrants, breeding in North America and wintering in South America. In the Central Valley, they arrive in late February and early March. Early arrival dates of Central Valley Swainson's hawks are likely related to their shorter migration distance to wintering sites in Mexico.

The Action Area lies within the historic and current range of the Swainson's hawk. Mature trees suitable for potential nesting habitat occur within the project's environmental study limit. Potential foraging habitat for the Swainson's hawk is not available within the project's environmental study limit because these hawks are not expected to forage over open water-bodies such as the Stockton Deep Water Channel or in the heavily urbanized areas of the City of Stockton. Additionally, small patches of disturbed habitat available within existing freeway interchange loops are not considered foraging habitat capable of supporting the Swainson's hawk.

No evidence of Swainson's hawks nesting within or next to the project's environmental study limit was found during wildlife surveys in April 2018, October 2018, and April 2019. Swainson's hawks were seen soaring over the vicinity of the project's environmental study limit during surveys in April 2019.

The California Natural Diversity Database records show no occurrences of Swainson's hawks nesting within 0.25 mile of the project's environmental study limit. However, three occurrences of Swainson's hawks nesting were found within about 1 mile of the project's environmental study limit. (California Natural Diversity Database, 2018)

Large mature trees provide potentially suitable nesting habitat for Swainson's hawks.

Environmental Consequences

Section 3 of the Federal Endangered Species Act defines "take" as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt

to engage in any such conduct." This definition of take will be applied to all animal species considered as Federal Endangered Species Act-listed or Federal Endangered Species Act-candidate species analyzed in this document.

Under Alternatives 1A, 2, and 3, project activities in aquatic habitat including barge operations, pile driving, dewatering activities, fish salvage, and other physical disturbances as well as construction activities occurring over water may result in take of Federal Endangered Species Act-listed species due to harassment, harm, pursuit, entrapment, capture, injury, or mortality. Therefore, it is Caltrans' determination that the proposed Stockton Channel Viaduct Bridge Improvements Project "may affect and is likely to adversely affect" Federal Endangered Species Act-listed Green Sturgeon-Southern Distinct Population Segment and Federal Endangered Species Act-listed Central Valley steelhead and their designated critical habitat.

California Fish and Game Code Section 86 defines "take" as: "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." This definition of take will be applied to all special-status animal species considered as California Endangered Species Act-listed or California Endangered Species Act-candidate species analyzed in this document.

The project area is outside the range of the species because of the lack of suitable habitat or habitat components in the project area and/or because the project would not harm individuals or alter the species' habitat. Therefore, it is Caltrans' determination that the proposed project would not result in "take" (as defined by California Fish and Game Code Section 86) of species listed or candidates proposed for listing under the California Endangered Species Act administered by the California Department of Fish and Wildlife under Alternatives 1A, 2, and 3. Threatened and Endangered Fish Species:

Under Alternatives 1A, 2, and 3, the effects of permanent and temporary fill, underwater barotrauma, dewatering activities, vegetation removal, structure shading, sediment mobilization, exposure to contaminants/toxic chemicals, and noise and lighting on fish species listed under the Federal Endangered Species Act and/or the California Endangered Species Act are the same as those above for special-status fish species in Section 2.3.2, Animal Species, Environmental Consequences.

Effects to Designated Critical Habitat for Species Under the Federal Endangered Species Act

Critical habitat designations require the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service to consider "those physical or biological features that are essential to the conservation of a given species" and specify that the "physical and biological features shall be listed with the critical habitat description."

Analysis of potential impacts to designated critical habitat for fish species listed under the Federal Endangered Species Act is based on the potential effects on the physical and biological features of the designated critical habitat.

- Under Alternatives 1A, 2, and 3, implementation of the proposed project is not expected to appreciably diminish the value or considerably reduce the capability of designated critical habitat to satisfy requirements essential to both the survival and recovery of Federal Endangered Species Act-listed species in the Stockton Deep Water Channel.

Swainson's Hawk

Activities that may ultimately result in the perusal, capture, or intentional or accidental killing (California Fish and Game Code Section 86) of adult Swainson's hawks are not expected to occur as a result of the proposed project under Alternatives 1A, 2, or 3.

Under Alternatives 1A, 2, and 3, the project is expected to result in the loss of an unknown number of large mature trees potentially suitable as nesting habitat for Swainson's hawks. Potential foraging habitat for the Swainson's hawk is not available within the project's environmental study limits because Swainson's hawks are not expected to forage over open water-bodies such as the Stockton Deep Water Channel or in the heavily urbanized areas of the City of Stockton within and next to the project's environmental study limits.

With the implementation of Swainson's hawk avoidance measures, the proposed construction activities are not expected to result in the take (as defined by California Fish and Game Code Section 86) of Swainson's hawk under Alternatives 1A, 2, or 3. If it is determined during pre-construction surveys or construction monitoring that the project could result in the "take" of Swainson's hawks, consultation with the California Department of Fish and Wildlife under Section 2080 of the California Fish and Game Code would be required.

Avoidance, Minimization, and/or Mitigation Measures

Under Alternatives 1A, 2, and 3, the following project features and standardized measures, as listed in the 2020 Natural Environment Study, would be implemented as part of the design of the proposed project to avoid, minimize, or mitigate adverse effects to threatened and endangered animal species. A detailed explanation of these measures is discussed in Appendix E.

- ESA-1: Environmentally Sensitive Area Designation
- BIO-1: Designated Biologist
- BIO-4: Containment Measures/Construction Site Best Management Practices

- BIO-2: Worker Environmental Awareness Training
- BIO-3: Limited Operation Period—In-Water Construction Activities
- BIO-5: Restore and Revegetate Temporarily Disturbed Areas Onsite
- BIO-6: Vibratory Pile Installation
- BIO-7: Impact Pile Driving Attenuation
- BIO-8: Daily Limited Operation Period—Impact Pile Driving
- BIO-9: Salvage Species from Dewatered Areas
- BIO-10: Construction and Structure Lighting
- BIO-11: Migratory Birds and Raptors
- BIO-20: Compensatory Mitigation
- BIO-21: Swainson's Hawk: Remove Nesting Habitat During Non-Nesting Season
- BIO-22: Swainson's Hawk: Pre-Construction Surveys During Nesting Season
- BIO-23: Swainson's Hawk: Protective Buffers
- BIO-24: Swainson's Hawk: Construction Monitoring

2.3.4 **Invasive Species**

Regulatory Setting

On February 3, 1999, President William J. Clinton signed Executive Order (EO) 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 (FHWA) guidance issued August 10, 1999 directs the 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 (NEPA) analysis for a proposed project.

Affected Environment

A Natural Environment Study was completed for the project on August 21, 2020, detailing the study methodology and results of the invasive species survey. Because ground disturbing action or activity is proposed within the project's environmental study limits under Alternatives 1A, 2, and 3, the risk of introducing or spreading noxious or invasive plants and animals associated with the proposed action was determined. Surveys for target noxious and invasive plant and animal species were conducted in conjunction with

botanical inventory surveys and focused sensitive plant surveys conducted in the 2019 and 2020 seasons.

The following existing information was reviewed to develop a list of invasive species potentially occurring within the project vicinity:

- A list of invasive and/or noxious weeds occurring in California was obtained from the California Department of Food and Agriculture's noxious weed list for the State of California and the California Invasive Plant Council's "Invasive Plant Inventory." (https://www.cal-ipc.org/plants/inventory/)
- The California Department of Fish and Wildlife Invasive Species Program website was reviewed for invasive animal species known to occur in the Sacramento-San Joaquin Delta.

The 2020 Natural Environment Study discussed the following invasive plant and animal species:

Perennial Pepperweed

Perennial pepperweed is most invasive in wetland habitat, including riparian zone; from there, it easily spreads to other ecosystems. Perennial pepperweed grows very aggressively, forming dense colonies that exclude native species.

Yellow Star Thistle

Yellow star thistle inhabits open hills, grasslands, open woodlands, fields, roadsides, and rangelands, and it is considered one of the most serious rangeland weeds in the state.

Water Hyacinth

Water hyacinth spreads through the fragmentation of established plants and may resprout from rhizomes or germinate from seeds. Dispersal also occurs by waterborne seeds and by seeds that stick to the feet of birds. Water hyacinth can quickly dominate a waterway or aquatic system because of rapid leaf production, fragmentation of daughter plants, and copious seed production and germination. It degrades habitat for waterfowl by reducing areas of open water used for resting, and when decomposing, it makes water unfit for drinking. It displaces native aquatic plants used for food or shelter by other wildlife species. Water hyacinth causes problems for humans by obstructing navigable waterways, impeding drainage, fouling hydroelectric generators and water pumps, and blocking irrigation channels.

Giant Reed

Giant reed is a tall perennial grass that typically forms dense stands on disturbed sites, sand dunes, riparian areas, and wetlands. Giant reed is threatening California's riparian ecosystems by outcompeting native species,

such as willows, for water, by degrading wildlife habitat, and by interfering with flood control.

Mississippi Silversides

Mississippi silversides are native to the eastern U.S., where they live in lakes and streams accessible from the Atlantic Coast. In California, Mississippi silversides were deliberately introduced in the 1960s as a forage fish for larger, desirable game fish or to eat insects considered pests. From those introductions, which also took place in the Bay-Delta watershed, the Mississippi silversides spread to the Delta, where in some places, it is the most common fish. Mississippi silversides eat zooplankton, the tiny floating aquatic animal fauna that includes not only animals that stay small their whole lives, like copepods, but the larval stages of larger fishes such as the Delta's Chinook salmon and Delta smelt. The abundance of the Mississippi silverside makes this species one of the major predation threats to the threatened Delta smelt.

American Bullfrog

American Bullfrogs, also native to the eastern U.S., are "gape-limited predators," meaning that the frog eats whatever it can wedge into its mouth. American bullfrog adults are known to feed on the California red-legged and yellow-legged frogs, native salamanders, Delta smelt, salmon and steelhead fry and eggs, mice, baby birds, moles, voles, lizards, snakes, butterflies, and dragonflies.

Red-Eared Slider

Red-eared sliders, native to the southeastern U.S., are a commonly kept turtle, and are often released into the wild. Red-eared sliders can easily dominate any body of water. Red-eared sliders are larger than the native western pond turtle and require essentially the same habitat. The larger invasive turtles outcompete the smaller natives for available food, which has contributed to the western pond turtle's decline. Populations of red-eared sliders often displace native turtles from their habitat.

Grass Carp

The grass carp is a large freshwater fish that belongs to the minnow family. The grass carp was introduced to the U.S. in the 1960s and has since been reported in 45 states. The grass carp is native to large rivers of eastern Asia, from China and Russia to Thailand. The grass carp has a ravenous appetite for plants. They can quickly reduce or eliminate large quantities of aquatic vegetation from water-bodies, which can lead to the alteration or loss of habitat for native species, reduction in food availability for waterfowl, and increased occurrences of algal blooms. While feeding, the grass carp disturbs sediment and muddy waters, which can impact the spawning habitat for native fish. The grass carp carries diseases that are transmittable to other fish and are believed to be the main vector for Asian tapeworms.

Chinese Mitten Crab

Chinese mitten crabs are native to China's and South Korea's coastal rivers and estuaries that drain to the Yellow Sea. In Europe and California, Chinese mitten crabs are believed to have been introduced via ship ballast. Chinese mitten crabs cause damage to dikes, levees, and stream banks and increase erosion, which can cause weakening or collapse of flood control and water supply systems. In California, Chinese mitten crabs have interfered with water operations at diversion facilities by clogging fish salvage structures. Additionally, Chinese mitten crabs steal bait from recreational anglers, damage commercial fishing nets, compete with native and commercially important species for food (especially crayfish), prey upon native species (including fish eggs), damage rice crops by excessively burrowing and foraging, and may transfer diseases and parasites to native species.

New Zealand Mudsnail

The New Zealand mudsnail is a tiny aquatic snail that inhabits lakes, rivers, streams, reservoirs, and estuaries. The snails were first introduced to the U.S. through contaminated ballast water and/or the transport of live fish for the commercial aquaculture industry. Dense populations become the dominant macroinvertebrate through displacing and outcompeting native species. Some North American streams have reached densities over 0.75 million individuals per square meter. They may consume up to half of the food resources in a stream and have been linked to reduced populations of aquatic insects, including mayflies, caddisflies, chironomids, and other insects important to trout and salmon species.

Brown-Headed Cowbird

Brown-headed cowbirds are native to the Great Plains region of the U.S. and prefer open habitats interspersed with shrubs or trees and that provide ample forage and host nests. Brown-headed cowbirds parasitize the nests of more than 220 bird species in their range. When parasitizing nests, they often remove the egg(s) of the host bird. Brown-Headed Cowbird chicks usually hatch sooner than the host chicks, are larger, and develop faster. Their larger size and persistent behavior gain them more care from the host parents. Nest parasitism lowers the reproductive success of host birds and has led to population declines in several bird species.

Nutria

Nutrias were originally introduced to the U.S. (Elizabeth Lake, California) for the fur trade in 1899 but failed to reproduce. Subsequent introductions were successful, as records indicate nutrias were present in the Central Valley and South Coast of California in the 1940s and 1950s but were eliminated from the state by the 1970s. In 2017, a reproducing population of nutria was discovered in California's San Joaquin Valley; as of May 2019, nutrias have been confirmed in San Joaquin, Stanislaus, Merced, Fresno, Mariposa, and Tuolumne counties. Nutrias cause various kinds of damage through

burrowing, intense herbivory, and carrying pathogens and parasites. Nutrias do not build dens; they burrow, frequently causing water-retention or flood control levees to breach, weakening structural foundations, and eroding banks.

Environmental Consequences

Although existing roadside areas would be temporarily disturbed, the project would not break new ground that is potentially available for new infestations. It is also possible that weeds originating from within the project's environmental study limits could be transported to uninfested areas within the project's Action Area or outside of the project vicinity. It is also recognized that disturbed roadside areas are significant sources of noxious and invasive weed material.

Under Alternatives 1A, 2, and 3, adverse impacts to terrestrial native vegetation or vegetation communities or urban landscape vegetation within the project area due to an increase in the spread of noxious weeds as a result of the project are possible. However, adverse impacts are not likely because project construction activities would take place in open, disturbed areas such as roadway embankments, highway interchange loops, and urban landscapes that currently promote the growth of non-native species and are currently dominated by potentially invasive weeds, including many species listed as "moderate" and "limited" invasiveness by the California Invasive Plant Council.

Under Alternatives 1A, 2, and 3, the project would not increase aquatic habitat available for new infestations. The potential for the project to cause an increase in the area of infestation or for other adverse impacts to aquatic habitat within the project's environmental study limits and Action Area would be further reduced by implementing avoidance strategies and design features for reducing the spread of noxious weeds.

Under Alternatives 1A, 2, and 3, adverse impacts to aquatic habitat and native aquatic plant and animal species within the project area due to an introduction or spread of invasive animal species as a result of the project are possible. However, aquatic and terrestrial invasive animal species are known to occur in the project vicinity.

Under Alternatives 1A, 2, and 3, the project would not increase aquatic or terrestrial habitat available for potential colonization by invasive animal species. Adverse impacts to aquatic habitat and native aquatic plant and animal species within the project area, due to an introduction or spread of invasive animal species would be avoided or minimized by implementing measures to reducing the spread of invasive animal species. These measures would also reduce the introduction of invasive animal species as well.

Avoidance, Minimization, and/or Mitigation Measures

As discussed in the 2020 Natural Environment Study, the following measures would be implemented to avoid, minimize, or mitigate adverse effects of invasive plant and animal species under Alternatives 1A, 2, and 3. A detailed discussion of these measures can be found in Appendix E in this document.

- ESA-1: Environmentally Sensitive Area Designation
- BIO-1: Designated Biologist
- BIO-3: Limited Operation Period—In-Water Construction
- BIO-4: Containment Measures/Construction Site Best Management Practices
- BIO-5: Restore and Revegetate Temporarily Disturbed Areas Onsite
- BIO-25: Weed-Free Construction Equipment and Vehicles
- BIO-26: Equipment and Materials Storage, Staging, and Use in Weed-Free Areas
- BIO-27: Weed Control During Construction
- BIO-28: Weed-Free Erosion Control and Revegetation Treatments
- BIO-29: Pest-Free Construction Equipment and Vehicles

2.3.5 Construction Impacts

Construction (short-term) impacts for the project would cause temporary impacts for the following: borrow and fill and optional disposal sites; staging and storage of construction equipment; parks and recreational activities; traffic and transportation; pedestrian and bicycle facilities; cultural resources; water quality and stormwater runoff; geology, soils, seismicity, and topography; hazardous waste and materials; air quality and construction conformity; and natural communities.

These impacts would be addressed using standardized measures, including Best Management Practices, that would be added to the construction contract, as discussed below.

Borrow and Fill/Optional Disposal Sites

Caltrans' construction projects often generate excess soil excavation or concrete rubble that must be disposed of either onsite or offsite. If commercial or local recycling facilities or disposal sites are not adequate or are unable to accommodate excess materials created by Caltrans' work, designated optional sites should be developed to keep the project on schedule.

As appropriate, a Disposal Site Quality Team Final Report would be prepared. This report would present Caltrans and Federal Highway

Administration policies on disposal, staging, and borrow areas, including plant sites, contractor yards, and access roads.

Parks and Recreational Facilities

The following standard practices would be implemented as part of the construction contract to offset temporary impacts to Morelli Park caused by project construction. These standard practices would reduce the impacts of any of the build alternatives):

- Replace impacted facilities (parking, pavement).
- Restore disturbed areas.
- Keep access open to the waterway under the Stockton Channel Viaduct Bridge.

Traffic and Transportation, Pedestrian and Bicycle Facilities

A traffic management plan would be developed to handle local traffic patterns and reduce delays, and to identify locations of temporary detours and signage to facilitate traffic within the project study area during construction. The traffic management plan would specify time frames for roadway and lane closures. Emergency services such as fire, police, and medical would be notified in advance of any lane or roadway closures. The project would coordinate construction activities to avoid blocking or limiting access to residential units and businesses.

Cultural Resources

If cultural materials are discovered during construction, all earthmoving activities within and around the immediate discovery area would be diverted until a qualified archaeologist can assess the nature and significance of the find.

If human remains are discovered during construction, California Health and Safety Code Section 7050.5 states that further disturbances and activities would stop in any area or nearby area suspected to overlie remains, and the county coroner would be contacted. If the coroner thinks the remains are Native American, the coroner would notify the Native American Heritage Commission, which, per Public Resources Code Section 5097.98, would then notify the Most Likely Descendant. At this time, the person who discovered the remains would contact Central Region Environmental Cultural staff members so they can work with the Most Likely Descendant on the respectful treatment and disposition of the remains.

Water Quality and Stormwater Runoff

A Stormwater Pollution Prevention Plan and the measures outlined below would protect the water quality within the project study area. Therefore, construction activities would not be expected to result in adverse effects on receiving waters.

Construction entrances and temporary construction roadway, in addition to stormwater sampling and analysis, would be required under a Stormwater Pollution Prevention Plan for risk levels 2 and 3. Water quality monitoring may be required for in-water work during the construction of bridge piles.

Before the start of construction activities, a Stormwater Pollution Prevention Plan would be prepared by the contractor and approved by Caltrans. The plan would discuss potential temporary impacts via the implementation of appropriate Best Management Practices such as those mentioned above and below, to the maximum extent practical.

- The project would be required to follow the requirements of the Caltrans Statewide National Pollutant Discharge Elimination System Stormwater Permit Order Number 2009-0009-DWQ, National Pollutant Discharge Elimination System Number CAS000002, and any subsequent permit in effect at the time of construction. Additionally, the project would be required to follow the requirements of the National Pollutant Discharge Elimination System Permit for Construction Activities, as well as the implementation of the Best Management Practices specified in Caltrans' Stormwater Management Plan. (Caltrans, 2003b)
- Prepare and Implement a Stormwater Pollution Prevention Plan: The contractor would be required to develop an acceptable Stormwater Pollution Prevention Plan. The plan would meet the requirements of the Construction General Permit, which include identifying potential pollutant sources associated with construction activities, identifying non-stormwater discharges, and identifying, implementing, and maintaining Best Management Practices to reduce or eliminate pollutants associated with the construction site. A Notice of Termination would be submitted to the State Water Resources Control Board upon completion of the construction and stabilization of the site.

Geology, Soils, Seismicity, and Topography

Caltrans would implement the following Best Management Practices related to erosion control:

- To prevent or reduce impacts, temporary Construction Site Best Management Practices would be used for sediment control and material management. Sediment control and material handling include cover, check dam, drainage inlet protection, fiber roll, silt fence, and hydraulic mulch.
- Construction entrances and temporary construction roadway, in addition to stormwater sampling and analysis, would be required under a Stormwater Pollution Prevention Plan for risk levels 2 and 3. Water quality monitoring may be required for in-water work during the construction of bridge piles.
- Permanent erosion control may be proposed for disturbed areas and new side slopes; it would consist of hydroseeding, hydromulch, and/or netting.

Hazardous Waste and Materials

The lead-based paint used on the metal girders under the roadway and roadway striping in the project area is above regulatory levels and would be considered hazardous if removed. Appropriate avoidance and minimization measures would be used to ensure any loose material is handled and disposed of appropriately. The following are Caltrans Standard Special Provisions that would be used if a hazardous substance is encountered during construction:

- There is potential to encounter nonhazardous concentrations of aerially deposited lead while working in unpaved areas within the project limits. The Caltrans Standard Special Provision pertaining to Earth Material Containing Lead, 7-1.02K(6)(j)(iii), would be added to the construction contract.
- The sheet packing material used as railing shims is considered nonhazardous. However, disturbance of the material by cutting, abrading, sanding, grinding, etc. would require compliance with the California Occupational Safety and Health Administration asbestos standard. (Title 8, California Code of Regulations Section 1529). Written notification to the San Joaquin Valley Air Pollution Control District is required 10 working days before the start of demolition activities even when asbestos is not present. The Caltrans Standard Special Provision Section 14-11.16 (Asbestos-Containing Construction Materials in Bridges) would be added to the construction contract to ensure that all material is properly handled and disposed of in a certified waste facility.
- The orange paint applied to the steel girder system would be considered a California and federal hazardous waste based on lead content if stripped, blasted, or otherwise separated from the substrate (base material). The Caltrans Standard Special Provision Section 14-11.13 (Disturbance of Existing Paint Systems on Bridges) would be added to the construction contract to ensure that all material separated from the substrate (base material) is properly handled and disposed of in a certified waste facility
- Yellow traffic striping on the roadway would be considered a California hazardous waste based on lead content if stripped, blasted, or otherwise separated from the base material. The Caltrans Standard Special Provision Section 14-11.12 Remove Yellow Traffic Stripe and Pavement Marking with Hazardous Waste Residue would be added to the construction contract to ensure that all material that is separated from the substrate is properly handled and disposed of in a certified disposal facility/
- Alternative 3 would require excavation of the Stockton Deep Water Channel to advance bridge footings. As a result, excess soil material (sand, silt, clay) may be produced. It is unknown if contaminates would be present in the excess bed material. Therefore, the excess shall soil be surveyed for hazardous materials, which may include but are not limited to

heavy metals, petroleum hydrocarbons, pesticides, and volatile organic compounds, before the start of construction activities. Once the excess soil material is properly classified, Caltrans' Special Provisions would be included in the construction contract to ensure the material is properly handled.

Air Quality and Construction Conformity

The following standard specifications and standards measures would help reduce temporary impacts to air quality caused by project construction:

- During construction, the project would generate air pollutants. The exhaust from construction equipment contains hydrocarbons, oxides of nitrogen, carbon monoxide, suspended particulate matter, and odors. However, the largest percentage of pollutants would be windblown dust generated during excavation, grading, hauling, and various other activities. The impacts of these activities would vary each day as construction progresses. Dust and odors during construction could cause occasional annoyance and complaints from residents along the state right-of-way.
- Caltrans's Standard Specifications that pertain to dust control and dust palliative requirements are a required part of all construction contracts and should effectively reduce and control emission impacts during construction. The provisions of Caltrans Standard Specifications, Section 14-9.02 "Air Pollution Control" and Section 10-5 "Dust Control," require the contractor to comply with the air pollution control rules, ordinances, and regulations and statutes that apply to work performed under the contract, including those provided in Government Code Section 11017.
- A dust control plan would be needed if at least 2,500 cubic yards of material are moved in a day for at least three days of the project or 5 or more acres of land would be disturbed during construction.

2.3.6 Cumulative Impacts

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 (CFR) Section 1508.7.

Affected Environment

Cumulative impacts were discussed in the August 2020 Cumulative Impact Analysis Memorandum for the Stockton Channel Viaduct Bridge Improvements Project. The Guidance for Preparers of Cumulative Impact Analysis (July 2005) was used to identify, evaluate, and make significance determinations on resources of concern for the project.

Assumptions were made that if technical studies did not specifically identify project-related direct or indirect impacts, then a cumulative impact was not necessary. Based on the technical studies, the following resources were not considered in the cumulative impact analysis: Cultural, Air Quality, Climate Change, Water Quality/Stormwater, Hydrology/Floodplain, Geology/Soils, Hazardous Waste, Paleontology, Land Use, Coastal Zones, Wild and Scenic Rivers, Farmlands/Timberlands, Wetlands, Visual/Aesthetics, and Community Impacts resources. Biological resources were identified within the 2020 Natural Environment Study that discussed the cumulative impact of the project.

Environmental Consequences

Based upon the 2020 Cumulative Impact Analysis, special-status and threatened and endangered species were identified where the project could have temporary impacts on those species in the project area. The Cumulative Impact Analysis identified that construction activities would temporary affect aquatic and land species.

The Cumulative Impact Analysis made every effort to identify and locate past, present, and reasonably foreseeable future actions in the project area that have the potential to affect the species that were identified in the analysis. Upon completing the analysis, it was determined that the Stockton Channel Viaduct Bridge Improvements Project would not have a cumulative impact on biological resources from past, present, and reasonably foreseeable future projects. Additionally, with the implementation of avoidance, minimization, and mitigation measures discussed in the 2020 Natural Environment Study, temporary construction impacts would be less than significant.

Avoidance, Minimization, and/or Mitigation Measures

The 2020 Cumulative Impact Analysis Memorandum discussed avoidance, minimization, and mitigation measures that were identified in the 2020 Natural Environment Study to lessen the impact on special-status and threatened and endangered species and their habitat (see Appendix E or the 2020 Natural Environment Study).

Chapter 3 CEQA Evaluation

3.1 Determining Significance Under CEQA

The proposed project is a joint project by Caltrans and the Federal Highway Administration and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). 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 U.S. 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 CEQA and NEPA.

One of the primary differences between NEPA and CEQA is the way significance is determined. Under NEPA, significance is used to determine whether an EIS, or a lower level of documentation, will be required. NEPA requires that an EIS be prepared when the proposed federal action (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 EIS, 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 documents.

CEQA, on the other hand, does require the Department 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 EIR must be prepared. Each and every significant effect on the environment must be disclosed in the EIR and mitigated if feasible. In addition, the CEQA Guidelines list a number of "mandatory findings of significance," which also require the preparation of an EIR. 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. In many cases, background studies performed in connection with the projects will indicate that there are no impacts to a particular resource. A NO IMPACT answer in the last column reflects this determination. The words "significant" and “significance” used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form 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 Caltrans projects such as Best Management Practices and measures included in the Standard Plans and Specifications or as Standard Special Provisions, are considered to be an integral part of the project and have been considered prior to any significance determinations documented below; see Chapters 1 and 2 for a detailed discussion of these features. The annotations to this checklist are summaries of information contained in Chapter 2 in order to provide the reader with 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—The project would not have a substantial adverse impact on a scenic vista because the project area does not include any scenic vistas.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact—The project is not on a scenic highway or would substantially damage any scenic resources or historic buildings.

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?

No Impact—The project is in an urbanized area and would not substantially degrade the existing visual character or public views of the surrounding area and would not conflict with applicable zoning or scenic quality regulations.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

No Impact—The project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

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 a nonagricultural use?

No Impact—The project is in an urban area and would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a nonagricultural use.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact—There are no parcels under a Williamson Act contract within the project limits.

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—There are no forest lands or timberlands within the project limits.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact—There are no forest lands or timberlands within the project limits. Therefore, would not result in the loss of forest or convert forest lands.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to a nonagricultural use or conversion of forest land to non-forest use?

No Impact—There are no forest lands or timberlands within the project limits and, therefore, no changes are expected to Farmland of Statewide Importance or forest land.

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?

No Impact—The project would not conflict with or obstruct the implementation of any applicable air quality plan.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Less Than Significant Impact—San Joaquin County is in nonattainment status for the Federal 8-hour Ozone and Particulate Matter 2.5 standards and in attainment for the Federal Particulate Matter 10 standard. San Joaquin County is in nonattainment status for the State Ozone, Particulate Matter 10, and Particulate Matter 2.5 standards.

Per the 2020 Air Quality Memorandum, the Stockton Channel Viaduct Bridge Improvements Project is exempt from conformity under Table 2 of 40 Code of Federal Regulations Section 93.126 “Widening narrow pavements or reconstructing bridges (no additional travel lanes).”

This project is not expected to cause any operational effects on air pollutants. No mitigation would be required.

c) Expose sensitive receptors to substantial pollutant concentrations?

No Impact—The project would not expose sensitive receptors to substantial pollutant concentrations.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

No Impact—The project would not result in other emissions that would adversely affect a substantial number of people.

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 U.S. Fish and Wildlife Service?

Less Than Significant with Mitigation Incorporated—The 2020 Natural Environment Study determined that project construction activities would impact threatened and endangered species. However, with the incorporation of avoidance, minimization, and mitigation measures as identified in the 2020 Natural Environment Study, the effects would result in a less than significant impact (see Section 2.3.3 Threatened and Endangered Species or Appendix E).

Per the 2020 Natural Environment Study, project construction activities would temporarily impact sensitive or special-status species. Impacts on sensitive or special-status species would be lessened with avoidance and minimization measures. See Section 2.3.2 Animal Species and Appendix E for a detailed description of the avoidance and minimization measures.

However, construction activities would impact special-status species' habitat, "Essential Fish Habitat." As discussed in the 2020 Natural Environment Study, impacts would be reduced to less than significant with the implementation of avoidance, minimization, and mitigation measures. See Section 2.3.3 Threatened and Endangered Species and Appendix E for a detailed description of avoidance, minimization, and mitigation measures.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or

by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

No Impact—The project would not have an adverse effect on any riparian habitat. The 2020 Natural Environment Study determined no riparian habitat was found in the project area or other sensitive natural communities.

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 with Mitigation Incorporated—The 2020 Natural Environment Study found no impacts on potentially jurisdictional wetlands.

However, the project would have temporary and permanent impacts on "Waters of the U.S." and "Non-Federal Waters of the State of California" for Alternative 3. Under Alternatives 1A and 2, it was determined the project would have impacts on "Other Waters of the U.S." only. With the implementation of avoidance, minimization, and mitigation measures identified within the 2020 Natural Environment Study, the effects would be less than significant. See Section 2.3.1 Wetlands and Other Waters and Appendix E for a detailed description of avoidance, minimization, and mitigation measures.

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?

No Impact—The project would not substantially interfere with the movement of any native migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact—The project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact—The project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

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—The project would not cause a substantial adverse change in the significance of a historical resource per Section 15064.5.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

No Impact—The project would not cause a substantial adverse change in the significance of an archaeological resource per Section 15064.5.

c) Disturb any human remains, including those interred outside of dedicated cemeteries?

Less Than Significant Impact—The Historic Property Survey Report identified human remains at an archaeological site within the project area and determined a Finding of No Adverse Effect with Standard Conditions. Environmentally sensitive area fencing would be the appropriate avoidance measure to protect this resource.

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?

No Impact—The project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. Best Management Practices would be followed during project construction and/or operation.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact—The project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Best Management Practices would be followed during construction and/or operation.

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:

No Impact—The project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death.

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?

No Impact—Per the 2019 Seismic Design Recommendations Report, the project is not in an earthquake fault zone and is more than 1,000 feet from an "unzoned" fault.

ii) Strong seismic ground shaking?

No Impact—The project would not be subjected to strong seismic ground shaking.

iii) Seismic-related ground failure, including liquefaction?

No Impact—Per the 2019 Seismic Design Recommendation Report, the soils on the Stockton Deep Water Channel riverbank are susceptible to liquefaction activities near bents 8 and 9. However, the proposed piles retrofit or replacement for Alternatives 2 and 3 would be designed so the bridge would not collapse under these conditions.

iv) Landslides?

No Impact—The project is not within a landslide area; therefore, it would not cause substantial adverse effects.

b) Result in substantial soil erosion or the loss of topsoil?

No Impact—The project would not result in substantial soil erosion or the loss of topsoil.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?

No Impact—Per the 2019 Seismic Design Recommendations Report, the project soil is subject to liquefaction at bent numbers 8 and 9 within the Stockton Deep Water Channel. The project would rehabilitate or replace the existing structure, therefore minimizing the effect of liquefaction.

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—The project is not located on expansive soil, as defined in Table 18-1-B.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact— The project would not have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant with Mitigation Incorporated—Per the Paleontological Identification Report, the project has a high potential for paleontological resources underlying the project area. As a result, potential paleontological resources could be impacted, and scientific fossils may be discovered. A Paleontological Mitigation Plan may need to be prepared if the need for mitigation is verified. A mitigation monitor would be needed during construction.

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?

Less Than Significant Impact—The project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

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

Less Than Significant Impact—The project would not conflict with any applicable plan, policy, or regulation adopted to reduce the emissions of greenhouse gases.

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?

No Impact—The project would not create a significant hazard to the public or the environment through the transportation, use, or disposal of hazardous materials. All aspects of the project associated with the removal, storage, transportation, and disposal of hazardous materials would be in strict accordance with the appropriate regulation of the California Health and Safety Code. Handling of hazardous materials would follow Caltrans 2018 Standard Specifications Section 14-11, Hazardous Waste and Contamination, which outlines handling, storing, and disposing of hazardous waste.

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?

No Impact—The project would not create a significant hazard to the public or the environment through the foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

No Impact— The project is a replacement or rehabilitation of an existing bridge structure and would not emit hazardous emissions or handle hazardous or acutely hazardous materials.

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—The 2020 Hazardous Materials Initial Site Assessment determined there are no active leaking underground storage tanks within the project study area. The Initial Site Assessment identified three closed leaking underground storage tanks next to the project study area. Remediation activities were completed, and the potential to encounter contaminated soil is considered unlikely for the project.

e) For a project located within an airport land-use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

No Impact—There are no airports or airstrips within 2 miles of the project study area.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact—The project would replace an existing structure and would not affect any adopted emergency response 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 area is not designated as a fire hazard severity zone, according to the California Department of Forestry and Fire Protection map. There would be no impact on the surrounding wildland area.

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 water or groundwater quality?

Less Than Significant Impact—With the implementation of Best Management Practices and Caltrans' Standard Specifications, the project would not violate any water quality standards or waste discharge requirements or substantially degrade surface water or groundwater quality. Adherence to construction provisions and precautions described in the National Pollutant Discharge Elimination System permit, Section 404 permit, and 1602 Streambed Alteration Agreement would be upheld.

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 would not decrease groundwater supplies or interfere with groundwater recharge.

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 onsite or offsite;

No Impact—The project would not 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 that would result in substantial erosion or siltation onsite or offsite.

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite;

No Impact—The project would not 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 that would substantially increase the rate or amount of surface runoff that would result in onsite or offsite flooding.

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 not 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 that would create or contribute runoff water that would exceed existing or planned stormwater drainage systems.

iv) Impede or redirect flood flows?

No Impact—The project would not 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 that would impede or redirect flood flows.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

No Impact—The project is not in a flood hazard, tsunami, or seiche zone and would not risk releasing pollutants due to project inundation.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

No Impact—The project would not conflict with or obstruct the implementation of a water quality control plan or sustainable groundwater management plan. Water quality during construction would be protected by following the provisions described in the National Pollutant Discharge Elimination System, Section 404, and 1602 permits.

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—No residential homes would be acquired. Based on the project scope, the replacement of the existing bridge would not result in the division of an established community.

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—Implementation of the project is not expected to notably change developmental patterns or influence economic trends within the project study area.

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?

No Impact—The project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land-use plan?

No Impact—The project would not result in the loss of availability of a locally important mineral resource recovery site that is delineated on a local general plan, specific plan, or another land-use plan.

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—Temporary impacts are expected during construction activities. Under the project, there would be some impacts, to ambient noise levels from all three build alternatives, but would not

substantially increase ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinances, or applicable standards of other agencies. Per the 2020 Noise Study Report, the demolition and replacement of existing sound wall 2 would decrease the noise levels to within acceptable limits for sensitive receptors.

b) Generation of excessive groundborne vibration or groundborne noise levels?

No Impact—The project would not generate excessive groundborne vibration or groundborne noise levels.

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 2 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—The project is not within the vicinity of a private airstrip or an airport land-use plan and is not within 2 miles of a public airport or public use airport.

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 would not induce substantial unplanned population growth in the project area, either directly or indirectly.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact—The project is a replacement in kind of an existing facility and would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing. (Caltrans Right-of-Way property management system)

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—Temporary lane closures are expected during construction. Such closures would result in delays, but the closures are not expected to disrupt emergency services because the construction contractor would circulate construction schedules and traffic control information to emergency service providers. This would allow emergency service providers to plan for the use of alternate routes during construction-related road closures.

Police protection?

No Impact—Temporary lane closures are expected during construction. Such closures would result in delays, but the closures are not expected to disrupt emergency services because the construction contractor would circulate construction schedules and traffic control information to emergency service providers. This would allow emergency service providers to plan for the use of alternate routes during construction-related road closures.

Schools?

No Impact—Temporary lane closures are expected during construction. Such closures would result in delays, but the closures are not expected to disrupt schools because the construction contractor would circulate construction schedules and traffic control information to the surrounding providers. This would allow school providers to plan for the use of alternate routes during construction-related road closures.

Parks?

Less Than Significant Impact—The project would have a de minimis impact on Morelli Park Boat Launch within the project area (see Appendix A, Section 4(f)). No other parks would be affected by the project.

Other public facilities?

No Impact—Temporary lane closures are expected during construction. Such closures would result in delays, but the closures are not expected to disrupt other public facilities because the construction contractor would circulate construction schedules and traffic control information to the surrounding providers. This would allow other public providers to plan for the use of alternate routes during construction-related road closures.

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?

Less Than Significant Impact—The project proposes to temporarily close Morelli Park Boat Launch during construction activities. As such, nearby parks could become busier, but this would be temporary and is not likely to lead to substantial physical deterioration of existing surrounding parks.

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 would rehabilitate or replace the existing Stockton Channel Viaduct Bridge and does not include the construction of any new recreational facilities or expanding any existing recreational facilities that would have an adverse physical effect on the environment.

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?

Less Than Significant Impact—General construction activities from lane closures and detours could cause temporary traffic delays with the area's circulation system, transit, roadway, and bicycle and pedestrian facilities. Response times for emergency responders (ambulance, fire, etc.) could potentially be impacted during general construction activities. Implementation of Best Management Practices and a traffic management plan would specify time frames for roadway and lane closures; they would be developed by the contractor and Caltrans to reduce potential impacts on emergency services and commuters during construction.

b) Conflict with or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?

No Impact— The project will not increase vehicle miles traveled or auto trips and will not conflict with or be inconsistent with CEQA Guidelines Section 15064.3(b).

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 would rehabilitate or replace an existing structure and would not substantially increase hazards due to geometric design features.

d) Result in inadequate emergency access?

Less Than Significant Impact—The project would keep three lanes of Interstate 5 in both directions open during construction. A transportation management plan would be developed to ensure adequate emergency access from detour and lane closure activities.

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—The project is not expected to cause a substantial adverse change in the significance of a tribal cultural resource either listed or eligible for listing in the California Register of Historical Resources or a local register of historical resources. If any cultural materials are found during construction activities, avoidance and minimization measures identified within the 2020 Historic Property Survey Report would be followed. See Section 2.1.7 Cultural Resources and Appendix E for a detailed description of avoidance and minimization measures.

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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

No Impact—As stated earlier, if an unidentified resource is discovered during project construction, avoidance and minimization measures discussed in the

2020 Historic Property Survey Report would be followed to prevent any impacts (see Appendix E).

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 stormwater 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 identified the need to relocate some electrical, wastewater, telecommunication, water, and gas lines within the project area. The project proposes a new stormwater drainage basin next to the Stockton Channel Viaduct Bridge. However, the proposed stormwater drainage basin would not cause significant environmental effects. The new stormwater drainage basin would be a benefit to the surrounding area for stormwater runoff.

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 would have sufficient water supplies available to serve the project and any reasonably foreseeable future development during normal, dry, and multiple dry years.

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 would not result in a determination by the wastewater treatment provider or affect the provider's capacity or demand.

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?

No Impact—The project would not generate solid waste in excess of state or local standards or impair the attainment of solid waste reduction goals.

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

No Impact—The project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

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 would not substantially impair an adopted emergency response plan or emergency evacuation plan.

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 would not exacerbate wildfire risks and expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

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 would not require the installation or maintenance of an associated infrastructure that would exacerbate fire risk.

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 would not 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.

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 throughout this checklist, the project is not expected to degrade the quality of the environment. Furthermore, the project is not expected to substantially reduce the habitat or affect populations of any fish or wildlife species (see Section 2.3 Biological Environment) or eliminate important examples of the major period of California history or prehistory. With the implementation of avoidance, minimization, and mitigation measures, the potential impacts on the environment would be less than significant (see Appendix E).

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—The project would not have impacts that are individually limited but cumulatively considerable. As discussed throughout the checklist, all significant environmental impacts would be reduced to less than significant levels with the inclusion of avoidance, minimization, and mitigation measures recommended throughout this document (see Appendix E).

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

No Impact—The project would not have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly.

3.3 Climate Change

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

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change by the United Nations and World Meteorological Organization in 1988 led to increased efforts devoted to greenhouse gas emissions reduction and climate change research and policy. These efforts are primarily concerned with the

emissions of greenhouse gases generated by human activity, including carbon dioxide, methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, and various hydrofluorocarbons. Carbon dioxide is the most abundant greenhouse gas; while it is a naturally occurring component of Earth's atmosphere, fossil-fuel combustion is the main source of additional, human-generated carbon dioxide.

Two terms are typically used when discussing how we address the impacts of climate change: "greenhouse gas mitigation" and "adaptation." Greenhouse gas mitigation covers the activities and policies aimed at reducing greenhouse gas emissions to limit or "mitigate" the impacts of climate change. Adaptation, on the other hand, is concerned with planning for and responding to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels). This analysis will include a discussion of both.

3.3.1 Regulatory Setting

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

Federal

To date, no national standards have been established for nationwide mobile-source greenhouse gas reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and greenhouse gas emissions reduction at the project level.

The National Environmental Policy Act (NEPA) (42 U.S. Code Part 4332) requires federal agencies to assess the environmental effects of their proposed actions prior to making a decision on the action or project.

The Federal Highway Administration recognizes the threats that extreme weather, sea-level change, and other changes in environmental conditions pose to valuable transportation infrastructure and those who depend on it. The Federal Highway Administration therefore supports a sustainability approach that assesses vulnerability to climate risks and incorporates resilience into planning, asset management, project development and design, and operations and maintenance practices. (Federal Highway Administrtion 2019) This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values— "the triple bottom line of sustainability." (Federal Highway Administration n.d.) Program and project elements that foster sustainability and resilience also support economic vitality and global efficiency, increase safety and mobility, enhance the environment, promote energy conservation, and improve the quality of life.

Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects. The most important of these was the Energy Policy and Conservation Act of 1975 (42 U.S. Code Section 6201) and Corporate Average Fuel Economy Standards. This act establishes fuel economy standards for on-road motor vehicles sold in the U.S. Compliance with federal fuel economy standards is determined through the Corporate Average Fuel Economy program based on each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the U.S.

Energy Policy Act of 2005, 109th Congress H.R.6 (2005-2006): This act sets forth an energy research and development program covering: (1) energy efficiency; (2) renewable energy; (3) oil and gas; (4) coal; (5) the establishment of the Office of Indian Energy Policy and Programs within the Department of Energy; (6) nuclear matters and security; (7) vehicles and motor fuels, including ethanol; (8) hydrogen; (9) electricity; (10) energy tax incentives; (11) hydropower and geothermal energy; and (12) climate change technology.

The U.S. Environmental Protection Agency in conjunction with the National Highway Traffic Safety Administration is responsible for setting greenhouse gas emission standards for new cars and light-duty vehicles to significantly increase the fuel economy of all new passenger cars and light trucks sold in the U.S. Fuel efficiency standards directly influence greenhouse gas emissions.

State

California has been innovative and proactive in addressing greenhouse gas emissions and climate change by passing multiple Senate and Assembly bills and executive orders including, but not limited to, the following:

Executive Order S-3-05 (June 1, 2005): The goal of this Executive Order is to reduce California's greenhouse gas emissions to: (1) year 2000 levels by 2010, (2) year 1990 levels by 2020, and (3) 80 percent below year 1990 levels by 2050. This goal was further reinforced with the passage of Assembly Bill 32 in 2006 and Senate Bill 32 in 2016.

Assembly Bill 32, Chapter 488, 2006, Núñez and Pavley, The Global Warming Solutions Act of 2006: Assembly Bill 32 codified the 2020 greenhouse gas emissions reduction goals outlined in Executive Order S-3-05, while further mandating that the California Air Resources Board create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." The Legislature also intended that the statewide greenhouse gas emissions limit continue in existence and be used to maintain and continue reductions in emissions of greenhouse gases beyond 2020. (Health and Safety Code Section 38551(b)) The law requires the California Air Resources Board to adopt rules and regulations in an open

public process to achieve the maximum technologically feasible and cost-effective greenhouse gas reductions.

Executive Order S-01-07 (January 18, 2007): This order sets forth the low carbon fuel standard for California. Under this Executive Order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by the year 2020. The California Air Resources Board re-adopted the low carbon fuel standard regulation in September 2015, and the changes went into effect on January 1, 2016. The program establishes a strong framework to promote the low-carbon fuel adoption necessary to achieve the governor's 2030 and 2050 greenhouse gas reduction goals.

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

Senate Bill 391, Chapter 585, 2009, California Transportation Plan: This bill requires the State's long-range transportation plan to identify strategies to address California's climate change goals under Assembly Bill 32.

Executive Order B-16-12 (March 2012) orders State entities under the direction of the Governor, including the California Air Resources Board, the California Energy Commission, and the Public Utilities Commission, to support the rapid commercialization of zero-emission vehicles. It directs these entities to achieve various benchmarks related to zero-emission vehicles.

Executive Order B-30-15 (April 2015) establishes an interim statewide greenhouse gas emission reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050. It further orders all state agencies with jurisdiction over sources of greenhouse gas emissions to implement measures, pursuant to statutory authority, to achieve reductions of greenhouse gas emissions to meet the 2030 and 2050 greenhouse gas emissions reductions targets. It also directs the California Air Resources Board to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent. Greenhouse gases differ in how much heat each trap in the atmosphere (global warming potential). Carbon dioxide is the most important greenhouse gas, so amounts of other gases are expressed relative to carbon dioxide, using a metric called "carbon dioxide equivalent." The global warming potential of carbon dioxide is assigned a value of 1, and the global warming potential of other gases is assessed as multiples of carbon dioxide. Finally, it requires the Natural Resources Agency to update the state's climate adaptation strategy,

Safeguarding California, every 3 years, and to ensure that its provisions are fully implemented.

Senate Bill 32, Chapter 249, 2016, codifies the greenhouse gas reduction targets established in Executive Order B-30-15 to achieve a mid-range goal of 40 percent below 1990 levels by 2030.

Senate Bill 1386, Chapter 545, 2016, declared "it to be the policy of the state that the protection and management of natural and working lands … is an important strategy in meeting the state's greenhouse gas reduction goals, and would require all state agencies, departments, boards, and commissions to consider this policy when revising, adopting, or establishing policies, regulations, expenditures, or grant criteria relating to the protection and management of natural and working lands."

Assembly Bill 134, Chapter 254, 2017, allocates Greenhouse Gas Reduction Funds and other sources to various clean vehicle programs, demonstration/pilot projects, clean vehicle rebates and projects, and other emissions-reduction programs statewide.

Senate Bill 743**,** Chapter 386 (September 2013): This bill changes the metric of consideration for transportation impacts pursuant to CEQA from a focus on automobile delay to alternative methods focused on vehicle miles traveled, to promote the state's goals of reducing greenhouse gas emissions and traffic related air pollution and promoting multimodal transportation while balancing the needs of congestion management and safety.

Senate Bill 150**,** Chapter 150, 2017, Regional Transportation Plans: This bill requires the California Air Resources Board to prepare a report that assesses progress made by each metropolitan planning organization in meeting their established regional greenhouse gas emission reduction targets.

Executive Order B-55-18 (September 2018) sets a new statewide goal to achieve and maintain carbon neutrality no later than 2045. This goal is in addition to existing statewide targets of reducing greenhouse gas emissions.

Executive Order N-19-19 (September 2019) advances California's climate goals in part by directing the California State Transportation Agency to leverage annual transportation spending to reverse the trend of increased fuel consumption and reduce greenhouse gas emissions from the transportation sector. It orders a focus on transportation investments near housing, managing congestion, and encouraging alternatives to driving. This Executive Order also directs the California Air Resources Board to encourage automakers to produce more clean vehicles, formulate ways to help Californians purchase them, and propose strategies to increase demand for zero-emission vehicles.

3.3.2 Environmental Setting

The project sits along Interstate 5 in San Joaquin County from post miles 26.1 to 27.6. The total length of the project is 1.6 miles. Within the project limits, Interstate 5 is a major north-south commercial route between U.S. Route 101 and State Route 99. Current traffic data indicate the two viaduct bridge structures service about 94,770 vehicles per day and 22,230 trucks per day.

Caltrans proposes to rehabilitate or replace the existing Stockton Channel Viaduct Bridge structures. The proposed rehabilitation work would consist of removing and replacing the bridge decks, railings, diaphragms, and expansion joints, as well as repairing and strengthening steel elements, including girders and lateral bracing. The proposed replacement work would consist of removing and replacing the superstructure, bents, columns, and foundations. Additionally, the project would replace or rehabilitate the existing abutments, wing walls, and piers to meet current Load Resistance Factor Design standards of the American Association of State Highway and Transportation Officials.

The 2014 Regional Transportation Plan and Sustainable Communities Strategy was the first plan in which the San Joaquin Council of Governments incorporated Senate Bill 375, which calls for greenhouse gas reductions from cars and light-duty trucks. Using a 2005 baseline set by the California Air Resources Board, the City of Tracy produced a Sustainability Action Plan, and the cities of Stockton, Lodi, and Manteca have submitted draft Climate Action Plans. These climate initiatives are currently in the implementation stages and are part of the planning process for future Regional Transportation Plan and Sustainable Communities Strategy documents.

A greenhouse gas emissions inventory estimates the amount of greenhouse gases discharged into the atmosphere by specific sources over a period of time, such as a calendar year. Tracking annual greenhouse gas emissions allows countries, states, and smaller jurisdictions to understand how emissions are changing and what actions may be needed to attain emission reduction goals. The U.S. Environmental Protection Agency is responsible for documenting greenhouse gas emissions nationwide, and the California Air Resources Board does so for the state, as required by Health and Safety Code Section 39607.4.

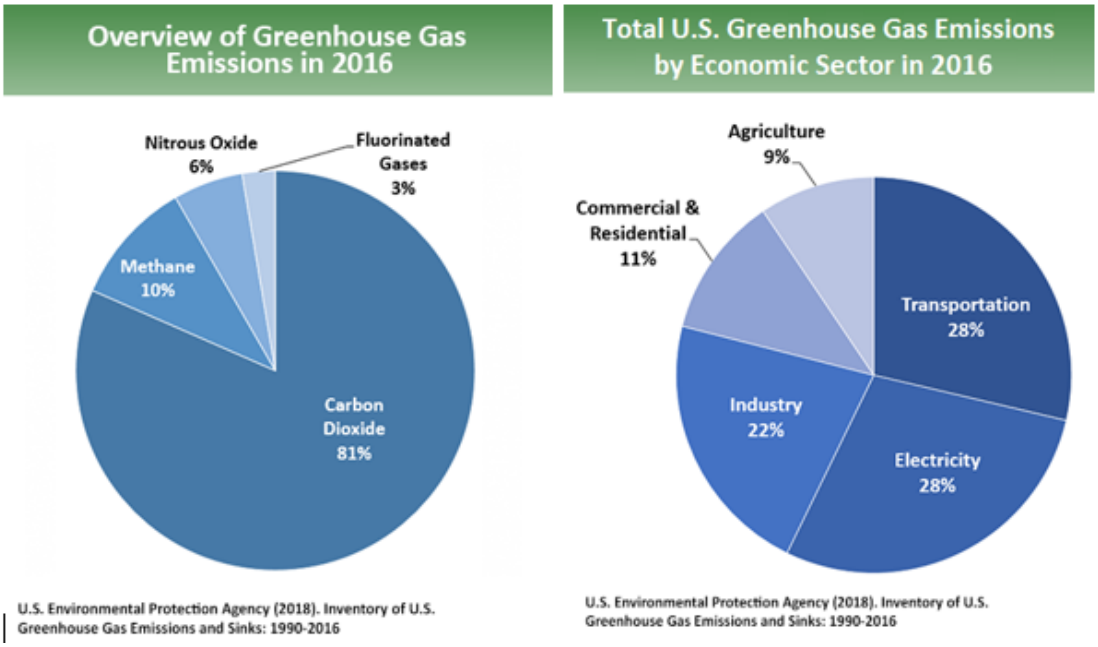
National Greenhouse Gas Inventory

The U.S. Environmental Protection Agency prepares a national greenhouse gas inventory every year and submits it to the United Nations in accordance with the Framework Convention on Climate Change. The inventory provides a comprehensive accounting of all human-produced sources of greenhouse gases in the U.S., reporting emissions of carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride. It also accounts for emissions of carbon dioxide that are removed

from the atmosphere by "sinks" such as forests, vegetation, and soils that uptake and store carbon dioxide (carbon sequestration).

The 1990-2016 inventory found that of 6,511 million metric tons of carbon dioxide equivalent greenhouse gas emissions in 2016, 81 percent consist of carbon dioxide, 10 percent are methane, and 6 percent are nitrous oxide; the balance consists of fluorinated gases. (EPA 2018a) In 2016, greenhouse gas emissions from the transportation sector accounted for nearly 28.5 percent of U.S. greenhouse gas emissions. See Figure 3-1.

Figure 3-1 U.S. 2016 Greenhouse Gas Emissions



State Greenhouse Gas Inventory

The California Air Resources Board collects greenhouse gas emissions data for transportation, electricity, commercial/residential, industrial, agricultural, and waste management sectors each year. It then summarizes and highlights major annual changes and trends to demonstrate the state's progress in meeting its greenhouse gas reduction goals. The 2019 edition of the greenhouse gas emissions inventory found total California emissions of 424.1 million metric tons of carbon dioxide equivalent for 2017, with the transportation sector responsible for 41 percent of total greenhouse gases. It also found that overall statewide greenhouse gas emissions declined from 2000 to 2017 despite growth in population and state economic output. (Air Resources Board 2019a) See Figures 3-2 and 3-3.

Figure 3-2 California 2017 Greenhouse Gas Emissions

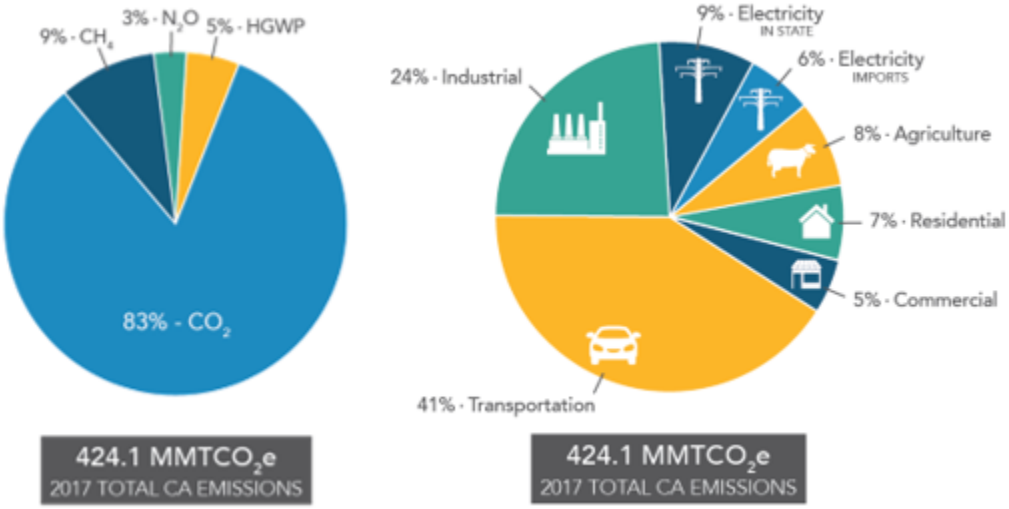
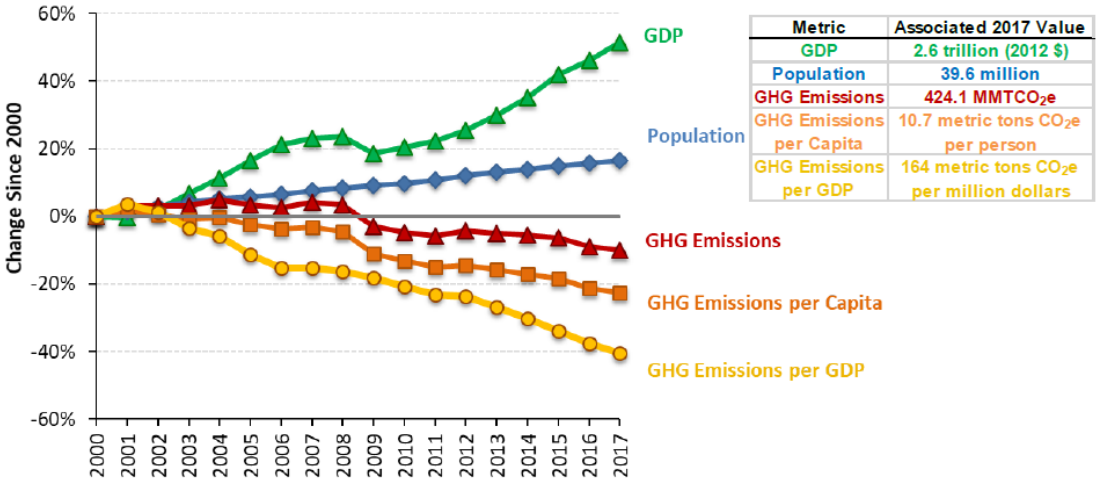


Figure 3-3 Change in California Gross Domestic Product, Population, and Greenhouse Gas Emissions since 2000



Assembly Bill 32 required the California Air Resources Board to develop a Scoping Plan that describes the approach California will take to achieve the goal of reducing greenhouse gas emissions to 1990 levels by 2020, and to update it every 5 years. The California Air Resources Board adopted the first scoping plan in 2008. The second updated plan, *California's 2017 Climate Change Scoping Plan*, adopted on December 14, 2017, reflects the 2030 target established in Executive Order B-30-15 and Senate Bill 32. The Assembly Bill 32 Scoping Plan and the subsequent updates contain the main strategies California will use to reduce greenhouse gas emissions.

Regional Plans

The California Air Resources Board sets regional targets for California's 18 Metropolitan Planning Organizations to use in their Regional Transportation Plan/Sustainable Communities Strategy to plan future projects that will

cumulatively achieve greenhouse gas reduction goals. Targets are set at a percent reduction of passenger vehicle greenhouse gas emissions per person from 2005 levels. The proposed project is included in the Regional Transportation Plan/Sustainable Communities Strategy for the regional reduction targets for the San Joaquin Council of Governments' Metropolitan Plan Organization.

The proposed project is within the jurisdiction of the San Joaquin Council of Governments' Regional Transportation Planning Agency. The 2018 Regional Transportation Plan identifies goals for greenhouse gas reduction.

Table 3.1 lists the San Joaquin Council of Governments' relevant policies and strategies to reduce greenhouse gas emissions.

Table 3.1 Regional Transportation Plans and Greenhouse Gas Reduction Policies

Title	Greenhouse Gas Reduction Policies or Strategies
San Joaquin Council of Governments' Regional Transportation Plan/Sustainable Communities Strategy (adopted June 2018)	Improve air quality by reducing, transportation-related emissions, expand the public transit network, improve regional transportation system efficiency, provide transportation improvements to facilitate nonmotorized travel, including the incorporation of complete street elements as appropriate, decrease in congested travel time, and reduce greenhouse gas emissions by reducing vehicle miles traveled.
City of Stockton Climate Action Plan (August 2014)	Trans-1: Transportation System Design Integration, Trans-3: Transit system support, Trans-4: Efficient goods movement, and Trans-5: Reduce barriers to nonmotorized travel.
City of Manteca General Plan (Draft-February 2019)	C-1.1: Strive to balance levels of service for all modes (vehicle, transit, bicycle, and pedestrian) to maintain a high level of access and mobility, C-1.4: Incorporate new transportation technologies and mobility services, C-4: Provide a safe, secure, comfortable, and convenient pedestrian and bicycle system, C-5: Maintain a coordinated and efficient bus service that provides an effective alternative to automobile use, and C-7: Reduce vehicle travel associated with employee trips and goods movement.
City of Lodi General Plan (adopted April 2010)	C-G11: Support land use, transportation management, infrastructure, and environmental planning programs that reduce vehicle emissions and improve air quality.

3.3.3 **Project Analysis**

Greenhouse gas emissions from transportation projects can be divided into those produced during operation of the State Highway System and those produced during construction. The primary greenhouse gases produced by the transportation sector are carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons. Carbon dioxide emissions are a product of the combustion of petroleum-based products, like gasoline, in internal combustion engines. Relatively small amounts of methane and nitrous oxide are emitted during fuel combustion. In addition, a small amount of hydrofluorocarbon emissions is included in the transportation sector.

The CEQA Guidelines generally address greenhouse gas emissions as a cumulative impact due to the global nature of climate change. (Public Resources Code, Section 21083(b)(2)) As the California Supreme Court explained, "because of the global scale of climate change, any one project's

contribution is unlikely to be significant by itself." (Cleveland National Forest Foundation *v.* San Diego Assn. of Governments (2017) 3 Cal.5th 497, 512.) In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable." (CEQA Guidelines Sections 15064(h)(1) and 15130)

To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. Although climate change is ultimately a cumulative impact, not every individual project that emits greenhouse gases must necessarily be found to contribute to a significant cumulative impact on the environment.

Operational Emissions

San Joaquin County is in nonattainment status for the Federal 8-hour Ozone and Particulate Matter 2.5 standards and in attainment for the Federal Particulate Matter 10 standard. San Joaquin County is in nonattainment status for the State Ozone, Particulate Matter 10, and Particulate Matter 2.5 standards.

The Stockton Channel Viaduct Bridge Improvements Project is exempt from conformity under Table 2 of 40 Code of Federal Regulations Section 93.126 "Widening narrow pavements or reconstructing bridges (no additional travel lanes)."

Per the July 2020 Air Quality Memorandum, the project would not cause any operational effects on air pollutants.

While some greenhouse gas emissions during the construction period would be unavoidable, the project, once completed, would not lead to an increase in operational greenhouse gas emissions.

Construction Emissions

Construction greenhouse gas emissions would result from material processing, onsite construction equipment, and traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

Per the July 2020 Air Quality Memorandum, construction climate change emissions are estimated at 16 tons of Carbon Dioxide over a period of 564 working days. Operational climate change emissions do not need to be estimated because the project is not capacity increasing.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the greenhouse gas emissions

produced during construction can be offset to some degree by longer intervals between maintenance and rehabilitation activities.

All construction contracts include Caltrans Standard Specifications Section 7-1.02A and 7-1.02C, Emissions Reduction, which require contractors to comply with all laws applicable to the project and to certify they are aware of and will comply with all the California Air Resources Board emission reduction regulations; and Section 14-9.02, Air Pollution Control, which requires contractors to comply with all air pollution control rules, regulations, ordinances, and statutes. Section 10-5 “Dust Control,” require the contractor to comply with the air pollution control rules, ordinances, and regulations and statutes that apply to work performed under the contract, including those provided in Government Code Section 11017.Certain common regulations, such as equipment idling restrictions, that reduce construction vehicle emissions also help reduce greenhouse gas emissions.

The project will also implement Caltrans standardized measures (such as construction best management practice) that apply to most or all Caltrans projects. Certain common regulations, such as equipment idling restrictions and development and implementation of a traffic control plan that reduce construction vehicle emissions also help reduce greenhouse gas emissions.

CEQA Conclusion

While the proposed project will result in greenhouse gas emissions during construction, it is expected that the project will not result in any increase in operational greenhouse gas emissions. The proposed project does not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. With implementation of construction greenhouse gas-reduction measures, the impact would be less than significant.

Caltrans is firmly committed to implementing measures to help reduce greenhouse gas emissions. These measures are outlined in the following section.

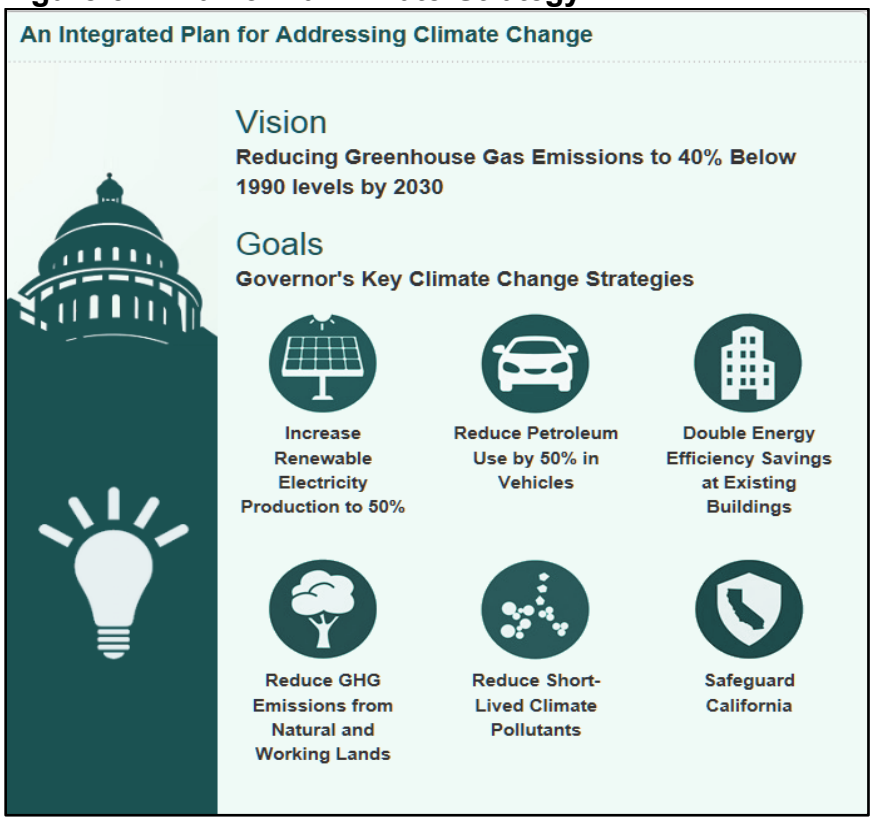
3.3.4 Greenhouse Gas Reduction Strategies

Statewide Efforts

Major sectors of the California economy, including transportation, will need to reduce emissions to meet the 2030 and 2050 greenhouse gas emissions targets. Former Governor Edmund G. Brown promoted greenhouse gas reduction goals that involved (1) reducing today’s petroleum use in cars and trucks by up to 50 percent; (2) increasing from one-third to 50 percent our electricity derived from renewable sources; (3) doubling the energy efficiency savings achieved at existing buildings and making heating fuels cleaner; (4) reducing the release of methane, black carbon, and other short-lived climate

pollutants; (5) managing farms and rangelands, forests, and wetlands so they can store carbon; and (6) periodically updating the state's climate adaptation strategy, *Safeguarding California*. See Figure 3-4.

Figure 3-4 California Climate Strategy



The transportation sector is integral to the people and economy of California. To achieve greenhouse gas emission reduction goals, it is vital that the state build on past successes in reducing criteria and toxic air pollutants from transportation and goods movement. Greenhouse gas emission reductions will come from cleaner vehicle technologies, lower-carbon fuels, and reduction of vehicle miles traveled. A key state goal for reducing greenhouse gas emissions is to reduce today's petroleum use in cars and trucks by up to 50 percent by 2030. (State of California 2019)

In addition, Senate Bill 1386 (Wolk 2016) established as state policy the protection and management of natural and working lands and requires state agencies to consider that policy in their own decision making. Trees and vegetation on forests, rangelands, farms, and wetlands remove carbon dioxide from the atmosphere through biological processes and sequester the carbon in above-ground and below-ground matter.

Caltrans Activities

Caltrans continues to be involved on the Governor's Climate Action Team as the California Air Resources Board works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in Assembly Bill 32. Executive Order B-30-15, issued in April 2015, and Senate Bill 32 (2016), set an interim target to cut greenhouse gas emissions to 40 percent below 1990 levels by 2030. The following major initiatives are underway at Caltrans to help meet these targets.

California Transportation Plan (CTP 2040)

The California Transportation Plan is a statewide, long-range transportation plan to meet our future mobility needs and reduce greenhouse gas emissions. In 2016, Caltrans completed the *California Transportation Plan 2040*, which establishes a new model for developing ground transportation systems, consistent with carbon dioxide reduction goals. It serves as an umbrella document for all the other statewide transportation planning documents. Over the next 25 years, California will be working to improve transit and reduce long-run repair and maintenance costs of roadways and developing a comprehensive assessment of climate-related transportation demand management and new technologies rather than continuing to expand capacity on existing roadways.

Senate Bill 391 (Liu 2009) requires the California Transportation Plan to meet California's climate change goals under Assembly Bill 32. Accordingly, the California Transportation Plan 2040 identifies the statewide transportation system needed to achieve maximum feasible greenhouse gas emission reductions while meeting the state's transportation needs. While Metropolitan Planning Organizations have primary responsibility for identifying land use patterns to help reduce greenhouse gas emissions, California Transportation Plan 2040 identifies additional strategies in Pricing, Transportation Alternatives, Mode Shift, and Operational Efficiency.

Caltrans Strategic Management Plan

The Strategic Management Plan, released in 2015, creates a performance-based framework to preserve the environment and reduce greenhouse gas emissions, among other goals. Specific performance targets in the plan that will help to reduce greenhouse gas emissions include:

- Increasing percentage of non-auto mode share
- Reducing vehicle miles traveled
- Reducing Caltrans' internal operational (buildings, facilities, and fuel) greenhouse gas emissions

Funding and Technical Assistance Programs

In addition to developing plans and performance targets to reduce greenhouse gas emissions, Caltrans also administers several sustainable

transportation planning grants. These grants encourage local and regional multimodal transportation, housing, and land-use planning that furthers the region's Regional Transportation Plan/Sustainable Communities Strategy; contribute to the State's greenhouse gas reduction targets and advance transportation-related greenhouse gas emission reduction project types/strategies; and support other climate adaptation goals (e.g., *Safeguarding California*).

Caltrans Policy Directives and Other Initiatives

Caltrans Director's Policy 30 Climate Change (June 22, 2012) is intended to establish a Department policy that will ensure coordinated efforts to incorporate climate change into Departmental decisions and activities. *Caltrans Activities to Address Climate Change* (April 2013) provides a comprehensive overview of Caltrans' statewide activities to reduce greenhouse gas emissions resulting from agency operations.

Project-Level Greenhouse Gas Reduction Strategies

The following measures will also be implemented in the project to reduce greenhouse gas emissions and potential climate change impacts from the project.

- Comply with Caltrans Standard Specification, Section 14-9.02 "Air Pollution Control"
- Comply with Caltrans Standard Specification, Section 10-5 "Dust Control"

3.3.5 **Adaptation**

Reducing greenhouse gas emissions is only one part of an approach to addressing climate change. Caltrans must plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and their intensity, and in the frequency and intensity of wildfires. Flooding and erosion can damage or wash out roads; longer periods of intense heat can buckle pavement and railroad tracks; storm surges combined with a rising sea level can inundate highways. Wildfire can directly burn facilities and indirectly cause damage when rain falls on denuded slopes that landslide after a fire. Effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. Accordingly, Caltrans must consider these types of climate stressors in how highways are planned, designed, built, operated, and maintained.

Federal Efforts

Under NEPA assignment, Caltrans is obligated to comply with all applicable federal environmental laws and Federal Highway Administration NEPA regulations, policies, and guidance.

The U.S. Global Change Research Program delivers a report to Congress and the president every 4 years, in accordance with the Global Change Research Act of 1990 (U.S. Code Chapter 56A Section 2921 et seq). The *Fourth National Climate Assessment*, published in 2018, presents the foundational science and the "human welfare, societal, and environmental elements of climate change and variability for 10 regions and 18 national topics, with particular attention paid to observed and projected risks, impacts, consideration of risk reduction, and implications under different mitigation pathways." Chapter 12, "Transportation," presents a key discussion of vulnerability assessments. It notes that "asset owners and operators have increasingly conducted more focused studies of particular assets that consider multiple climate hazards and scenarios in the context of asset-specific information, such as design lifetime." (USGCRP 2018)

The U.S. Department of Transportation Policy Statement on Climate Adaptation in June 2011 committed the federal Department of Transportation to "integrate consideration of climate change impacts and adaptation into the planning, operations, policies, and programs of the U.S. Department of Transportation in order to ensure that taxpayer resources are invested wisely, and that transportation infrastructure, services and operations remain effective in current and future climate conditions." (U.S. DOT 2011)

Federal Highway Administration order 5520 (*Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events,* December 15, 2014) established Federal Highway Administration policy to strive to identify the risks of climate change and extreme weather events to current and planned transportation systems. The Federal Highway Administration has developed guidance and tools for transportation planning that foster resilience to climate effects and sustainability at the federal, state, and local levels. (FHWA 2019)

State Efforts

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system. *California's Fourth Climate Change Assessment* (2018) is the state's effort to "translate the state of climate science into useful information for action" in a variety of sectors at both statewide and local scales. It adopts the following key terms used widely in climate change analysis and policy documents:

- *Adaptation* to climate change refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.
- *Adaptive capacity* is the "combination of the strengths, attributes, and resources available to an individual, community, society, or organization

that can be used to prepare for and undertake actions to reduce adverse impacts, moderate harm, or exploit beneficial opportunities."

- *Exposure* is the presence of people, infrastructure, natural systems, and economic, cultural, and social resources in areas that are subject to harm.
- *Resilience* is the "capacity of any entity—an individual, a community, an organization, or a natural system—to prepare for disruptions, to recover from shocks and stresses, and to adapt and grow from a disruptive experience." Adaptation actions contribute to increasing resilience, which is a desired outcome or state of being.
- *Sensitivity* is the level to which a species, natural system, or community, government, etc., would be affected by changing climate conditions.
- *Vulnerability* is the "susceptibility to harm from exposure to stresses associated with environmental and social change and from the absence of capacity to adapt." Vulnerability can increase because of physical (built and environmental), social, political, and/or economic factor(s). These factors include, but are not limited to: ethnicity, class, sexual orientation and identification, national origin, and income inequality. Vulnerability is often defined as the combination of sensitivity and adaptive capacity as affected by the level of exposure to changing climate.

Several key state policies have guided climate change adaptation efforts to date. Recent state publications produced in response to these policies draw on these definitions.

Executive Order S-13-08, issued by then-governor Arnold Schwarzenegger in November 2008, focused on sea-level rise and resulted in the *California Climate Adaptation Strategy* (2009), updated in 2014 as *Safeguarding California: Reducing Climate Risk*. (*Safeguarding California* Plan) The *Safeguarding California* Plan offers policy principles and recommendations and continues to be revised and augmented with sector-specific adaptation strategies, ongoing actions, and next steps for agencies.

Executive Order S-13-08 also led to the publication of a series of sea-level rise assessment reports and associated guidance and policies. These reports formed the foundation of an interim *State of California Sea-Level Rise Interim Guidance Document* (SLR Guidance) in 2010, with instructions for how state agencies could incorporate "sea-level rise projections into planning and decision making for projects in California" in a consistent way across agencies. The guidance was revised and augmented in 2013. *Rising Seas in California—An Update on Sea-Level Rise Science* was published in 2017 and its updated projections of sea-level rise and new understanding of processes and potential impacts in California were incorporated into the *State of California Sea-Level Rise Guidance Update* in 2018.

Executive Order B-30-15, signed in April 2015, requires state agencies to factor climate change into all planning and investment decisions. This

Executive Order recognizes that effects of climate change other than sea-level rise also threaten California's infrastructure. At the direction of Executive Order B-30-15, the Office of Planning and Research published *Planning and Investing for a Resilient California: A Guidebook for State Agencies* in 2017, to encourage a uniform and systematic approach. Representatives of Caltrans participated in the multi-agency, multidisciplinary technical advisory group that developed this guidance on how to integrate climate change into planning and investment.

Assembly Bill 2800 (Quirk 2016) created the multidisciplinary Climate-Safe Infrastructure Working Group, which in 2018 released its report,*Paying it Forward: The Path Toward Climate-Safe Infrastructure in California*. The report provides guidance to agencies on how to address the challenges of assessing risk in the face of inherent uncertainties still posed by the best available science on climate change. It also examines how state agencies can use infrastructure planning, design, and implementation processes to address the observed and anticipated climate change impacts.

Caltrans Adaptation Efforts

Caltrans Vulnerability Assessments

Caltrans is conducting climate change vulnerability assessments to identify segments of the State Highway System vulnerable to climate change effects including precipitation, temperature, wildfire, storm surge, and sea-level rise. The approach to the vulnerability assessments was tailored to the practices of a transportation agency, and involves the following concepts and actions:

- *Exposure*—Identify Caltrans assets exposed to damage or reduced service life from expected future conditions.
- *Consequence*—Determine what might occur to system assets in terms of loss of use or costs of repair.
- *Prioritization*—Develop a method for making capital programming decisions to address identified risks, including considerations of system use and/or timing of expected exposure.

The climate change data in the assessments were developed in coordination with climate change scientists and experts at federal, state, and regional organizations at the forefront of climate science. The findings of the vulnerability assessments will guide analysis of at-risk assets and development of adaptation plans to reduce the likelihood of damage to the State Highway System, allowing Caltrans to both reduce the costs of storm damage and to provide and maintain transportation that meets the needs of all Californians.

Project Adaptation Analysis

All projects must consider future climate conditions in the planning and design decisions for the process of making climate risk analysis. The 2019 Caltrans

Climate Change Vulnerability Assessment Technical Report was used to orient nontechnical readers on how the effects of climate change might affect the State Highway System in District 10. The technical report specifically identified regional efforts relating to climate change and preparedness. The San Joaquin Council of Governments' Climate Change Planning and Assessment Work is conducting a Climate Adaptation and Resiliency Study to identify vulnerable hazards in the region to future climate scenarios. The section on wildfires in the 2019 Caltrans Climate Change Vulnerability Assessment Technical Report discussed how increasing temperatures, changing precipitation patterns, and resulting changes to land cover are expected to affect wildfire frequency and intensity. The report identified that the project area is not in an area where there is a "High" level of concern for wildfires. The technical report also discussed sea-level rise within the low lying areas of District 10, mainly in the Sacramento-San Joaquin Delta. Even with the expansive levees within the area, flooding is still relatively common. The following section discusses how the Stockton Channel Viaduct Bridge Improvement Project would affect future climate conditions with respect to sea-level rise, floodplains, and wildfire.

Sea-Level Rise

The proposed project is not in an area that is subject to sea-level rise, so direct impacts on transportation facilities due to projected sea-level rise are not expected.

Floodplains Analysis

Per the 2019 Location Hydraulic Study and Summary Floodplain Report, the project is within the 100-year floodplain. The report determined the project would not increase the water surface elevation.

Wildfire

A review of the California Department of Forestry and Fire Protection's Fire Hazard Severity Zones Maps for San Joaquin County shows the project location is not in a high-risk area for wildfires.

Climate Change References

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U.S. Global Change Research Program (USGCRP). 2018. *Fourth National Climate Assessment*. https://nca2018.globalchange.gov/. Accessed: August 21, 2019.

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 and tribal consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including interagency coordination meetings, public meetings, public notices, and Project Development Team meetings.

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

Caltrans consulted with local jurisdictions, such as the City of Stockton, the San Joaquin Council of Governments, the California Department of Fish and Wildlife, the Native American Heritage Commission, and interested tribes to identify and assess impacts on Section 4(f) resources. Caltrans also consulted with the agencies that have jurisdiction over the Stockton Deepwater Channel, including the State Lands Commission, the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the City of Stockton regarding potential water impacts. Caltrans consulted with the California Department of Fish and Wildlife regarding impacts on sensitive fish species. Related coordination activities also occurred throughout Section 106 of the National Historic Preservation Act and Tribal Consultation process. This coordination is summarized below.

Caltrans has prepared an Initial Study instead of an Environmental Impact Report because the project is not expected to have any significant effects.

Biological Resource Coordination

Caltrans coordinated and corresponded with the National Marine Fisheries Service for formal consultation on impacts to the California Central Valley Evolutionarily Significant Unit steelhead trout and Green Sturgeon-Southern Distinct Population Segment.

Caltrans also performed a query on a National Marine Fisheries Service List referencing the Stockton West and Stockton East U.S. Geological Survey quadrangles on May 16, 2019. A California Natural Diversity Database list of sensitive species referencing the Stockton West and Stockton East U.S. Geological Survey quadrangles was downloaded on May 16, 2019.

U.S. Fish and Wildlife Service

Caltrans coordinated and corresponded with the U.S. Fish and Wildlife Service, which has jurisdiction over federal threatened and endangered species. The U.S. Fish and Wildlife Service provided an official species list for the project's Action Area on May 16, 2019. A biological assessment would be submitted to the U.S. Fish and Wildlife Service for formal consultation on impacts to the Delta smelt and longfin smelt. Coordination would also continue throughout 2019 with the U.S. Fish and Wildlife Service to consider appropriate avoidance, minimization, and mitigation measures for special-status wildlife and rare plants.

California Department of Fish and Wildlife

Caltrans coordinated and corresponded with the California Department of Fish and Wildlife. A list of California Fish species of special concern potentially occurring within the Sacramento-San Joaquin Delta Basin watershed was downloaded from the California Department of Fish and Wildlife Biogeographic Information and Observation System website ("California Native Fish Species by Watershed" dataset) on May 16, 2019.

Cultural Resource Coordination

Native American Coordination

- Caltrans consulted with the Native American Heritage Commission on May 23, 2018, to request a search of the commission's Sacred Lands File and an updated contact list. The Native American Heritage Commission responded on May 29, 2018.
- Caltrans sent out initial Section 106 and Assembly Bill 52 letters to the tribes listed on the Native American Heritage Commission list on November 8, 2018; the tribes did not respond. Caltrans sent out a second letter on December 28, 2018. Caltrans received a response from Wilton Rancheria on January 4, 2019, stating the rancheria would like to consult on this project and requested more information.
- Further follow-up on the letters brought forward concerns by the North Valley Yokuts Tribe of potential prehistoric archaeological deposits within the area of potential effects. Archaeological testing within the area of potential effects resulted in the identification of buried historic refuse and fragmented human remains.
- Caltrans will continue to consult with both Wilton Rancheria and the North Valley Yokuts Tribe throughout the life of the project.

Section 4(f)

City of Stockton

Caltrans consulted early with the jurisdictional owner of the Section 4(f) property to identify the de minimis impacts. Caltrans also consulted with the agencies that have jurisdiction over the Stockton Deep Water Channel, including the Coast Guard, the U.S. Army Corps of Engineers, and the U.S. Fish and Wildlife Service, regarding potential impacts to the boat launch.

San Joaquin Council of Governments

Caltrans met with a variety of stakeholders, including the San Joaquin Council of Governments, for regional air quality conformity on the project.

Chapter 5 List of Preparers

The following Department staff and consultants contributed to the preparation of this IS/EA:

Allam Alhabaly, Transportation Engineer. B.S., California State University, Fresno, School of Engineering; 18 years of experience in environmental technical studies, with emphasis on noise studies. Contribution: Noise Study Report.

Myles Barker, Editorial Specialist. B.A., Mass Communication and Journalism, California State University, Fresno; 5 years of writing and editing experience. Contribution: Technical Editor.

Jonathan Coley, Associate Environmental Planner (Generalist). B.A., Environmental Studies-Planning, University of California at Santa Cruz; 13 years of environmental compliance and planning experience. Contribution: Project coordination, environmental document preparation, Section 4(f)-determination Memorandum, Community Impact Assessment Memorandum, and Cumulative Impact Analysis Memorandum.

Jeffrey Delsescaux, Associate Environmental Planner (Archaeology). M.A., Anthropology (Archaeology Option), California State University, Los Angeles; B.A., Anthropology, California State University, Fullerton; 11 years of experience in archaeology, 2 years in cultural resource management. Contribution: Oversight review of the Archaeological Survey Report.

Scott Guidi, Senior Environmental Planner. B.S., Wildlife Management, Humboldt State University; 10 years of environmental planning experience and 14.5 years with Caltrans. Contribution: Project coordination, environment document review and oversight.

Mohammad Hajeer, Engineer. B.S., Civil Engineering, California State University, Sacramento; 2 years of experience as a Caltrans Stormwater Coordinator. Contribution: Stormwater coordination.

Maya Hildebrand, Associate Environmental Planner (Air Quality Coordinator). B.S., Geology, Utah State University; 6 years of experience in air quality analysis and 5 years of experience in combined geological/environmental hazards. Contribution: Air Quality Study.

Adam Inman, Engineering Geologist. M.S., Geology, California State University, Fresno; B.S., Geology with a minor in Applied Geology, California State University, Stanislaus; 6 years of experience in

geology, engineering geology, and environmental geology. Contribution: Paleontology Study.

Rogerio Leong, Engineering Geologist. B.S., Geology, University of Sao Paulo, Brazil; 18 years of environmental site assessment and investigation experience. Contribution: Water Quality Report.

Jason Meigs, Associate Environmental Planner (Natural Sciences). B.A., Environmental Studies, minor in Biological Sciences, California State University, Sacramento; more than 20 years of environmental planning and biological sciences experience. Contribution: Natural Environment Study and Biological Assessment.

Jonathan Schlee, Engineering Geologist. B.S., Biology, California State University, Sacramento; 11 years of environmental planning experience and 5 years of hazardous waste studies experience. Contribution: Initial Site Assessment.

Far Western Anthropological Research Group, Inc.

Cassidy DeBaker, M.S., Cultural Resource Management, Sonoma State University; 18 plus years' experience as a professional archaeologist. Contribution: Archaeological Survey Report.

Tod Hildebrandt, M.S., Cultural Resource Management, Utah State University; 14 plus years of experience as a professional archaeologist. Contribution: Archaeological Survey Report.

Kelly McGuire, M.A., Over 35 years' experience as a professional archeologist. Contribution: Archaeological Survey Report

Chapter 6 Distribution List

The Initial Study/Environmental Assessment has been sent to the following addresses. All addresses are in California, except where noted:

- California Department of Parks and Recreation, Post Office Box 942896 , Sacramento, California 94296
- California Department of Fish and Wildlife, 7329 Silverado Trail, Napa, California 94558
- Department of Resources Recycling and Recovery (Cal Recycle), Post Office Box 4025, Sacramento, California 95812
- California State Assembly member Susan Eggman, 31 East Channel Street, Suite 306, Stockton, California 95202
- California State Lands Commission, 100 Howe Avenue, Suite 100, South Sacramento, California 95825-8202
- California State Senator Cathleen Galgiani, 31 East Channel Street, Suite 440, Stockton, California 95202
- California State Water Resources Control Board, Division of Water Quality, Post Office Box 100, Sacramento, California 95812
- Central Valley Flood Protection Board, 3310 El Camino Avenue, Suite 107, Sacramento, California 95821
- Central Valley Regional Water Quality Control Board, 11020 Sun Center Drive, Suite 200, Rancho Cordova, California 95670-6114
- City of Stockton, Clerk, 425 North El Dorado Street, Stockton, California 95202
- City of Stockton, Councilmembers, 425 North El Dorado Street, Stockton, California 95202
- City of Stockton, Manager, 425 North El Dorado Street, Stockton, California 95202
- City of Stockton, Mayor, 425 North El Dorado Street, Stockton, California 95202
- City of Stockton, Public Works, 22 East Weber Avenue, Stockton, California 95202
- National Oceanic and Atmospheric Administration Fisheries, 650 Capitol Mall, Suite 5-100, Sacramento, California 95814
- San Joaquin Council of Governments, 555 East Weber Avenue, Stockton, California 95202
- San Joaquin County, Administrator, 44 North San Joaquin Street, Stockton, California 95202

- San Joaquin County, Board of Supervisors, 44 North San Joaquin Street, Stockton, California 95202
- San Joaquin County, Public Works, 1810 East Hazelton Avenue, Stockton, California 95205
- San Joaquin County Sheriff's Office, 7000 Michael Canlis Boulevard, French Camp, California 95231
- U.S. Army Corps of Engineers Regulatory Branch, 1325 J Street, Room 1513, Sacramento, California 95814
- U.S. Coast Guard, 2703 Martin Luther King Junior Avenue, SE Washington, D.C. 20593-7000
- U.S. Environmental Protection Agency, Pacific Southwest, Region 9, 75 Hawthorne Street, San Francisco, California 94105
- U.S. Fish and Wildlife Service, 2800 Cottage Way, Room W-2605, Sacramento, California 95825
- U.S. Representative Jerry McNerney, 2222 Grand Canal Boulevard, Number 7, Stockton, California 95207
- U.S. Senator Dianne Feinstein, 2500 Tulare Street, Suite 4290, Fresno, California 93721
- U.S. Senator Kamala Harris, 2500 Tulare Street, Suite 5290, Fresno, California 93721

Appendix A Section 4(f)

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 U.S. Code 303, declares that "it is the policy of the U.S. 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."

Section 4(f) further requires coordination with the Department of the Interior and, as appropriate, the involved offices of the Department of Agriculture and the Department of Housing and Urban Development in developing transportation projects and programs that use lands protected by Section 4(f). If historic sites are involved, then coordination with the State Historic Preservation Officer is also needed.

Responsibility for compliance with Section 4(f) has been assigned to Caltrans pursuant to 23 U.S. Code 326 and 327, including determinations and approval of Section 4(f) evaluations, as well as coordination with those agencies that have jurisdiction over a Section 4(f) resource that may be affected by a project action.

Resources Evaluated Relative to the Requirements of Section 4(f): No-Use Determination(s)

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.

The project proposes to rehabilitate or replace the existing Stockton Channel Viaduct Bridge. The proposed rehabilitation work consists of removing and replacing the bridge decks, railings, diaphragms, and expansion joints, as well

as repairing and strengthening steel elements, including girders and lateral bracing. The proposed replacement work consists of removing and replacing the superstructure, bents, columns, and foundations. Additionally, the project would replace or rehabilitate the existing abutments, wing walls, and piers to meet current standards. As discussed earlier, there are three build alternatives proposed for the project.

The following resources were identified within 0.5 mile of the project study area, but no use would occur:

Boat Launches

Currently, several boat launch facilities in the city of Stockton are available for use, one without a fee. Others are listed below. The following launch locations are within the project vicinity:

- Louis Park (no-fee)
- 5 Star Marina
- Buckley Cove Boat Launch
- Ladd's Stockton Marina
- Riverpoint Landing Marina-Resort

The boat launches are Section 4(f) resources, but no "use" would occur. Therefore, the provisions of Section 4(f) do not apply.

Class 1 Bicycle Path

A Class 1 bike path is within 0.5 mile of the project along the waterfront. This property is a Section 4(f) property, but no "use" would occur. Therefore, the provisions of Section 4(f) do not apply.

South Seawall Park

South Seawall Park is within 0.5 mile of the project, at Weber Street and Center Street in downtown Stockton. The property is a recreational park owned and operated by the City of Stockton. The park is separated from the project site by Mormon Slough, and access would not be interrupted due to the project. The property is a Section 4(f) property, but no "use" would occur. Therefore, the provisions of Section 4(f) do not apply.

North Seawall Park

North Seawall Park is within 0.75 mile of the project and encompasses the waterfront at the confluence of the Stockton Deep Water Channel and Fremont Channel, just south of Banner Island Ballpark. The park is not near the project site and would remain open throughout project construction. The

property is a Section 4(f) property, but no "use" would occur. Therefore, the provisions of Section 4(f) do not apply.

Victory Park

Victory Park is owned and operated by the City of Stockton and is within 0.5 mile of the project vicinity, near the Pershing Avenue off-ramp. The park would remain open throughout project construction, and access would not be impaired. The property is a Section 4(f) property, but no "use" would occur. Therefore, the provisions of Section 4(f) do not apply.

Stockton Downtown Marina

The Stockton Downtown Marina is within 0.5 mile of the project and has boating slips for long-term boaters. The City of Stockton operates the Stockton Downtown Marina, which would remain open throughout project construction. The property is a Section 4(f) property, but no "use" would occur. Therefore, the provisions of Section 4(f) do not apply.

Section 4(f) De Minimis Determination

This section of the document discusses de minimis impact determinations under Section 4(f). Section 6009(a) of SAFETEA-LU amended Section 4(f) legislation at 23 U.S. Code 138 and 49 U.S. Code 303 to simplify the processing and approval of projects that have only de minimis impacts on lands protected by Section 4(f). This amendment provides that once the U.S. Department of Transportation determines that a transportation use of Section 4(f) property, after consideration of any impact avoidance, minimization, and mitigation or enhancement measures, results in a de minimis impact on that property, an analysis of avoidance alternatives is not required, and the Section 4(f) evaluation process is complete. The Federal Highway Administration's final rule on Section 4(f) de minimis findings is codified in 23 Code of Federal Regulations 774.3 and Code of Federal Regulations 774.17.

Responsibility for compliance with Section 4(f) has been assigned to Caltrans pursuant to 23 U.S. Code 326 and 327, including de minimis impact determinations, as well as coordination with those agencies that have jurisdiction over a Section 4(f) resource that may be affected by a project action.

Per the June 2020 Section 4(f) De Minimis Determination Memorandum, one Section 4(f) resource was identified within the project area. Morelli Park Boat Launch is a four-acre public park with two picnic tables, a boat launch facility, and parking for vehicles and boat trailers. The park is notably used for its four-lane boat launch, which provides recreational access to the Stockton Deep Water Channel. The property where Morelli Park is located is owned by Caltrans and is leased to the City of Stockton under an Airspace Lease Agreement.

Caltrans has determined the project would have a de minimis use on Morelli Park. As a safety measure to the public, Morelli Park would be closed to the public during construction for all three build alternatives. Construction is expected to take four construction seasons. Closure of the park would constitute a "use" of Section 4(f) resources. Caltrans considers the temporary closure of Morelli Park during construction to be minor, and therefore a de minimis determination would be warranted. The scope of work to be conducted within the limits of Morelli Park are material staging and the installation of falsework and framework to build the viaduct bridges. All the attributes of the park—boat launch, picnic areas, and parking—would remain the same. Any damages to the parking area and park will be repaired and returned to their original conditions.

Caltrans has identified alternative boat launch locations the public can use while Morelli Park is closed during construction. There are three boat launch facilities within a short distance from Morelli Park. There is the Downtown Marina, Louis Park, and Buckley Cove. Signs can be placed at the entrance of Morelli Park to direct the public to these alternative boat launch facilities while Morelli Park is closed during construction.

The public would be allowed to comment on the de minimis determination during the environmental review period. Once the public comment review period is over, Caltrans would seek concurrence from the City of Stockton, which is the agency with jurisdiction over Morelli Park.

Avoidance, Minimization and Mitigation Measures

Avoidance, minimization, and mitigation measures were not identified as being needed to make the de minimis determination. As discussed above, notices would be placed at the entrance of Morelli Park to direct the public to alternative boat launch facilities within the area. Coordination with the City of Stockton's Economic Development Department would take place to ensure the public is aware of the status of the park during construction.

Appendix B Title VI Policy Statement

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY Gavin Newsom, Governor

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
P.O. BOX 942873, MS-49
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PHONE (916) 654-6130
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TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

November 2019

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, remedies, 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, or obtain more information regarding Title VI, please contact the Title VI Branch Manager at (916) 324-8379 or visit the following web page: https://dot.ca.gov/programs/business-and-economic-opportunity/title-vi.

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, at 1823 14th Street, MS-79, Sacramento, CA 95811; (916) 324-8379 (TTY 711); or at Title.VI@dot.ca.gov.

Toks Omishakin
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

RELOCATION ASSISTANCE ADVISORY SERVICES

This appendix is general in nature and is not intended to be a complete statement of federal and state relocation laws and regulations. Any questions about relocation should be addressed to Caltrans' Division of Right of Way and Land Surveys.

This section provides some general descriptive information on Public Law 91-646, the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. This is often referred to as the "Uniform Act." The information in this appendix is provided only as background and is not intended as a complete statement of all the state or federal laws and regulations; for specific details, the environmental planner should contact the Department's District or Regional Right of Way Relocation Branch. After presenting an outline of the legal foundation for relocation policy, the appendix looks at important relocation assistance information, including advisory services and the payment program. Refer to the Department's Right of Way Manual Chapter 10 for more detailed and specific information on relocation and housing programs.

For more information or a brochure on the relocation program, please contact the Public Information Office at 209-948-7977 or write to Caltrans Central Region Environmental Division, Attention: Scott Guidi, Senior Environmental Planner, 1976 East Doctor Martin Luther King Junior Boulevard, Stockton, California 95205.

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 U.S. 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, make 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 used 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. The Department 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 more than 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 expected 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:

1. The number of people to be displaced.
2. Specific arrangements needed to accommodate any family member(s) with special needs.
3. Financial ability to relocate into comparable replacement dwelling which will adequately house all members of the family.

4. Preferences in the area of relocation.
5. 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 Glossary of Technical Terms

Active Fault: A fault that has moved recently and which is likely to move again. For planning purposes, an "active fault" is usually defined as one that shows movement within the last 11,000 years and can be expected to move within the next 100 years.

Aerially Deposited Lead: Lead deposited along highway shoulders from past leaded fuel vehicle emissions. Even though leaded fuel has been prohibited in California since the 1980s, aerially deposited lead can still be found along highways that were in use prior to that time.

Air Pollutants: Gas released directly into the air or formed through human-made substances or chemical reactions in the atmosphere.

Ambient Air Quality: The atmospheric concentration (amount in a specified volume of air) of a specific compound as actually experienced at a particular geographic location that may be some distance from the source of the relevant pollutant emissions.

Archaeological Resources: Refers to the material remains of past human life, culture, or activities.

Asbestos: Asbestos is an air quality, as well as a hazardous materials issue produced from construction activities.

California Environmental Quality Act: A state law (Public Resources Code Section 21000 et al.) requiring state and local agencies to take actions on projects with consideration for environmental protection. If a proposed activity may result in a significant adverse effect on the environment, an Environmental Impact Report must be prepared. General plans require a "program Environmental Impact Report," and park development projects require a project environmental document.

Carbon Monoxide: Carbon monoxide is a pollutant released directly from vehicles.

Construction Site Best Management Practices: Are the best conventional technology/best available technology-based Best Management Practices that are consistent with the Best Management Practices and control practices required under the Clean Water Act. The Construction Site Best Management Practices manual provides guidance on the selection and implementation of Best Management Practices into construction projects within the Caltrans right-of-way.

Cultural: 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.

Particulate Matter 10 and Particulate Matter 2.5: Refers to airborne particles that are less than 10 microns in diameter (Particulate Matter 10) and less than 2.5 microns in diameter (Particulate Matter 2.5), respectively.

Appendix E Avoidance, Minimization and/or Mitigation Summary

To ensure that all of the environmental measures identified in this document are executed at the appropriate times, the following mitigation program (as articulated on the proposed Environmental Commitments Record that follows) would be implemented. During project design, avoidance, minimization, and/or mitigation measures will be incorporated into the project's final plans, specifications, and cost estimates, as appropriate. All permits will be obtained prior to the implementation of the project. During construction, environmental and construction/engineering staff will ensure that the commitments contained in the Environmental Commitments Record are fulfilled. Following construction and appropriate phases of project delivery, long-term mitigation maintenance and monitoring will take place, as applicable. Because the following Environmental Commitments Record is a draft, some fields have not been completed; they will be filled out as each of the measures is implemented.

Note: Some measures may apply to more than one resource area. Duplicated or redundant measures have not been included in this Environmental Commitments Record.

Less Than Significant Impacts

Biological Resources

ESA-1: Environmentally Sensitive Area Designation: The establishment of environmentally sensitive areas would be designated by environmentally sensitive area fencing within Caltrans' right-of-way.

"Environmentally sensitive area" information would be shown on contract plans and discussed in Section 14-1.02 of the Caltrans 2018 Standard Specifications or any Standard Special Provisions in Section 14-1.02. "Environmentally sensitive area" provisions may include but are not necessarily limited to the use of temporary orange fencing or other high-visibility marking to identify the proposed limit of work in areas next to sensitive resources or to locate and exclude sensitive resources from potential construction impacts. Contractor encroachment into "environmentally sensitive areas" would be prohibited, and immediate work stoppage and notification to the Caltrans resident engineer would be required if an "environmentally sensitive area" is breached. "Environmentally sensitive area" provisions would be implemented as the first order of work and remain in place until all construction activities are complete.

BIO-1: Designated Biologist: A designated biologist or biologists shall be onsite during any activities that have the potential to affect sensitive biological

resources. A designated biologist would monitor regulated species and habitats, ensure that construction activities do not result in the unintended take of regulated species or disturbances to regulated habitats, would ensure that construction activities comply with any permits, licenses, agreements, or contracts, would immediately notify the Caltrans resident engineer of any take of regulated species, disturbances to regulated habitats, or breaches of environmentally sensitive area areas, and would prepare, submit, and sign notifications and reports. A designated biologist who performs specialized activities must have demonstrated field experience working with the regulated species or performing the specialized task, and regulatory agency approval would be required before Caltrans' acceptance of the designated biologist.

BIO-2: Worker Environmental Awareness Training for Construction Personnel: Before any work occurs in the project area, a qualified designated biologist (familiar with the resources to be protected) would conduct a mandatory contractor and worker environmental awareness training for construction personnel. The awareness training would be provided to all construction personnel (contractors and subcontractors) to brief them on the need to avoid and minimize effects to sensitive biological resources within and next to construction areas and the penalties for not complying with applicable state and federal laws and permit requirements. The biologist would inform all construction personnel about the life history and habitat requirements of special-status habitats and species known to occur or with potential for occurrence onsite, the importance of maintaining habitat, and the terms and conditions of regulatory requirements.

Additionally, the contractor and worker environmental awareness training would cover general restrictions and guidelines that must be followed by all construction personnel to reduce or avoid effects on sensitive biological resources during project construction. The training would also include identifying the Best Management Practices written into construction specifications for avoiding and minimizing the discharge of construction materials or other contaminants into jurisdictional waters.

Contractor and worker environmental awareness training would be required for any construction personnel intending to enter the construction zone for more than 15 minutes. Any biologists conducting the contractor and worker environmental awareness training must meet the qualifications of regulatory agencies, and copies of training sign-in sheets for construction personnel would be provided to regulatory agencies upon their request.

BIO-3: Limited Operation Period—In-Water Construction Activities: It is proposed that construction activities occurring below the highest high tide line of the Stockton Deep Water Channel within the project's Action Area shall occur between June 1 and October 15 of any construction season, unless earlier or later dates for in-channel construction activities are approved by the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and

National Marine Fisheries Service. This seasonal "in-water" work window represents the amount of time predicted by Caltrans' engineering staff to complete project construction within the planned four construction seasons.

In-water construction activities are intended to include pile driving for sheet pile cofferdams, pile driving steel pipe piles for temporary trestles, pile driving of cast-in-steel-shell piles for deep foundations, during the dewatering of temporary cofferdams and fish salvage efforts, and during the removal of temporary steel pipe piles and steel sheet piles. It is also proposed that any structure demolition activities occurring directly over the Stockton Deep Water Channel occur during the proposed June 1 and October 15 "in-water" work window. Special Provisions under Section 10-1.03 of the Caltrans 2018 Standard Specifications (Time Constraints) would be used to specify any time constraints for specific construction activities. By requiring contractors to adhere to these dates for in-channel construction, the project proponent would minimize project effects to receiving waters and on the most sensitive life stages of special-status fish species.

The proposed in-water work window is not intended to restrict the contractor's use of barges or over-water temporary trestles to access construction sites above the highest high tide line (construction of pile cap and superstructure elements) or to restrict the contactor's work behind dewatered cofferdams during the restricted period of October 16 to May 31.

BIO-4: Containment Measures/Construction Site Best Management Practices: To contain construction-related material and prevent debris and pollutants from entering receiving waters and to reduce the potential for discharge to receiving waters, the contractor shall follow all applicable guidelines and requirements in Section 13 of the Caltrans 2018 Standard Specifications or any Standard Special Provisions in Section 13 regarding water pollution control and general specifications for preventing, controlling, and abating water pollution in streams, waterways, and other bodies of water.

The project design team may specify "Best Management Practices" to be used during construction in addition to, or in place of, other temporary measures selected by the contractor. Project-specific Best Management Practices would address (among other things):

- Spill Prevention and Control (Caltrans 2017 Best Management Practices Manual WM-4)
- Material Management (Material Delivery, Use, Storage, and Stockpiles; Caltrans 2017 Best Management Practices Manual WM-1 through WM-4)
- Waste Management (Solid, Hazardous, Concrete, Sanitary/Septic Wastes, Contaminated Soils; Caltrans 2017 Best Management Practices Manual WM-5 through WM-10)

- Vehicle and Equipment Cleaning, Fueling, and Maintenance (Caltrans 2017 Best Management Practices Manual NS-8 through NS-10)
- Material and Equipment Use Over Water (Caltrans 2017 Best Management Practices Manual NS-13)
- Structure Removal Over or Adjacent to Water (Caltrans 2017 Best Management Practices Manual NS-15)
- Paving, Sealing, Sawing, Grooving and Grinding Activities (Caltrans 2017 Best Management Practices Manual NS-3)
- Pile Driving (Caltrans 2017 Best Management Practices Manual NS-11)
- Concrete Curing and Finishing (Caltrans 2017 Best Management Practices Manual NS-12)
- Dewatering (Caltrans 2017 Best Management Practices Manual NS-2)
- Temporary Soil Stabilization (Caltrans 2017 Best Management Practices Manual SS-1 through SS-10)
- Temporary Sediment Control (Caltrans 2017 Best Management Practices Manual SC-1 through SC-10)
- Temporary Tracking Control (Caltrans 2017 Best Management Practices Manual TC-1 through TC-3)
- Temporary Concrete Washouts (Caltrans 2017 Best Management Practices Manual WM-8)
- Illicit Connection/Illegal Discharge Detection and Reporting (Caltrans 2017 Best Management Practices Manual NS-6)

Further water pollution control information and guidance for contractors is provided in the following Caltrans Manuals:

- Field Guide to Construction Site Dewatering (Caltrans, 2014)
- Stormwater Pollution Prevention Plan and Water Pollution Control Program Preparation Manual (Caltrans, 2011)
- Construction Site Best Management Practices Manual (Caltrans, 2017)
- Construction Site Monitoring Program Manual (Caltrans, 2013)

Before construction starts, the contractor would be required to submit either a Water Pollution Control Plan or a Stormwater Pollution Prevention Plan, as appropriate. Caltrans would review and approve the Water Pollution Control Plan or Stormwater Pollution Prevention Plan within 7 to 15 days of contract approval. The contractor would develop a Spill Prevention and Control Plan as a component of the Water Pollution Control Plan or Stormwater Pollution Prevention Plan. Specific Best Management Practices options would be considered, evaluated, and dependent on factors such as field conditions, changes to construction strategies, and regulatory requirements to protect the beneficial uses of receiving waters. Best Management Practices options

would be based on the best conventional and best available technology. Caltrans staff and the contractor are required to perform routine inspections of the construction area to verify that field Best Management Practices are properly implemented, maintained, and are operating effectively and as designed.

BIO-5: Restore and Revegetate Temporarily Disturbed Areas Onsite: Disturbed areas within the construction limits would be graded to minimize surface erosion and siltation into receiving waters. Disturbed areas would be recontoured to as close to the pre-project condition as possible; they would be stabilized as soon as feasible (and no later than October 15 of each construction season) to avoid erosion during subsequent storms and runoff. Permanent erosion control seeding would be performed at all disturbed sites by hydroseeding throughout construction as each site is completed, with all sites seeded by the completion of construction activities.

BIO-6: Vibratory Pile Installation: Vibratory drivers would be used for all driven piles to the maximum extent feasible to reduce the potential for adverse effects from an impact driver. There are no established injury criteria for vibration pile driving. A vibratory machine would be first used to drive a pile as far as possible. An impact hammer would then be used to drive the pile to its final position if necessary.

BIO-7: Impact Pile Driving Attenuation: To reduce potential sound impacts to fish species and other aquatic organisms, all impact pile driving would be performed behind a National Marine Fisheries Service, U.S Fish and Wildlife Service, and California Department of Fish and Wildlife-approved aquatic sound attenuation device or devices that would reduce the transmission of sound through the water. The aquatic sound attenuation devices that may be approved by the National Marine Fisheries Service, U.S. Fish and Wildlife Service, and California Department of Fish and Wildlife are likely to include unconfined air-bubble curtains, multiple-stage unconfined air-bubble curtains, confined air-bubble curtains, and/or cofferdams. Special Provisions under Section 10 (General Construction) or other sections (including Section 14-06.3 Species Protection) of the Caltrans 2018 Standard Plans may be used to specify work that furnishes, operates, monitors, maintains, and removes aquatic sound attenuation systems. The specifications for contractor submittals, materials, construction, and inspection would be developed before project construction based upon the requirements of regulatory permits, licenses, agreements, or contracts.

BIO-8: Daily Limited Operation Period Impact Pile Driving: According to the National Marine Fisheries Service (National Marine Fisheries Service Pile Driving Calculator), the Sound Exposure Level cumulative is considered as a reset to zero after a 12-hour period in a river or tidally influenced waterway. To ensure that Sound Exposure Level cumulative does not exceed preliminary estimates for the appropriate pile sizes and types, pile driving with

impact hammers within the waters of the Stockton Deep Water Channel shall see a 12-hour nonoperational period during each 24-hour cycle. Special Provisions under Section 10-1.03 of the Caltrans 2018 Standard Specifications (Time Constraints) would be used to specify any time constraints for specific construction activities.

BIO-9: Salvage Species from Dewatered Areas: In the absence of fish relocation, special-status fish species or other aquatic organisms exposed to dewatering would suffer thermal stress, desiccation, and/or physical injury from construction equipment. By removing fish from dewatered stream reaches within the construction areas, the project is expected to significantly reduce the number of special-status fish species and other aquatic organisms that are injured or killed during the summer work season. Salvaged fish and other aquatic organisms would be relocated to suitable habitats within the Action Area but outside of the construction area (within about 3,280 feet of the environmental study limits). A fish relocation plan would be prepared by a designated biologist for review and approval by the U.S. Fish and Wildlife Service, National Marine Fisheries Service, and California Department of Fish and Wildlife before the start of construction activities. Designated biologists conducting fish salvage activities must be approved by the U.S. Fish and Wildlife Service, National Marine Fisheries Service, and the California Department of Fish and Wildlife.

BIO-10: Construction and Structure Lighting: It is highly recommended that both outdoor temporary construction lighting and outdoor permanent roadway, structure, and signal lighting luminaires have correlated color temperatures under about 3,000 Kelvin. Luminaires in this color range are more energy efficient, improve public health and safety, and are less disturbing to nocturnal wildlife including birds, insects, turtles, fishes, amphibians, bats, and other species.

Luminaires for both permanent and temporary lighting systems are specified in Caltrans' 2018 Standard Specifications Section 86-1.02K. Luminaires for all lighting systems must be either low-pressure sodium or light-emitting diode type. Low-pressure sodium lamps have a color temperature that generally ranges from 2,200 Kelvin to 2,700 Kelvin, and these types of luminaires easily meet this recommendation. Caltrans' 2018 Standard Specifications specify that all luminaires must have a correlated color temperature range from 2,700 Kelvin to 3,500 Kelvin. Non-standard special provisions may need to be developed under Caltrans' 2018 Standard Specifications Section 86-1.02K to specify light-emitting diode luminaires with color temperatures of under 3,000 Kelvin.

To prevent unnecessary outdoor light pollution, temporary outdoor construction lighting, as well as outdoor permanent roadway, structure, and signal lighting luminaires, would be shielded in a manner that prevents light from penetrating above the 90-degree angle. Temporary construction lighting

directly over the surface of the waters of the Stockton Deep Water Channel would be minimized to the maximum extent feasible.

BIO-11: Migratory Birds and Raptors Remove Nesting Habitat During Non-Nesting Season: Performing woody vegetation removal or other construction activities within nesting bird habitat (structures work) during the non-nesting season (between October 1 and January 31) would not require pre-construction surveys or the use of nest-exclusion devices for migratory birds.

BIO-12: Migratory Birds and Raptors Exclusionary Devices: If work that would potentially interfere with bird nesting sites is proposed or is likely to occur between February 1 and September 30, devices such as netting or other means may be used to block access to bird nesting sites where work would be performed. Exclusionary devices must be installed after September 30 but before February 1 of any construction season and would be maintained and left in place between February 1 and September 30 of any construction season. Exclusionary devices for migratory birds may be removed when a designated biologist determines that work would not interfere with bird nesting sites or until all construction activities in bird nesting areas are completed. Exclusionary devices for migratory birds shall be specified under Caltrans' 2018 Standard Specification and/or Standard Special Provisions under Section 14-6.03A Species Protection and/or Section 14-6.03(B) Bird Protection.

BIO-13: Migratory Birds and Raptors Pre-Construction Surveys During Nesting Season: If woody vegetation removal, structures construction, ground-disturbing activities, or other project-related activities are scheduled during the nesting season of protected raptors and migratory birds (February 1 to September 30), a focused survey for active nests of such birds shall be conducted by a designated biologist within 15 days before the start of project-related activities. If active nests are found, a protective no-work buffer would be established, and Caltrans shall consult with the U.S. Fish and Wildlife Service regarding appropriate actions to comply with the Migratory Bird Treaty Act of 1918 and with the California Department of Fish and Wildlife to comply with provisions of the California Fish and Game Code. If a lapse in project-related work of 15 days or longer occurs, another survey and, if required, consultation with the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife would be required before the work can start again.

Pre-construction surveys for nesting migratory birds and raptors shall be specified under Caltrans' 2018 Standard Specification and/or Standard Special Provision Section 14-6.03A Species Protection and/or Section 14-6.03(B) Bird Protection.

BIO-14: Migratory Birds and Raptors Protective Buffers: If a designated biologist detects nesting migratory birds or nesting raptors during the pre-construction survey, an appropriate no-work buffer would need to be established around the nest or burrow. No work would start within the buffer until authorization is received from the resident engineer. Protective buffer radii for nesting migratory birds and raptors shall be specified under Caltrans' 2018 Standard Specification and/or Standard Special Provision Section 14-6.03A Species Protection and/or Section 14-6.03(B) Bird Protection.

BIO-15: Migratory Birds and Raptors Construction Monitoring: If construction or other project-related activities that may potentially cause nest destruction, nest abandonment, or forced fledging of migratory birds are necessary, monitoring of the nest site by a designated biologist would be required to ensure that protective radii and any exclusionary devices are maintained and functioning properly.

BIO-16: Bats Exclusionary Devices: If work that would potentially interfere with bat day-roosting sites is proposed or is likely to occur between February 1 and September 30, exclusionary devices may be used to block access to bat day-roosting sites where work would be performed. Exclusionary devices for bats must be installed after September 30 but before February 1 of any construction season and would be maintained and left in place between February 1 and September 30 of any construction season. No bat exclusionary devices shall be used, which would entrap bats within their roosts. Exclusionary devices for bats may be removed when a designated biologist determines that work would not interfere with bat day-roosting sites or until all construction activities in bat day-roosting areas are completed. Exclusionary devices for bats shall be specified under Caltrans' 2018 Standard Specification and/or Standard Special Provisions under Section 14-6.03A Species Protection or may require the use of non-standard special provisions under Section 14 of the Standard Special Provisions.

BIO-17: Bats Pre-Construction Surveys: If woody vegetation removal, structures construction, or other project-related activities in bat day-roosting sites are scheduled between February 1 to September 30, a designated biologist shall conduct a focused survey for day-roosting bats within 15 days before the start of project-related activities. If active day roosts are found, a protective no-work buffer of 50 feet would be established, and Caltrans shall consult with the California Department of Fish and Wildlife to comply with provisions of the California Fish and Game Code. If a lapse in project-related work of 15 days or longer occurs, another survey and, if required, consultation with the California Department of Fish and Wildlife would be required before the work start again. Pre-construction surveys for roosting bats shall be specified under Caltrans' 2018 Standard Specification and/or Standard Special Provision Section 14-6.03A Species Protection.

BIO-18: Bats Protective Buffers: If a designated biologist detects day-roosting bats during the pre-construction survey, a 50-foot no-work buffer would be established around the roost. No work would start within the buffer until authorization is received from the resident engineer.

BIO-19: Bats Construction Monitoring: If construction or other project-related activities that may potentially result in adverse effects to bats or bat day-roost sites, monitoring of the day-roost site by a designated biologist would be required to ensure that protective radii and any exclusionary devices are maintained and functioning properly.

BIO-20: Compensatory Mitigation: Compensatory conservation measures intended to reduce the extent of incidental take due to the loss of Federal Endangered Species Act-listed green sturgeon and Central Valley steelhead and Federal Endangered Species Act-experimental population Central Valley Spring-Run Chinook Salmon habitat or for potential adverse effects to critical habitat Primary Constituent Elements would require approval from the National Marine Fisheries Service. The following compensatory conservation measures are proposed:

The analysis assumes that mature trees occurring within the project's environmental study limits next to the banks of the Stockton Deep Water Channel would be removed to facilitate contractor access and construction activities (0.62 acre) under Alternative 3.

To compensate for the loss of 0.62 acre of streamside canopy coverage, Caltrans would:

- Replant streamside trees onsite at about the same density and in about the same locations as existing trees. A replanting plan would be submitted to the National Marine Fisheries Service and California Department of Fish and Wildlife for review and approval before or concurrent with the start of project construction activities.
- Acquire 0.62-acre credits (1 to 1 ratio) of "riparian," "shaded riverine," or equivalent habitat from a National Marine Fisheries Service-approved and California Department of Fish and Wildlife-approved Conservation Bank. Conservation Bank Credits would be acquired before or concurrent with the start of project construction activities.

To compensate for the increase of 0.34 acre of artificial shade, Caltrans would:

- Acquire 0.34-acre credits (1 to 1 ratio) of "Salmonid Restoration," "Salmonid," "Green Sturgeon," or equivalent habitat from a National Marine Fisheries Service-approved Conservation Bank. Conservation Bank Credits would be acquired before or concurrent with the start of project construction activities.

Compensation credits for riparian habitat, shaded riverine habitat, salmonids, and green sturgeon may be available at the North Delta Fish Conservation Bank and/or the Liberty Island Conservation Bank; each of these conservation banks is approved by the National Marine Fisheries Service and the California Department of Fish and Wildlife.

To compensate for the permanent loss of 0.15 acre of streambed and water column habitat, Caltrans would:

- Acquire "in-lieu fee" compensatory mitigation in the "Calaveras-Stanislaus Aquatic Resources Service Area" through the National Fish and Wildlife Foundation's program for the loss of jurisdictional waters of the U.S. according to expected permitting requirements of U.S. Army Corps of Engineers and Central Valley Regional Water Quality Control Board under Sections 404 and 401 of the Clean Water Act.

BIO-21: Swainson's Hawk Remove Nesting Habitat During Non-Nesting Season: Performing woody vegetation removal or other construction activities within nesting bird habitat (structures work) during the non-nesting season (between October 1 and January 31) would not require pre-construction surveys or monitoring for Swainson's hawk.

BIO-22: Swainson's Hawk Pre-Construction Surveys During Nesting Season: A designated biologist shall perform pre-construction Swainson's hawk surveys according to the protocol outlined in the May 2000 "Swainson's Hawk Technical Advisory Committee's Recommended Timing and Methodology for Swainson's Hawk Surveys in California's Central Valley" within the project's environmental study limits and all accessible areas within about 0.5 mile of the project's environmental study limits. Pre-construction season surveys would assist with project planning, the development of avoidance, minimization, and mitigation measures, and identify potential impacts that can then be used for issuance of an Incidental Take Permit. Pre-construction surveys for nesting Swainson's hawks shall be specified under Caltrans' 2018 Standard Specification and/or Standard Special Provision under Section 14-6.03A Species Protection and/or Section 14-6.03(B) Bird Protection.

BIO-23: Swainson's Hawk Protective Buffers: If a Swainson's hawk nest is detected inside of, or within about 0.5 mile of the project's environmental study limits during nesting bird surveys conducted during any active construction season, the contractor would notify the Caltrans resident engineer and no new disturbances or other project-related activities that may cause nest abandonment or forced fledging shall be initiated within about 600 feet of an active Swainson's hawk nest. Protective buffer radii for nesting Swainson's hawk shall be specified under Caltrans' 2018 Standard Specification and/or Standard Special Provision Section 14-6.03A Species Protection and/or Section 14-6.03(B) Bird Protection. A 600-foot protective buffer shall be maintained around any active Swainson's hawk nest until

Caltrans consults with the California Department of Fish and Wildlife for further guidance. Consultation with the California Department of Fish and Wildlife has the potential to result in a protective buffer of up to 0.5 mile.

New sightings of nesting Swainson's hawks shall be reported to the California Natural Diversity Database.

BIO-24: Swainson's Hawk Construction Monitoring: If construction or other project-related activities that may cause nest abandonment or forced fledging of Swainson's hawks are necessary within the buffer zone, monitoring of the nest site by a designated biologist (to determine if the nest is abandoned) shall be required. If the nest is abandoned and if the nestlings are still alive, the project sponsor shall fund the recovery and hacking (controlled release of captive-reared young) of the nestling(s). Routine disturbances such as agricultural activities, commuter traffic, and routine facility maintenance activities within 0.5 mile of an active nest would not be prohibited. If a nest tree must be removed, authorization from the California Department of Fish and Wildlife (including conditions to offset the loss of the nest tree) must be obtained.

BIO-25: Weed-Free Construction Equipment and Vehicles: To minimize the potential for the transport of weed propagules to the Action Area from sources outside of the project area, construction equipment and vehicles are recommended to be cleaned and washed at the contractor's facilities before arriving at the construction site. Any vehicle or equipment cleaning that occurs onsite during construction activities shall conform with Caltrans' 2018 Standard Specifications or any Standard Special Provisions under Section 13-4.03E(3) and Section NS-08 Vehicle and Equipment Cleaning of the Caltrans' 2017 Construction Site Best Management Practices Manual, which require the contractor to contain and dispose of any waste resulting from vehicle or equipment cleaning.

BIO-26: Equipment and Materials Storage, Staging, and Use in Weed-Free Areas: To minimize the potential for spreading weed propagules that originate from within the project's environmental study limits, staging and storage of equipment should only be done in weed-free areas. Infestations of noxious and/or highly invasive weeds (California Invasive Plant Council "high" invasiveness and California Department of Food and Agriculture "A-rated" or "B-rated" noxious weeds) were mapped as part of the project planning effort to determine if hand, mechanical, or chemical eradication treatments are feasible, or if it is feasible to designate these areas as excluded from contractor's use. Environmentally sensitive area provisions Section 14-1.02 of Caltrans' 2018 Standard Specifications or Standard Special Provisions may be used to specify areas restricted from contractor's use. It is recommended that a qualified biologist conduct pre-construction surveys to determine the extent of infestations of California Invasive Plant Council "high" invasiveness weeds and California Department of Food and Agriculture "A-rated" or "B-

rated" noxious weeds and to provide feasible recommendations for weed control or weed exclusion strategies before the start of construction activities.

BIO-27: Weed Control During Construction: To minimize the potential for spreading weed propagules originating from within the project's environmental study limits throughout construction activities, including initial vegetation clearing and at onsite revegetation areas, weed control would be accomplished in accordance with Caltrans' 2018 Standard Specifications or Standard Special Provisions under Section 20-1.03C(3). The use of herbicides for weed control activities would be discouraged but may be considered on a case-by-case basis depending upon the weed species, the extent of the infestation, or any regulatory restrictions.

BIO-28: Weed-Free Erosion Control and Revegetation Treatments: To minimize the risk of introducing weed propagules to the Action Area from sources outside of the project area, only locally adapted plant species appropriate for the project area would be used in any erosion control or revegetation seed mix or stock. A Caltrans biologist would consult with the Caltrans Landscape Architect to develop appropriate seed and planting palettes for use in revegetation and/or erosion control applications. Any compost, mulch, tackifier, fiber, straw, duff, topsoil, erosion control products, or seed must meet Caltrans' 2018 Standard Specification or any Standard Special Provisions under Section 21-2.02 for these materials. Any hydroseed used for revegetation activities must also be certified weed-free as per Caltrans' 2018 Standard Specifications Section 21-2.02F.

BIO-29: Pest-Free Construction Equipment and Vehicles: To minimize the potential for the transport of invasive aquatic animal species to the Action Area from sources outside of the project area, construction equipment and vehicles are recommended to be cleaned and washed at the contractor's facilities before arriving at the construction site. Any equipment or vehicles, including barges and associated ballast tanks, used in the water would be visually inspected for signs of New Zealand Mudsnail, Chinese mitten crabs, or Mississippi silversides. These organisms would be removed, and all water, including ballast water, would be drained from vehicles and equipment and disposed of before entering the Stockton Deep Water Channel. Any vehicle or equipment cleaning that occurs onsite during construction activities shall conform with Caltrans' 2018 Standard Specifications or any Standard Special Provisions under Section 13-4.03E (3) and NS-08 (Vehicle and Equipment Cleaning) of the Caltrans 2017 Construction Site Best Management Practices Manual, which require the contractor to contain and dispose of any waste resulting from vehicle or equipment cleaning.

Cultural Resources

- ESA-1: Environmentally Sensitive Area Designation.

- CULT-1: The Caltrans Standard Special Provision Section 14-1.02A would be required to cover the boundary of the archaeological resource, given the archaeological resource temporary ID Number 2567-1, which would prevent the contractor from disturbing the sites during construction.
- CULT-2: The Caltrans Standard Special Provision Section 14-1.03B Archaeological Monitoring Area would be included in the contract. An archaeologist and Native American monitor would be onsite during construction to ensure the integrity of the environmentally sensitive areas and see any unexpected discoveries that might become exposed through construction activities.

Paleontological Resources

- PALEO-1: A project-specific Paleontological Mitigation Plan would be prepared by a qualified principal paleontologist (Master of Science or Doctorate in paleontology) once adequate project design information regarding subsurface disturbance location, depth, and lateral extent is available.

List of Technical Studies

Air Quality Report

Water Quality Report

Biological Reports

Natural Environment Study

Climate Change Analysis Memorandum

Cultural Reports

Historical Property Survey Report

- Archaeological Survey Report

Hazardous Waste Reports

- Initial Site Assessment

Location Hydraulic Study

Noise Study Report

Paleontological Identification Report

Scenic Resource Evaluation/Visual Assessment

Seismic Design Recommendation Report

Section 4(f) Analysis

Traffic Operations Analysis

Community Impact Assessment Memorandum

Cumulative Impact Assessment Memorandum

To obtain a copy of one or more of these technical studies/reports or the Initial Study/Environmental Assessment, please send your request to the following email address: district10publicaffairs@dot.ca.gov

Please indicate the project name (Stockton Channel Viaduct Bridge Improvements) and project identifying code (10-0X460) and specify the technical report or document you would like a copy of. Provide your name and email address or U.S. postal service mailing address (street address, city, state and zip code).