American River Bridge Deck Replacement

Sacramento County
03-SAC-51
PM 2.0-3.5
EA: 03-3F070 / EFIS: 0312000054

Initial Study with Proposed Mitigated Negative Declaration

Prepared by the
State of California, Department of Transportation

October 2020

General Information about This Document

What's in this document:
The California Department of Transportation (Caltrans) has prepared this Initial Study (IS), which examines the potential environmental impacts of the proposed project. Caltrans is the lead agency under the California Environmental Quality Act (CEQA). This document tells you why the project is being proposed, how the existing environment could be affected by the project, the potential impacts of the project, and proposed avoidance, minimization, and/or mitigation measures.

What you should do:
- Please read this document
- This document has been provided online at the following website: https://dot.ca.gov/caltrans-near-me/district-3/d3-programs/d3-environmental/d3-environmental-docs
- We'd like to hear what you think. If you have any comments about the proposed project, please send your comments to Caltrans by the deadline of November 18, 2020
- Send comments via email to: SR51.American.River.Bridge@dot.ca.gov
- Caltrans is committed to the safety and well-being of our community members, employees, and their families. Considering the developments regarding COVID-19 and Governor Newsom's guidance regarding public gatherings, we are postponing open house events intended for community members to view displays, review and comment on environmental documents, and speak with Caltrans staff members in-person about the project. To keep the public informed, we will produce a video presentation about the project. Community members can submit comments and questions via email or telephone. The video will be posted on the Caltrans District 3 YouTube channel at: https://bit.ly/2wX4RfI

What happens next:
After comments are received from the public and reviewing agencies, Caltrans may: (1) environmentally approve the proposed project; (2) do additional environmental studies; or (3) abandon the project. If the project is given environmental approval and funding is obtained, Caltrans could design and construct all or part of the project.

Alternative Formats:
For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Deanna Shoopman, 703 B Street, Marysville, CA 95901, 530-741-4572, or use the California Relay Service TTY number, 1 (800) 735-2929.

SCH No: TBD
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INITIAL STUDY with Proposed Mitigated Negative Declaration

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

THE STATE OF CALIFORNIA
Department of Transportation

10/12/20
Date of Approval

Mike Bartlett, Office Chief
North Region Environmental Management (South)
California Department of Transportation

SCH No: TBD

PROPOSED MITIGATED NEGATIVE DECLARATION

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to rehabilitate the American River Bridge along State Route (SR) 51 in Sacramento County from post mile 2.0 to 3.5. The project would remove and replace the existing concrete deck, remove and replace the steel girder post-tensioning systems in spans 1 and 2, modify existing soundwall, install sheet piling around piers for scour mitigation, construct concrete catcher blocks, and widen the bridge to accommodate traffic during construction, add a Class I bike/pedestrian path, and plan for future transportation needs on SR 51.

Determination

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

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

The proposed project would have no effect on aesthetics, agriculture and forest resources, energy, geology and soils, mineral resources, population and housing, public services, tribal cultural resources, and wildfire.

In addition, the proposed project would have less than significant effects to air quality, cultural resources, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, recreation, utilities and service systems, and transportation.

With the following mitigation measures incorporated, the project would have less than significant effects to biological resources:

Natural Communities

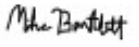
- The permanent loss of 5.21 acres of riparian habitat will be mitigated through a cooperative agreement with the Sacramento Water Forum in which Caltrans will fund the ongoing Salmonid Habitat Restoration Project being conducted by the Water Forum. If this is infeasible, Caltrans will pursue purchasing mitigation credits at an approved mitigation bank.

Wetlands and Other Waters

- The permanent loss of 0.33 acres of jurisdictional waters of the United States and 0.13 acres of jurisdictional wetlands will be mitigated by the purchase of credits at an approved mitigation bank or through “in-lieu-fee” mitigation. Temporary impacts of 0.59 acres of jurisdictional waters of the United States and 0.26 acres of jurisdictional wetlands will be mitigated through “in-lieu-fee” mitigation.

Threatened and Endangered Species

- Impacts to Valley Elderberry Longhorn Beetle will be mitigated by the purchase of credits at a United States Fish and Wildlife Service approved mitigation bank.
- Impacts to Central Valley steelhead, Central Valley spring-run Chinook salmon, Central Valley winter-run Chinook salmon, and green sturgeon habitat will be mitigated through a cooperative agreement with the Sacramento Water Forum in which Caltrans will fund the ongoing Salmonid Habitat Restoration Project being conducted by the Water Forum. If this is infeasible, Caltrans will pursue purchasing mitigation credits at an approved mitigation bank.



10/12/20

Mike Bartlett, (Acting) Office Chief
North Region Environmental Management (South)
California Department of Transportation

Date

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Section 1 Proposed Project

Project Title

American River Bridge Deck Replacement

Lead Agency Name and Address

California Department of Transportation (Caltrans)
703 B Street
Marysville, CA 95901

Contact Person and Phone Number

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Environmental Management M5 Branch
Phone: 530-741-4404
Email: sandeep.sandhu@dot.ca.gov

Project Location/History

The project is located on State Route (SR) 51 in Sacramento County from post mile (PM) 2.0 to 3.5. The American River Bridge (Bridge #24-0003) is a multi-span bridge built in 1954 with two lanes in each direction. In 1966, an additional lane was added in each direction in the median with a closure pour. The state route was formerly known as Interstate (I) 80 and was changed to SR 51 in the mid-1970's. The American River Bridge was seismically retrofitted in 1977 at various locations and in 1988, when span 1 and 2 girders were strengthened with pre-stressing.

The American River Bridge Deck is covered with a thin asphalt concrete overlay that has worn off. The latest Caltrans Bridge Needs Report for the American River Bridge states that the bridge deck has cracks/spalls and needs major deck rehabilitation to help preserve the deck and provide a better wearing surface. Caltrans Structure Maintenance and Investigations recommends replacing the bridge deck to address the needs of the bridge deck rehabilitation.

The project is programmed in the Sacramento Area Council of Governments (SACOG) Metropolitan Transportation Implementation Plan (MTIP, 2019-2020). There is another proposed project (Caltrans EA 03-0H931, SR 51 Corridor Improvements) which would widen SR 51 and American River Bridge to accommodate three mixed flow lanes, one bus/carpool lane, and one auxiliary lane in each direction. This would occur from E Street to El Camino Avenue (PM 1.0 to 4.4). However, the SR 51 Corridor Improvements Project is currently not fully funded and therefore, this environmental document discusses only the American River Bridge Deck Replacement. If the funding for the SR 51 corridor is secured, additional environmental studies will be conducted, and a separate environmental document will be prepared.

Purpose and Need

The purpose of the project is to replace the deck on the American River Bridge on SR 51 in Sacramento County, prevent scour, and provide a multimodal connection between downtown and eastern Sacramento and plan for future transportation needs. The proposed work will repair, protect, and extend the service life of the deck, install sheet piles around piers, and add a Class 1 bike path on the American River Bridge.

The project is needed due to the severity of the transverse and longitudinal deck cracks, concrete spalling, and high corrosive chloride content in the concrete deck surface. The bridge deck will continue to deteriorate and result in the need of emergency repairs if work is not done. The project will provide a multimodal connection to medical centers, employment opportunities, and activity hubs of downtown and eastern Sacramento.

Project Description

Caltrans proposes to rehabilitate the American River Bridge along SR 51 in Sacramento County from post mile 2.0 to 3.5. The project would remove and replace the existing concrete deck, remove and replace the steel girder post-tensioning systems in spans 1 and 2, modify existing soundwall, install sheet piling around piers for scour mitigation, construct concrete catcher blocks, widen the bridge to accommodate traffic during construction, add a Class I bike/pedestrian path, and plan for future transportation needs on SR 51

Project Alternatives:

Alternative 1:

The project scope for Alternative 1 includes the following elements:

- Remove and replace the existing concrete bridge deck (Bridge number 24-0003), with a 1¼" thicker deck than existing.
- Widen the American River Bridge (Br. No. 24-0003) to maintain 3 lanes of traffic in each direction during construction.
- Provide a 14' bike/pedestrian path on the northbound side of the bridge separated from the traffic by a concrete barrier.
- Widen the substructure and superstructure by 54'-11"± on the northbound side of the structure.
- Widen the approaches of SR 51 to accommodate the widening of the American River Bridge.
- Modification of an existing soundwall on the southeast side of the American River bridge.
- Construct 30' approach slabs.
- Strengthen existing girders
- Lengthen a box culvert to the East, North of the American River Bridge
- Widen bridge abutments, footings, bents, and piers supported by piles.
- Install permanent sheet piles at piers 4-6 for scour mitigation.
- Construct temporary construction access trestles and cofferdams to facilitate construction on in-water piers.

- Install lighting on the proposed bike/pedestrian path.
- Create a temporary construction access road across a wetland area or/and use existing dirt road to access the construction site
- Construct median barrier (Type 60) and bridge barrier (Type 842).
- Replace steel girder post-tensioning system at spans 1 & 2.
- Construct concrete catcher blocks underneath existing girders.
- Install new joint seals.
- Near abutment 1, construct a retaining wall and soundwall from the modified soundwall along the Northbound side of the highway, near the Southeast quadrant of the American River Bridge and extend the retaining wall down the bike/pedestrian path.
- Remove vegetation and trees to accommodate widening of SR 51 (CapCity) for bridge deck construction staging.
- Widen Cal Expo Undercrossing (Br. No. 24-0133) on the Northbound side
- Modify the Exposition Boulevard Off-ramp in the Northbound direction

Alternative 2:

In addition to the project scope common to Alternative 1, this alternative varies for the following elements:

- Widen the substructure to the ultimate width by 38' -11"± on the southbound side and 54'-11"± on the Northbound side of the bridge to accommodate the future widening of SR 51.
- Alternatives 2 is contingent on obtaining additional construction capital funding (Non-SHOPP) prior to RTL.

Alternative 3:

In addition to the project scope common to Alternative 1, this alternative varies for the following elements:

- Widen superstructure and substructure by 38' -11"± on the southbound side and 54'-11"± on the Northbound side of the bridge to accommodate the future widening of SR 51.
- Requires no girder strengthening
- Alternative 3 is contingent on obtaining additional construction capital funding (Non-SHOPP) prior to RTL.
- Re-align the portion of the American River bicycle trail, which runs below and parallel to the bridge to be further from the edge of deck.

Alternatives Considered but Eliminated from Further Discussion

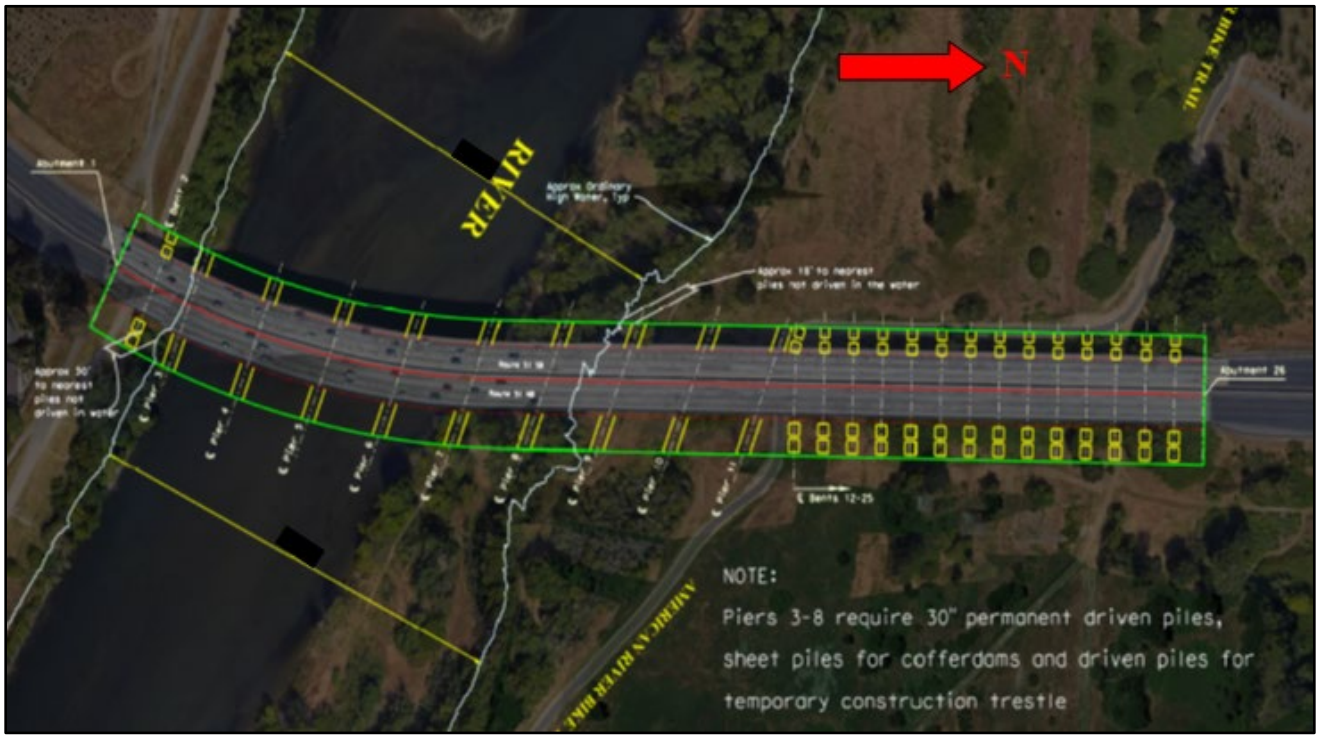
Alternative 4 - No Build:

The No Build alternative will not address the purpose and need of this project, to replace the bridge deck. Not completing the proposed work will accelerate deterioration and reduce the life span of the bridge. This will lead to an increase in future maintenance costs and ultimately result in the need for a complete deck and bridge replacement at higher cost.

Construction Sequence of Project

In-water piers 3-8 sit within the American River Bridge (SR 51). Bent 2 and Abutment 1 are south of the American River, and Piers 9-11 as well as Bents 12-25 and Abutment 26 are north of the American River, and all are on dry land. Refer to Figure 1 showing all piers locations from overhead.

Figure 1: Piers Locations

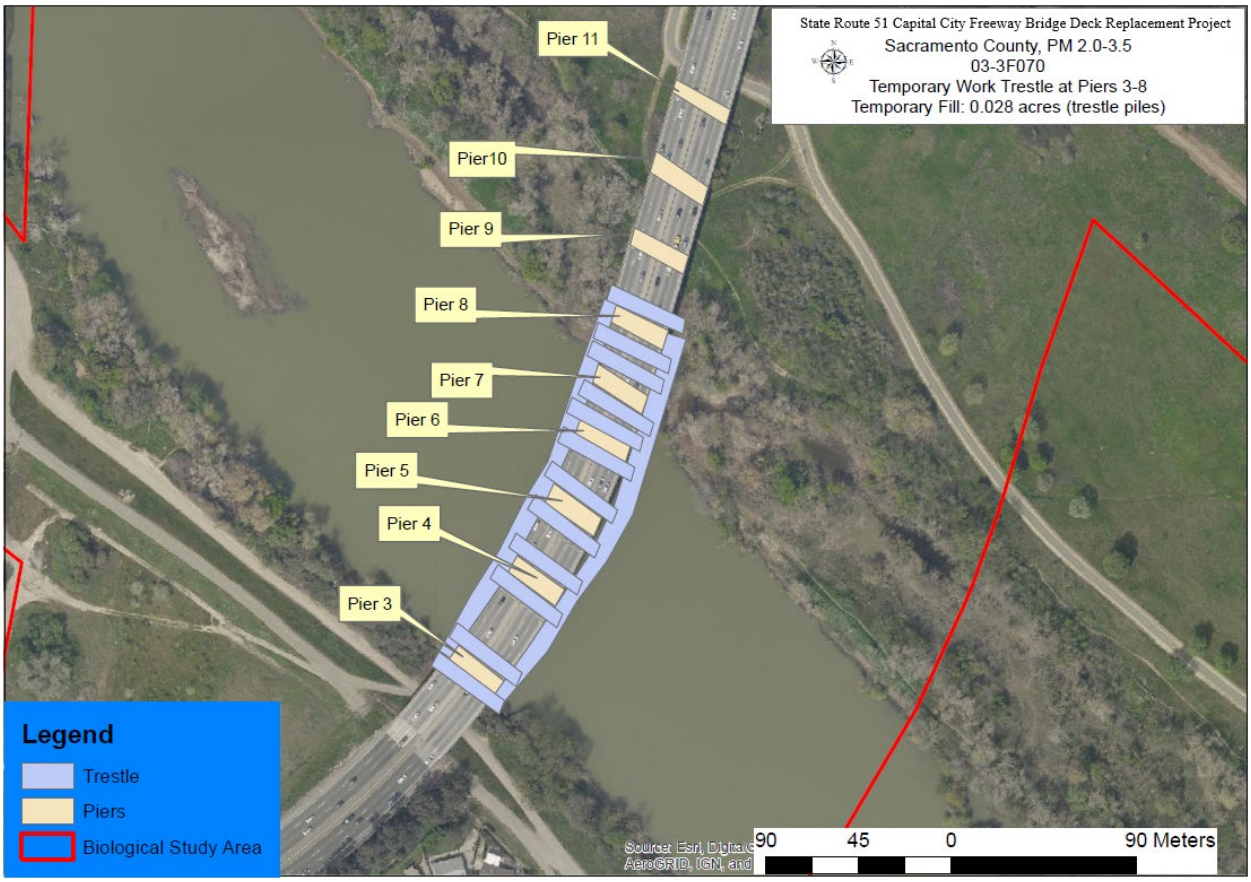


In-Water Piers 3-8 Construction Activities:

The new substructure of the bridge will be built to accommodate the proposed widening of any future Caltrans' projects. Caltrans' goal is to minimize environmental impacts and not have additional work to complete in the river if there are future Caltrans' projects within the project area. Permanent and temporary piles will be required for the foundations. Cofferdams will be required to construct the in-water substructure. Retrofitting will be done by placing a total of 450 supportive 30" diameter steel shell piles filled with concrete and rebar.

Trestle: One linear temporary work trestle would be constructed in segments, from piers 3-8, and would run along the bridge on either side, and in between each pier, as shown in Figure 2, granting access to in-water piers. It is estimated that the trestle would have a total combined length of 3,200' with a total of 700 18" steel pipe piles to support the trestle.

Figure 2: Temporary Trestle



An impact hammer will drive the trestle piles. The trestle piles will likely require 400 blows/pile, totaling 800 blows per day (assuming two trestle piles driven per day). The final design for the temporary trestle will be determined by the contractor at the time of construction; the contractor may choose to use H-piles for the trestle instead of the steel pipe piles.

Cofferdam: Once the trestles are built, the cofferdams can be constructed. The cofferdams used to isolate the pile footings will measure 22' by 186'. The 20" sheet piles of the cofferdam will be driven using vibratory hammers. A total of 1,650 temporary sheet piles will be driven for cofferdam installation (275 piles per pier). There are 6 cofferdams to be installed.

Steel Piles: Upon completion of constructing the cofferdam, 450 supportive 30" diameter steel support piles will be driven 3' from the existing pier inside the coffer dam. Due to the silty substrate of the riverbed, the cofferdam cannot be dewatered until the seal course is placed. Therefore, the cofferdam will be flooded during the pile driving of the 30" piles.

The piles driven in the river will be driven to in-water depths that range from 5' to 17'. Steel piles will be driven using an impact hammer.

Each steel pile will require 900 pile strikes to install. Nine piles will be driven per day for a total of 8,100 strikes per day. 85 days of pile driving will occur per season over four seasons, for a total of 340 driving days (assuming 8-hour workdays, and a 12-hour resting period between driving events per National Marine Fisheries Service (NMFS) guidelines).

Pile driving may occur at up to nine piles per day. Approximately 85' of each steel pipe pile will be driven below the riverbed and each pile will have approximately 90' of exposed pile above the riverbed. All impact pile driving of the 30" steel piles at piers 3-8 will be performed behind an aquatic sound attenuation device that reduces transmission of sound through the water. No attenuation is proposed for the land piers 9 - 11.

Seal Course: To facilitate bridge deck widening, near the top of the steel pipe piles a concrete seal course (a larger reinforced concrete footing) will be constructed. The seal course will be approximately 36' by 20' by 6' deep on the left side and 50' by 20' by 6' deep on the right side. After placing the seal course, the cofferdam will be dewatered to construct the new pile cap (footing).

Dewatering Basin: Water pumped out of the cofferdam will be placed in one of three possible areas. The options available are:

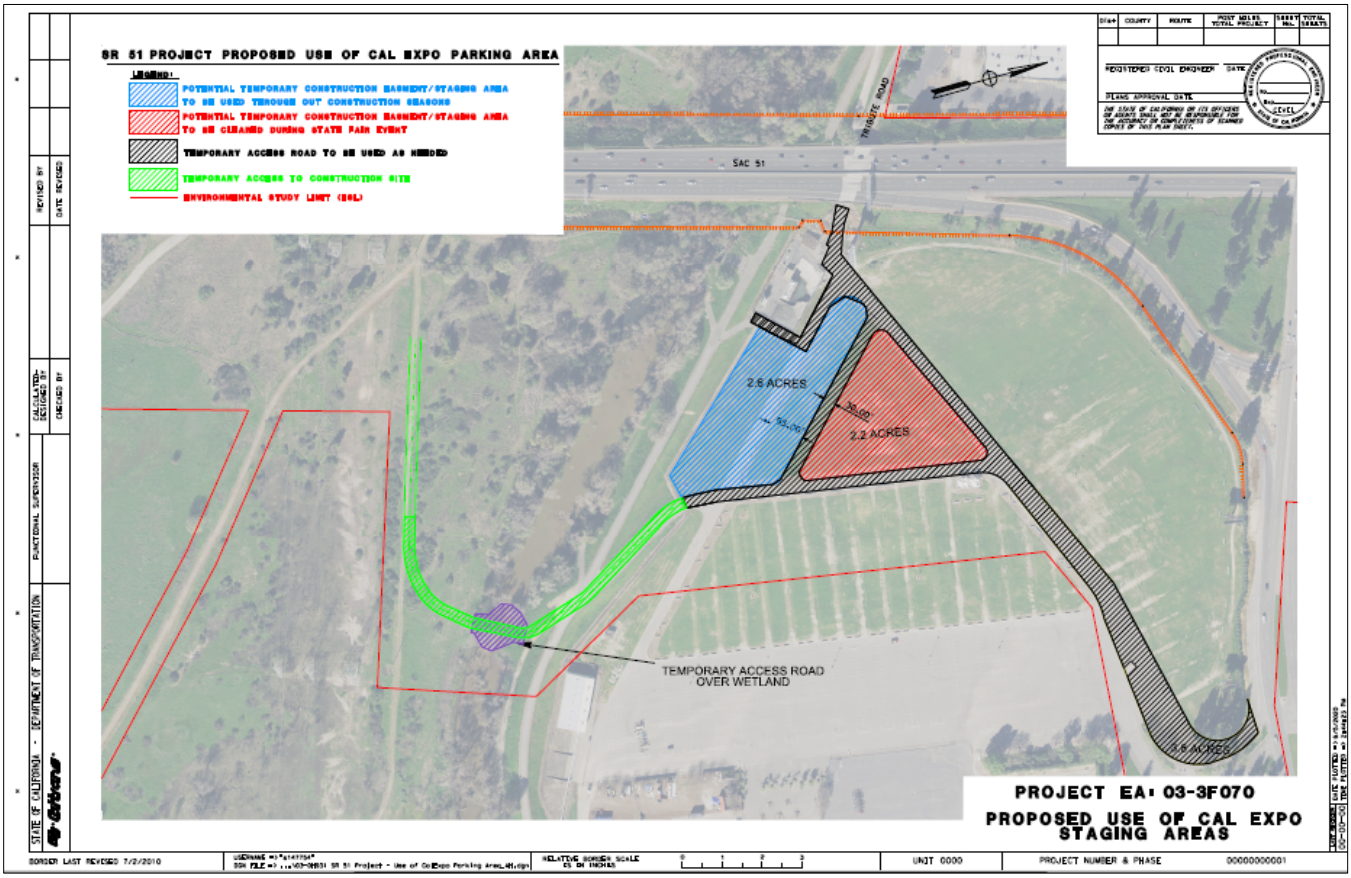
- Discharge water into local pipe network that is typically used for stormwater drainage
- Discharge water into a nearby infiltration basin if there is enough volume to take the moved water
- Store water in temporary holding tanks as needed before discharging the water back into the river

Some of the water in the cofferdam will come in contact with uncured concrete and will have a higher pH. This water will be treated with acid to balance the pH prior to reaching the dewatering basins.

Pile Cap: To facilitate bridge deck widening, once the seal course is constructed and the cofferdam dewatered, the new pile cap will be constructed. The dimensions of the new pile cap will be approximately 36' by 20' by 4' on the left side and 50' by 20' by 4' on the right side. Fill for stabilization of the pile cap foundation will take place under submerged conditions (cannot completely dewater cofferdam).

Staging: The work at SR 51 will utilize a staging area located at the Cal Expo parking area. The staging area occupies 4.8 acres within Cal Expo parking, and will allow for temporary access to the construction site. Temporary access to the American River Bridge will be provided from the Cal Expo parking lot by an access road that will also cross a narrow portion of Bushy Lake. Additional staging areas may be required. These preliminary plans may change as construction nears. Please see Figure 3 below for details of potential staging areas.

Figure 3 Staging Areas



Out-of-Water Piers 9 – 11 and Bents 12 - 25 Construction Activities:

The footings at piers 9-11 and Bents 12-25 would be retrofitted in a similar method described for in-water piers 3-8. Bent 25 is furthest from the river and pier 9 is nearest to the river. Sound levels at these pier locations will be transmitted through groundborne vibration but will be much less than in-water piers 3-8. No aquatic sound attenuation devices are proposed for land Piers 9-11 and Bents 12-25.

Cofferdam: Cofferdams are not proposed for land piers 9 – 11 or Bents 12 – 25.

Steel Piles: Land-based piers will be driven using the same method as in-water piers 3-8, except without cofferdams, as no water is anticipated to be present at these locations. A total of 2,010 supportive steel pipe piles of varying diameters will be driven 3' from the existing pier. All piles around existing piers 9-11 and Bents 12-25 are land based. The steel piles will be driven using an impact hammer. The piles will be driven approximately 200' deep. Table 1 below depicts the details of the land-based pile driving.

Table 1: Land-based Piles

Pile Size (inches)	Number of Piles
36	220
30	1,580
24	40
14	170

Seal Course: To facilitate bridge deck widening, near the top of the steel pipe piles a concrete seal course (a larger reinforced concrete footing) will be constructed. The seal course will be approximately 36' by 20' by 6' deep on the left side and 50' by 20' by 6' deep on the right side.

Pile Cap: The concrete pile cap sits on top of the seal course. The concrete pile cap will measure approximately 63' by 41.5' by 9'.

Staging: The work at SR 51 will utilize staging areas located at the Cal Expo parking area. Please see Figure 3 above. The staging area occupies 12.7 acres within Cal Expo parking, and will allow for temporary access to the construction site. An access road over the top of the levee will lead to a temporary road consisting of temporary fill, spanning a Freshwater Emergent Wetland. Additional staging areas may be required. These are preliminary plans and may change as construction nears.

Construction Sequencing: Construction activities will likely occur in three seasons. All substructure work will be completed in the first two seasons while the third season would consist of superstructure work. Construction at in-water piers 3-8 will likely be completed in Fall of 2022. The remaining out-of-water piers 9 - 10 and Bents 12 - 25 construction will be completed in Fall of 2023. Work on the bridge deck will be completed in 2024. It will take approximately 700 days to complete construction. In-water work at piers 3-8 will occur from June 1 – October 15, when sensitive fish species are less likely to be present. The construction sequence is an approximation of the construction scenario and the contractor may choose an alternative construction sequence.

General Plan Description, Zoning, and Surrounding Land Uses

Land use near the proposed project is zoned as Floodplain, Recreational, Commercial, and Industrial. The proposed project is within the jurisdiction of the Sacramento Area Council of Governments (SACOG), the regional transportation planning agency. The proposed project is an essential component of the Caltrans District 3 System Management Plan, the Transportation Concept Report for the Sac 51 corridor and the SACOG's Metropolitan Transportation Plan (MTP). Caltrans District 3 System Management plan is the strategic policy and planning document that focuses on system preservation, operating, managing, and developing the transportation system.

Native American Consultation

The Native American Heritage Commission (NAHC) was requested to review the Sacred Lands Files for any Native American sacred site within the or adjacent to the project area. The results indicated there were no sacred sites listed in the project area. A list of Native American groups and individuals that may have knowledge or concerns regarding cultural resources for the project area was also included by the NAHC. Correspondence was sent in April of 2017, followed up by phone calls and/or emails, to the Native Americans who were identified as having an interest in projects within this area by the NAHC.

The NAHC was contacted again in October of 2019 for an update. The Sacred Lands File search was positive, with instruction to contact the Ione Band of Miwok Indians and the United Auburn Indian Community for more information. An update as to the project status was sent out in October of 2019 to all on the 2019 list from the NAHC. Responses were received from the Wilton Rancheria, the Shingle Springs Band of Miwok Indians, Ione band of Miwok Indians, and the United Auburn Indian Community of the Auburn Rancheria. No concerns have been raised at this time. Consultation is on-going.

Permits and Approvals Needed

The proposed project would require these permits and/or approvals:

- Section 404 Nationwide Permit from the United States Army Corps of Engineers.
- Section 401 Water Quality Certification from the Central Valley Regional Water Quality Control Board.
- 1602 Lake and Streambed Alteration Agreement from the California Department of Fish and Wildlife.
- Biological Opinion (BO) from National Marine Fisheries Service (NMFS).
- Biological Opinion (BO) from United States Fish and Wildlife.
- Incidental Take Permit (ITP) from California Department of Fish and Wildlife.

Figure 4: Project Vicinity Map

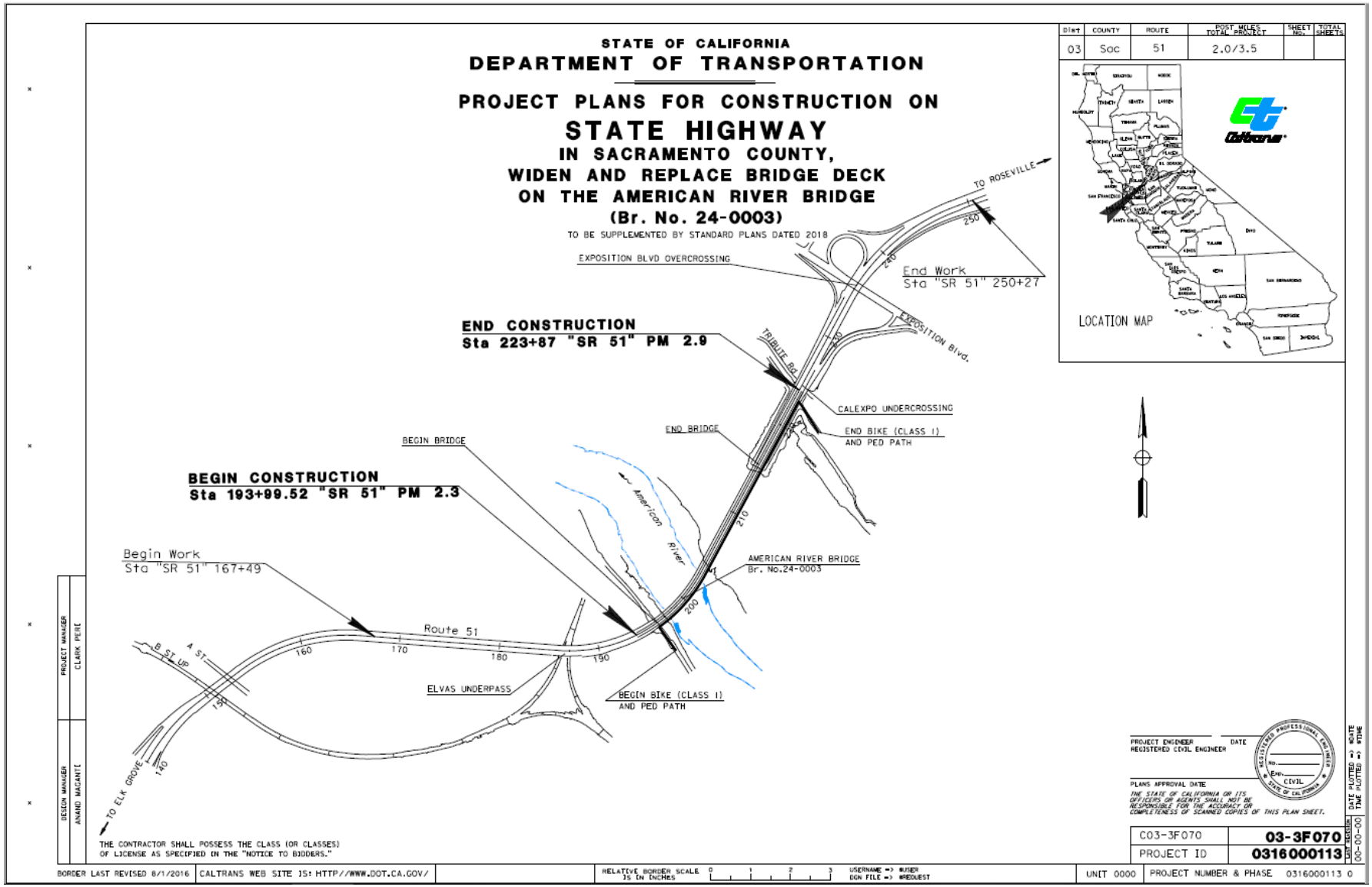


Figure 5: Environmental Study Limits Map

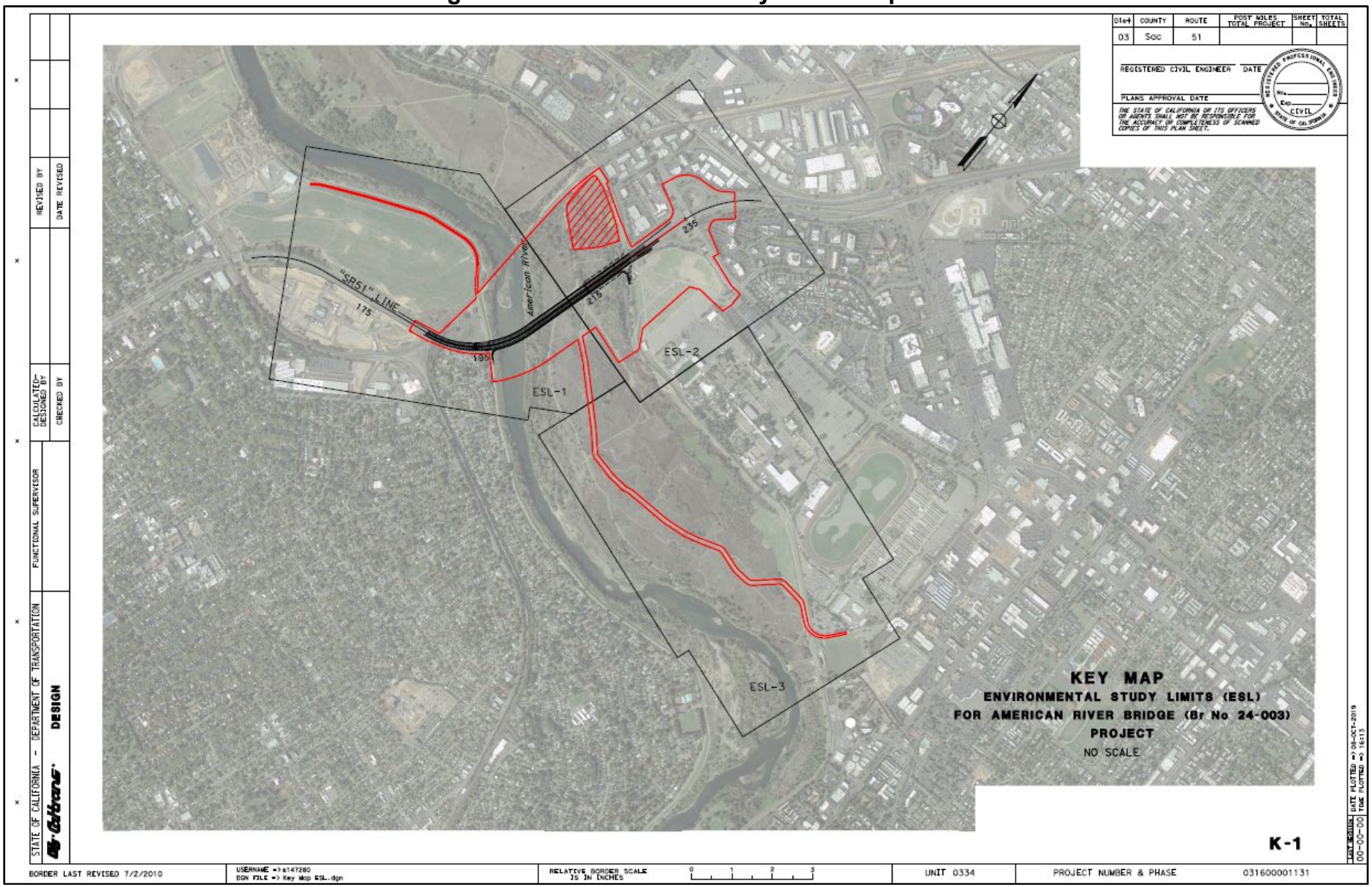


Figure 6: Layout Sheet 1

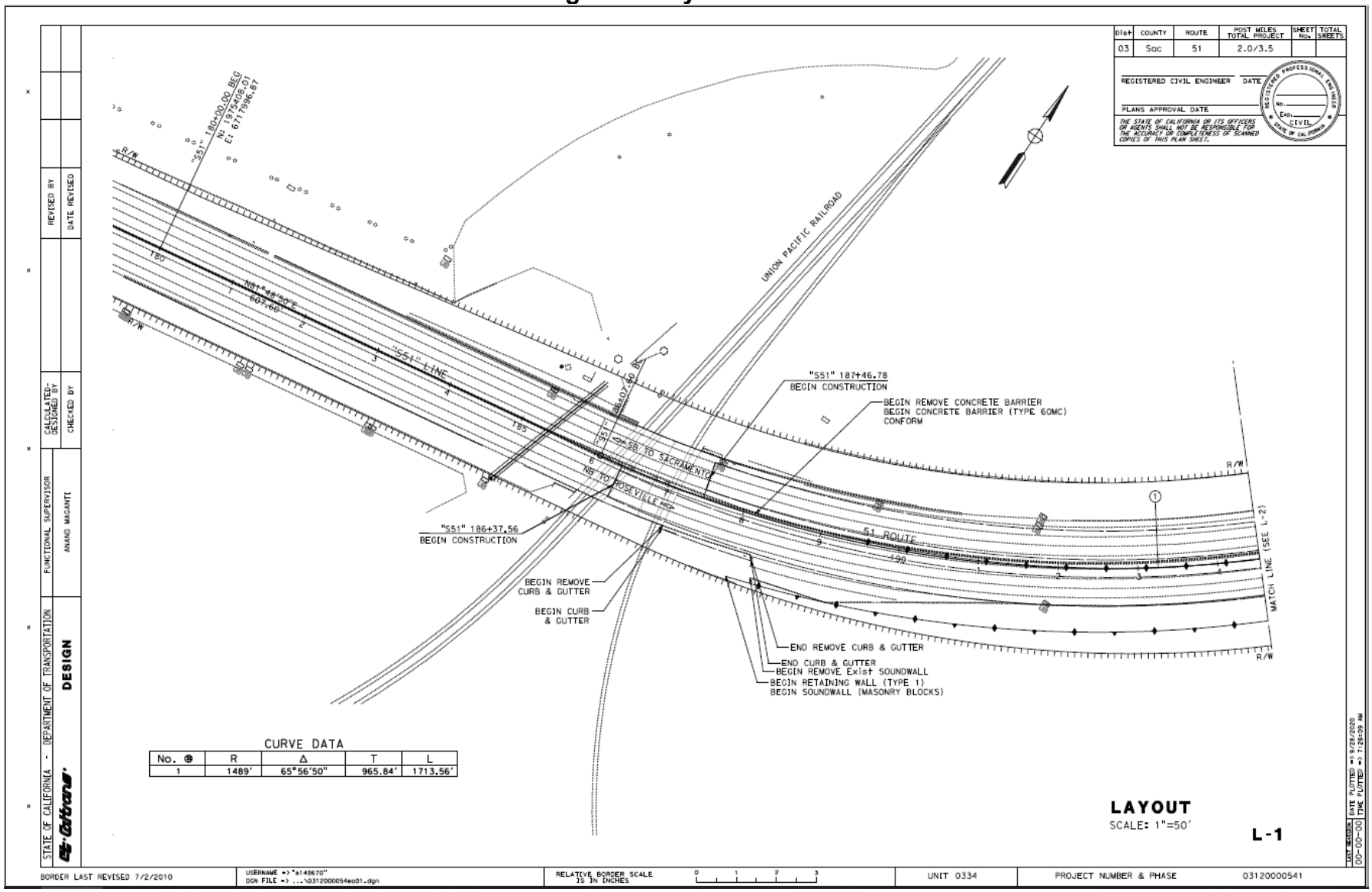


Figure 7: Layout Sheet 2

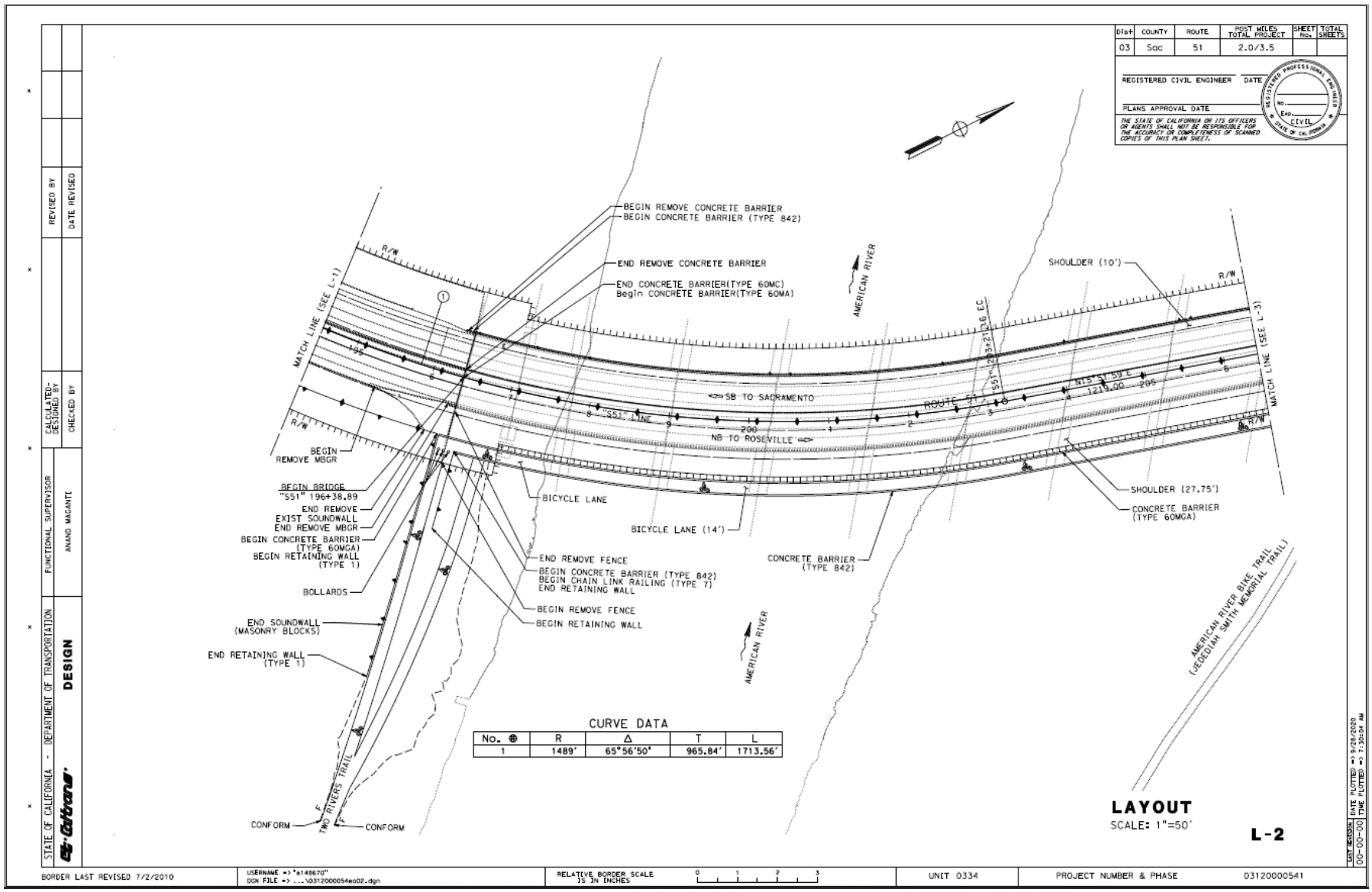


Figure 8: Layout Sheet 3

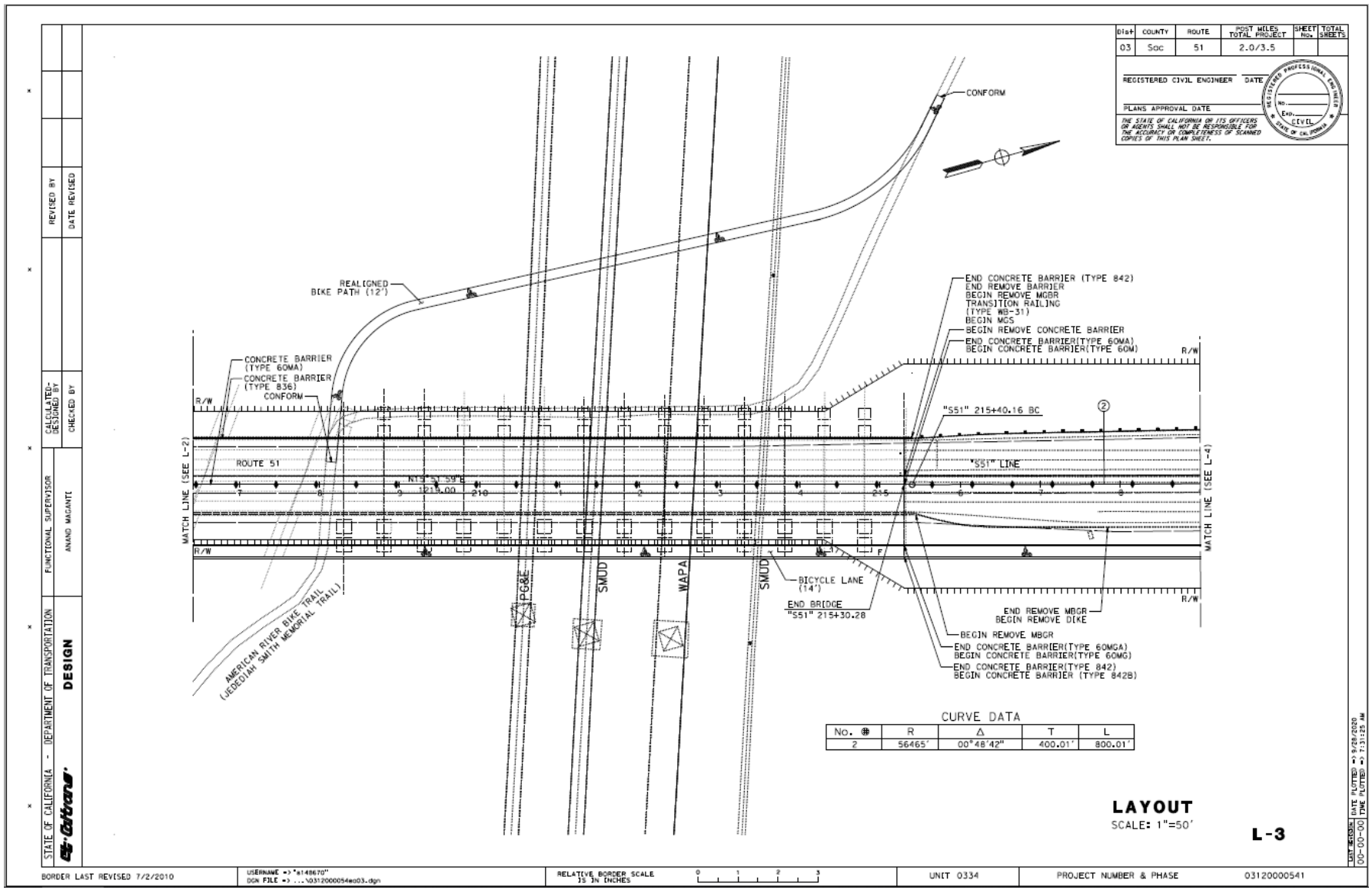


Figure 9: Layout Sheet 4

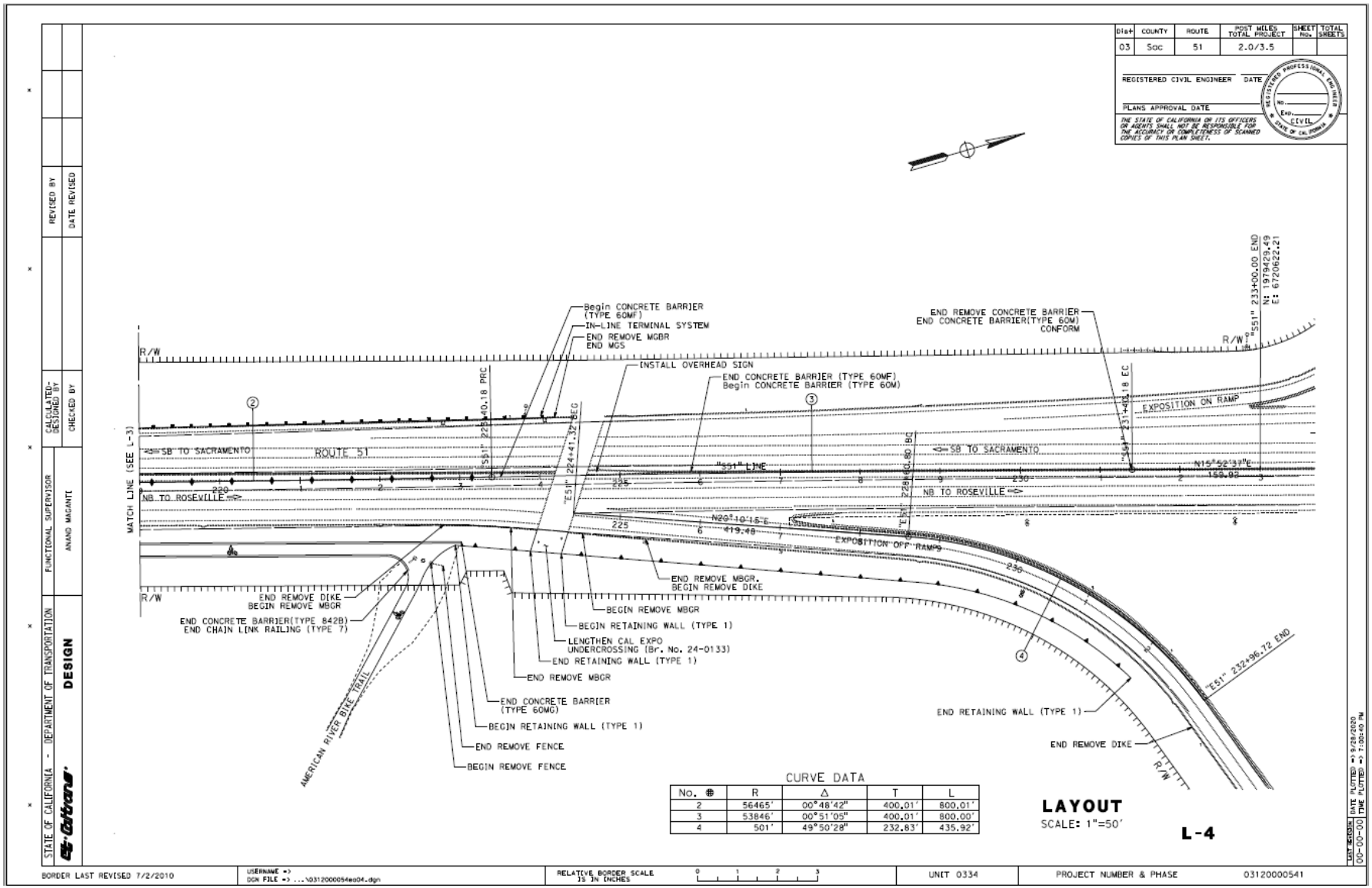


Figure 10: Alternatives Map

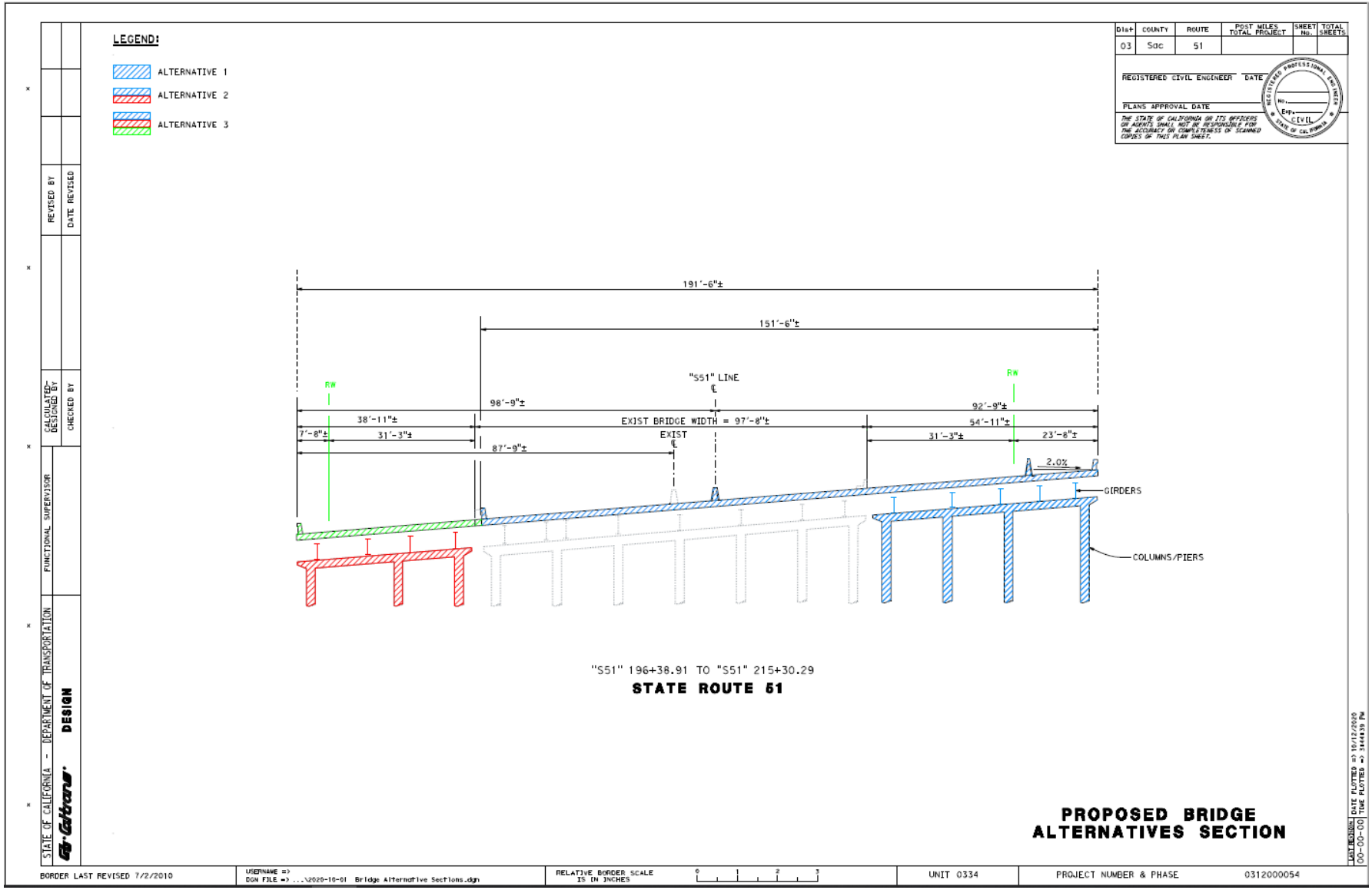
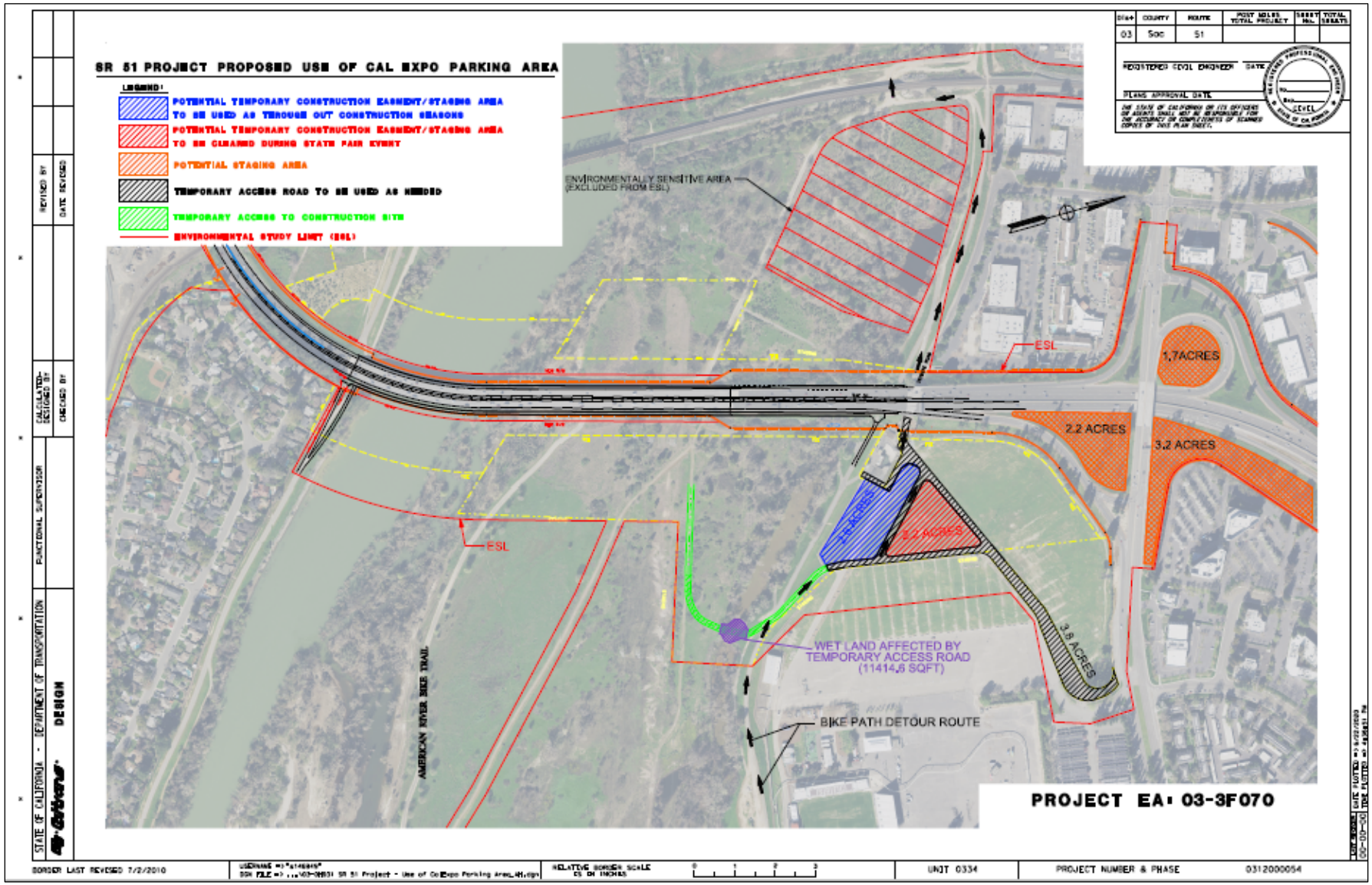


Figure 11: Staging Map



Section 2 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project. See the checklist in Section 3 for additional information.

☐	Aesthetics	☐	Agriculture and Forestry	☒	Air Quality
☒	Biological Resources	☐	Cultural Resources	☐	Geology/Soils
☒	Greenhouse Gas Emissions	☒	Hazards and Hazardous Materials	☒	Hydrology/Water Quality
☒	Land Use/Planning	☐	Mineral Resources	☒	Noise
☐	Population/Housing	☐	Public Services	☒	Recreation
☒	Transportation/Traffic	☐	Tribal Cultural Resources	☒	Utilities/Service Systems
☒	Mandatory Findings of Significance				

Section 3 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 a project will indicate that there are no impacts to a particular resource. A NO IMPACT answer reflects this determination. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this checklist are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

Project features, which can include both design elements of the project, and standardized measures that are applied to all or most Caltrans projects such as Best Management Practices (BMPs) 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 to provide you 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.

AESTHETICS

Except as provided in Public Resources Code Section 21099, would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) 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?	☐	☐	☐	☒

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

Explanation for a-d: "No Impact" determinations in this section are based on information provided in the Visual Impact Assessment (VIA) prepared on April 2, 2020.

Scenic vistas are often panoramic views that have high quality compositional and picturesque value. Scenic vistas are not available within the project limits or vicinity. The proposed project elements will not impact the scenic quality of this location.

The highway corridor is not listed as a state scenic highway. The proposed project elements will not damage scenic resources and will not degrade the existing visual character or quality of the site and its surroundings.

The project proposes to improve and widen the existing American River Bridge and construct elements that will complement the existing environment. As a result, the project will not cause an effect on the visual character of the site and its surroundings.

The proposed project elements will not create a new source of substantial light or glare. Therefore, it is not anticipated to have an impact on day or nighttime views.

AGRICULTURE AND FOREST RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Explanation for a-e: "No Impact" determinations in this section are based on the California Department of Conservation Farmland Maps. No Prime Farmland, Unique Farmland, Farmland of Statewide Importance, Williamson Act Land, timberland, or forest land was identified within the project limits. Therefore, the proposed project would have no impact on farmland, Williamson Act land, timberland, or forest land.

AIR QUALITY

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the 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?	☐	☐	☒	☐
c) 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?	☐	☐	☒	☐

Explanation for a-d: "Less than Significant Impact" determinations in this section are based on information provided in the Air Quality Report prepared on March 26, 2020. The proposed project is located in a nonattainment area for national O_3 and $PM_{2.5}$ standards and a maintenance area for a national PM_{10} standard. The project would not result in changes to roadway capacity or traffic volumes and would not increase operational emissions above existing conditions. Temporary emissions would occur during construction, but the project would comply with Caltrans Standards Specifications Section 10-5 "Dust Control", Section 14-9 "Air Quality", and Section 18 "Dust Palliatives" which include preventing and alleviating dust, and complying with applicable air-pollution control rules, ordinances, and statutes. This project is exempt from all air quality conformity analysis requirements per Table 2 of 40 Code of Federal Regulations (CFR) § 93.126, subsection "Safety". Conformity requirements do not apply.

BIOLOGICAL RESOURCES

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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, U.S. Fish and Wildlife Service, or NOAA Fisheries?	☐	☒	☐	☐
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 US Fish and Wildlife Service?	☐	☒	☐	☐
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?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☒	☐

Explanation for a-c: “Less Than Significant with Mitigation Incorporated” determinations in this section are based on information provided in the Natural Environment Study prepared March 25, 2020. The proposed project would result in the permanent loss of 0.33 acres of jurisdictional waters of the United States and State and 0.13 acres jurisdictional wetlands. These impacts will be mitigated by the purchase of credits at an approved mitigation bank or through “in-lieu-fee” mitigation. Temporary impacts for 0.59 acres of jurisdictional waters of the United States and State and 0.26 acres of jurisdictional wetlands will be mitigated through “in-lieu-fee” mitigation. The permanent loss of 5.21 acres of riparian vegetation will be mitigated through a cooperative agreement with the Sacramento Water Forum in which Caltrans will fund the ongoing Salmonid Habitat Restoration Project being conducted by the Water Forum. If this is infeasible, Caltrans will pursue purchasing mitigation credits at an approved mitigation bank. Impacts to Valley Elderberry Longhorn Beetle (VELB) will be mitigated by the purchase of credits at a United States

Fish and Wildlife Service approved mitigation bank. Impacts to Central Valley steelhead, green sturgeon, Central Valley spring-run Chinook salmon, and Central Valley winter-run Chinook salmon will be mitigated through a cooperative agreement with the Sacramento Water Forum in which Caltrans will fund the ongoing Salmonid Habitat Restoration Project being conducted by the Water Forum. If this is infeasible, Caltrans will pursue purchasing mitigation credits at an approved mitigation bank. With these mitigation measures incorporated, the proposed project would have less than significant impacts to waters of the United States and State, riparian vegetation, VELB, and Central Valley steelhead, green sturgeon, Central Valley spring-run Chinook salmon, and Central Valley winter-run Chinook salmon. Refer to Section 4 - Biological Environment for additional information.

Explanation for d: The "Less than Significant Impact" determination in this section is based on information provided in the Natural Environment Study prepared March 25, 2020. The project features would result in no significant impacts to migratory corridors. Refer to Section 4 – Biological Environmental for additional information.

Explanation for e and f: "No Impact" determinations in this section are based on the information provided in the Natural Environmental Study prepared March 25, 2020. The proposed project would not conflict with any local plans/policies protecting biological resources or any habitat conservation plans.

CULTURAL RESOURCES

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
d) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☐	☒

Explanation for a and b: "Less than Significant Impact" determinations in this section are based on information provided in the Historic Property Survey Report prepared on April 6, 2020.

Two resources exist within the project limits: the First Transcontinental Railroad (P-34-000505/CA-SAC-478H) and the American River Levees (P-34-000508/CA-SAC-481 and P-34-000509/CA-SAC-482). Both resources are assumed eligible for the purposes of this undertaking in accordance with Stipulation VIII.C.4 of the 2014 First Amended Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, As It Pertains to the Administration of the Federal-Aid Highway Program in California (Section 106 PA).

No other properties listed within the National Register of Historic Places, California Historical Landmarks, California Inventory of Historical Resources, California Points of Historical Interest, or California Register or Historical Resources are present within the project APE. The pedestrian archaeological surveys, Extended Phase I (subsurface) testing, and Native American and Historical Society consultation were conducted in 2017, 2018, and 2019, and resulted in no additional cultural resources being identified within the project's APE.

Caltrans has applied the Criteria of Adverse Effect in accordance with Stipulation X.A of the Section 106 PA and 36 CFR Part 800.5(a)(1) and determined that the proposed project would not affect character-defining features of the First Transcontinental Railroad or the American River Levees, resources in the project APE that are assumed eligible for the NRHP for the purposes of this undertaking.

Caltrans, under Stipulation X.A. of the Section 106 PA, has determined a Finding of No Adverse Effect (without conditions) is appropriate for the project and has requested the SHPO's concurrence with this finding under Stipulation X.C.1.

Explanation for c: "No Impact" determinations in this section are based on information provided in the Historic Property Survey Report prepared on April 6, 2020. As a result of pedestrian surveys, Extended Phase I (subsurface) testing, and Native American consultation, no human remains were identified within the project limits.

Energy

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☐	☒
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

Explanation for a and b: "No Impact" determinations in this section are based on information provided in the Energy Analysis prepared March 20, 2020. The proposed project would not increase capacity or provide congestion relief when compared to the no-build alternative. It is unlikely to increase direct energy consumption through increased fuel usage.

The basic procedure for analyzing direct energy consumption from construction activities is to obtain fuel consumption projections in gallons from the CAL-CET2018, version 1.3. CAL-CET outputs fuel consumption based on project-specific construction information.

The proposed project does not include maintenance activities which would result in long-term indirect energy consumption by equipment required to operate and maintain the roadway. Thus, it is unlikely to increase indirect energy consumption through increased fuel usage.

Proposed project construction would primarily consume diesel and gasoline through operation of heavy-duty construction equipment, material deliveries, and debris hauling. The highest energy use associated with proposed project construction is estimated to result in the total short-term consumption of 365,880 gallons from diesel-powered equipment and 230,353 gallons from gasoline-powered equipment. This demand would cease once construction is complete. Moreover, construction-related energy consumption would be temporary and not a permanent new source of energy demand, and demand for fuel would have no noticeable effect on peak or baseline demands for energy. Therefore, the project would not result in an inefficient, wasteful, and unnecessary consumption of energy.

GEOLOGY AND SOILS

	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

Explanation for a-f: “No Impact” determinations in this section are based on California Geological Survey Regulatory Maps as well as conversations with the project engineer and the analysis of the geotechnical studies. No faults, unstable geologic units or soil, or expansive soil was identified within the project limits.

Paleontological resources in Sacramento County occur within the Riverbank Formation which does not occur within the project area.

GREENHOUSE GAS EMISSIONS

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Explanation for a and b: "Less Than Significant" determinations in this section are based on information provided in Section 4 – Climate Change.

While the proposed project will result in greenhouse gas (GHG) emissions during construction, it is anticipated that the project will not result in any increase in operational GHG 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 GHG-reduction measures, the impact would be less than significant.

Caltrans is firmly committed to implementing measures to help reduce GHG emissions. Refer to section 4 - Climate Change for additional information.

HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

Explanation for a and b: "Less Than Significant" determinations in this section are based on information provided in the Initial Site Assessment prepared on November 21, 2019. This project would not create a significant hazard to the public or the environment. Aerially deposited lead (ADL), thermoplastic paint, and treated wood waste (TWW) are present within the project location.

Low levels of aerially deposited lead from the historic use of leaded gasoline exist along roadways throughout California. A preliminary site investigation (PSI) will be required for ADL. Based on results of the PSI, special materials handling, worker health, and safety training or regulated soil disposal may be required for construction. Depending on the concentration of ADL as per the PSI, appropriate ADL Standard Specifications will be required.

The Contractor is required to properly manage removed stripe and pavement marking and must prepared a project specific Lead Compliance Plan (LCP) to prevent or minimize worker exposure to lead while working on and/or handling materials containing lead. The contractor would use one of the following

Standard Special Provisions (SSPs) for traffic striping removal, depending on the method and type required.

- SSP 36-4 “Concentration Lead from Paint and Thermoplastic” to remove yellow paint or yellow thermoplastic paint during grinding/cold planning and the project will not require the paint or thermoplastic paint to be removed before grinding begins. And/or

- SSP 84-9.03B “Remove Traffic Stripes and Pavement Markings Containing Lead” to remove traffic striping that is nonhazardous and/or other colors of paints (white, blue, black, etc.). And/or

- SSP 14-11.12 “Remove Hazardous Striping” to remove yellow painted traffic striping and pavement marking.

Treated wood waste can occur as posts along metal beam guard railing (MBGR), thrie beam barrier, piles, or roadside signs. These wood products are typically treated with preserving chemicals that may be hazardous (carcinogenic) and include but are not limited to arsenic, chromium, copper, creosote, and pentachlorophenol. The Department of Toxics Substances Control (DTSC) requires that TWW either be disposed as a hazardous waste, or if not tested, the generator may presume that TWW is a hazardous waste and must be disposed in an approved TWW facility. If TWW is present, the Contractor would use SSP 14-11.14 “Treated Wood Waste”.

The Contractor would prepare demolition/renovation/rehabilitation notification/permit form and attachments to be submitted to the Air Pollution Control District (APCD) or Air Quality Management District (AQMD) as required by the National Emission Standards for Hazardous Air Pollutants (NESHAP) at 40 CFR Part 61, Subpart M, and California Health and Safety Code section 39658(b)(1). The Contractor would use SSP 14-9.02 “Asbestos Notification” (use regardless of asbestos presence or not if demolishing/disturbing structures). If asbestos is detected, then the Contractor would develop an Asbestos Compliance Plan (ACP).

Disturbance, removal, transportation and disposal of asbestos cement pipe on the ground would require an Asbestos Compliance Plan. The asbestos cement pipe would be appropriately handled, removed, and disposed of. A qualified asbestos contractor would be involved if asbestos cement pipe is encountered. The Contractor would use NSSP 14-11.17 “Management of Asbestos Cement Pipe”.

Explanations for c-g: “No Impact” determinations in this section are based on information provided in the Initial Site Assessment prepared on November 21, 2019. No existing or proposed schools are present within a one-quarter mile of the project area; therefore, there would be no impact to schools from hazardous emissions or hazardous or acutely hazardous materials.

The proposed project is within the vicinity of a site on the Cortese List. The Cortese List is a planning document used by the State of California and its various local agencies and developers to comply with the CEQA requirements in providing information the location of hazardous materials release sites. However, all work near the Cortese site for this project is within Caltrans Right-of-Way and will not be impacting the Cortese site. The Cortese site will not be disturbed.

This project is not located within an airport land use plan, within two miles of a public airport, or within the vicinity of a private airstrip. The project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires.

HYDROLOGY AND WATER QUALITY

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would i) result in substantial erosion or siltation on- or off-site;	☐	☐	☐	☒
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☐	☒
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	☐	☐	☐	☒
iv) impede or redirect flood flows?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

Explanation for a and d: “Less than Significant Impact” determinations in this section are based on information provided in the Water Quality Assessment Report prepared January 15, 2020 and the Floodplain Evaluation Report Summary prepared May 4, 2020. The proposed project would comply with the conditions of the Caltrans Statewide National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System Permit (Order No. 2012-0011-DWQ) and the National Pollutant Discharge Elimination System Construction General Permit (Order No. 2009-0009-DWQ), and the State Water Resources Control Board Water Quality Permit (Order No. 2003-0003-DWQ) for Low Threat Discharges to Land, as necessary. A Storm Water Pollution Prevention Plan would be prepared by the contractor. The Storm Water Pollution Prevention Plan would incorporate temporary construction site best management practices and ensure effective implementation, placement, handling, storage, use, and disposal practices. In addition, Section 13 of the Caltrans Standard Specifications would be implemented to ensure water pollution control and general specifications for preventing, controlling, and abating pollutant discharges into stream, waterways, and other bodies of water are in place.

The project is located within Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map Number 06067C0180J. The entire project lies within a floodplain designation by FEMA as Special Flood Hazard Area Zone AE. “Zone AE” is defined as areas within the floodplain of 1% annual change floodplain (100-year flood). The proposed project would not cause a significant change to the 100-year floodplain. No significant floodplain encroachment would occur.

Explanation for b, c, and e: “No Impact” determinations in this section are based on the information provided in the Water Quality Assessment Report prepared January 15, 2020. The proposed project would not decrease groundwater supplies or interfere with groundwater recharge. The proposed project would also not alter the existing drainage pattern of the area or conflict with the implementation of a water quality control plan.

LAND USE AND PLANNING

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide 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?	☐	☐	☐	☒

Explanation for a and b: "No Impact" determinations in this section based on the scope, description, and location of the proposed project. During construction, the bridge will remain open to two-way traffic and no community division in anticipated. The proposed project would also not conflict with any land use plan, policy, or regulation.

MINERAL RESOURCES

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Explanation for a and b: "No Impact" determinations in this section are based on the scope, description, and location of the proposed project, as well as the mineral resource maps from the California Department of Conservation. No mineral resources were identified within the project limits.

NOISE

Would the project result in:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐
b) Generation of 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 two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Explanation for a and b: "Less Than Significant Impact" determinations in this section are based on information provided in the Noise Analysis prepared February 26, 2020.

Construction equipment is expected to generate temporary noise levels ranging from 70 to 90 dBA at a distance of 50', and noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance. Construction noise would primarily result from operating heavy construction equipment and arrival and departure of heavy-duty trucks.

The project is not expected to generate excessive groundborne vibration or groundborne noise. Vibration levels could be perceptible and cause disturbances near the project areas during operation of heavy equipment. However, these effects would be short-term and intermittent and would cease once construction is completed.

No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with the Caltrans Standard Specifications Section 14-8.02 "Noise Control" which includes provisions for controlling and monitoring noise resulting from work activities. Construction noise would be short-term, intermittent, and overshadowed by local traffic noise.

Additional potential noise minimization measures would include:

Measure 1: Notify the residents within 100' of the project area in advance of nighttime construction activities.

Measure 2: Limit operation of jackhammers, concrete saws, pneumatic tools and demolition equipment operations to the daytime hours (8AM to 7PM) to the maximum extent feasible. Nighttime construction

work would be limited to the portion of the project site furthest from the residences, to the maximum extent feasible.

Measure 3: All equipment would have sound-control devices that are no less effective than those provided on the original equipment. No equipment would have an unmuffled exhaust.

Measure 4: The Contractor would implement appropriate additional noise mitigation measures, including changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents before construction work, and installing acoustic barriers around stationary construction noise sources.

Explanation for c: The "No Impact" determination in this section is based on information provided in the Noise Analysis prepared February 26, 2020. The project is not located within the vicinity of a private, public, or public use airport. There would be no impact from airport noise.

POPULATION AND HOUSING

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Explanation for a and b: "No Impact" determinations in this section are based on the description and location of the proposed project. The proposed project would not increase capacity or access; therefore, it would not directly or indirectly induce population growth in the area. The project would not add new homes or businesses and would not extend any roads or other infrastructure. Although some of the areas surrounding the project are rural residential communities, there are no residences within the project area, and no replacement housing would be necessary.

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:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☒	☐
Other public facilities?	☐	☐	☐	☒

Explanation: "No Impact" and "Less than Significant Impact" determinations in this section are based on the description, location of the proposed project, and plans obtained from utility owners. Due to the

nature of this project, new or physically altered governmental facilities are not required to maintain acceptable service ratios, response times, or other performance objectives to public services. However, the American River Parkway would be temporarily affected. Refer to Appendix A – Section 4(f) Study for additional information.

RECREATION

	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

Explanation for a and b: "Less than Significant Impact" determinations in this section are based on the project scope, field reviews, and information provided in the Section 4(f) Study prepared on May 19, 2020.

The American River Parkway would be used temporarily during project construction. Avoidance and Minimization Measures have been incorporated to lessen these impacts to less than significant. The proposed project would have a *de minimis* impact on the American River Parkway. Refer to Appendix A – Section 4(f) Study for additional information.

TRANSPORTATION

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☒
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (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)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☐	☒

Explanation for a-d: "No Impact" determinations in this section are based on the information provided in the Transportation Management Plan prepared November 1, 2019. The project is not anticipated to conflict with a program, plan, ordinance, policy addressing the circulation system, or with CEQA Guidelines section 15064.3 subdivision (b). The project is also not anticipated to change any geometric design features. The proposed project would not cause an increase in traffic levels and two-way traffic would be maintained during construction activities.

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:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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	☐	☐	☐	☒
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

Explanation for a and b: "No Impact" determinations in this section are based on information provided in the Historic Property Survey Report prepared on April 6, 2020.

The California Native American Heritage Commission (NAHC) was contacted to request a search of the sacred lands file and an updated list of Native American contacts for the project area. Consultation was initiated with the local Native American tribes and no concerns have been raised at this time regarding the project. Consultation is on-going.

UTILITIES AND SERVICE SYSTEMS

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and 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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

Explanation for a: The "Less than Significant Impact" determination in this section is based on the project scope, description, and location. Existing conflicting utilities have been identified within the project limits. An asbestos cement pipe running underneath bents 12-24, and parallel along the bridge was identified and attempts to positively locate it have been completed. No pipes were located via potholes, but existing as-builts and utility maps suggest there is an asbestos sewer pipe along this location.

Coordination with the Sacramento Sewer District (SASD) has occurred and they have confirmed the pipeline has been decommissioned. SASD has communicated that they would like a plan to show where potential impacts to their decommissioned lines will be. The utility plan submittal will lay-out pipeline removal of SASD's facility and must be submitted to Sacramento Regional County Sanitation District (Regional San) for review. During the project design phase, a NSSP will be added to allow for filling the abandoned pipe with cement slurry and removing portions of the pipe that are impacted.

Transverse to the bridge, at bents 16-23, there are four high voltage power lines that span over the bridge, causing construction constraints. These lines are, from south to north, Pacific Gas and Electric Company (230 kV), Sacramento Municipal Utility District (230 kV), Wester Area Power Administration (230 kV), and Sacramento Municipal Utility District (60 kV). To avoid impacts these lines, Caltrans

Division of Engineering Services has determined that splicing the piles will allow for proper vertical clearance for construction of the bridge foundations.

Explanation for b-e: “No Impact” determinations in this section are based on the project scope, description, and location. The project would have sufficient water supplies during construction and would not have an effect on water supplies for future developments. The project would not have a demand for wastewater or solid waste treatment. The project would comply with all statutes and regulations related to the disposal of solid waste generated during construction.

Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) 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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Explanation for a-d: "No Impact" determinations in this section are based on the project description, location, and CalFire Fire Hazard Severity Map. The proposed project would not impair an adopted emergency response plan since the roadway would remain open to two-way traffic during construction. The project would also not exacerbate any wildlife risks. The project is not located in an area of that has a high landslide risk, so no impact is anticipated from fire related landslides. The project would comply with all regulations and not expose people or structures to fire related flooding.

MANDATORY FINDINGS OF SIGNIFICANCE

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

Explanation for a and b: The “Less Than Significant with Mitigation Incorporated” determination in this section is based on the project scope, location, and technical studies. The proposed project would result in impacts to waters of the United States and State, wetlands, riparian habitat, VELB, and Central Valley steelhead, green sturgeon, Central Valley spring-run Chinook salmon, and Central Valley winter-run Chinook salmon habitat. However, by implementing the proposed mitigation measures, the project would have less than significant impacts to these resources. Please refer to Section 4 – Biological Environment for additional information.

The proposed project is not anticipated to have any significant impacts; therefore, no significant cumulatively considerable impacts are anticipated. Other past, current, and future projects in the area will continue efforts to mitigate all environmental impacts to a less than significant level.

Explanation for c: The ‘No Impact” determination in this determination in this section is based on the project scope, location, and technical studies. The proposed project would not cause substantial adverse effects on humans, either directly or indirectly.

Section 4 Affected Environment, Environmental Consequences, and Mitigation Measures

Biological Environment

NATURAL COMMUNITIES

Regulatory Setting

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

Affected Environment

Riparian Forest/Shrub

Riparian forest and shrub land cover types occupy the floodplain of the American River. The overstory of the riparian forest is predominately provided by valley oak and Fremont cottonwood. Gooding's willow and other willow species, Oregon white ash, boxelder, and tree of heaven are also present. The riparian forest includes two sensitive natural communities, riparian forest and shrub. Riparian forest in the BSA occurs along the banks and floodplain of the American River. Riparian shrub land cover type is located along the edge of the emergent wetland and adjacent to the riparian forest. Riparian shrub land cover type is dominated by scattered coyote brush and small interior live oak trees. The riparian understory of the American River is primarily grasses and forbs, and includes California mugwort, horsetail and curly dock.

Environmental Consequences

Riparian habitats provide foraging and nesting habitat and serve as migration and dispersal corridors for bird and mammals species in the region. Common wildlife species that may occur in these habitats include bushtit (*Psaltriparus minimus*), Western scrub jay (*Aphelocoma californica*), red-shouldered hawk (*Buteo lineatus*), striped skunk, common opossum (*Didelphis marsupialis*), and raccoon.

Riparian habitats are sensitive natural communities that provide important habitat for wildlife and shaded riverine aquatic (SRA) cover habitat for fish, as well as migration corridor for wildlife. Local, state, and federal agencies recognize riparian habitats as sensitive natural communities. However, the BSA is an area of frequent disturbance due to recreational and transient activities. Additionally, the area presently is highly open and unrestrictive to animal migration activities.

Any impacts to wildlife migrations associated with the project construction would be temporary. At project completion, full usage of the channel as a migration corridor would be restored.

The riparian vegetation on the north and south banks of the American River will be removed to facilitate bridge deck widening work. Approximately 5.21 total acres of riparian vegetation will be permanently impacted. Refer to Figure 11 for a map showing riparian impacts.

Figure 12: Riparian Impacts

Mitigation Measures

Permanently losing 5.21 acres of riparian habitat will be mitigated through a cooperative agreement with the Sacramento Water Forum in which Caltrans will fund the ongoing Salmonid Habitat Restoration Project that is being conducted by the Water Forum. If this is infeasible, Caltrans will pursue purchasing mitigation credits at an approved mitigation bank.

CEQA Significance

The proposed project would cause less than significant impacts to riparian habitat with the incorporated mitigation.

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 CWA 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, CWA jurisdiction extends beyond the OHWM to the limits of the adjacent wetlands. To classify wetlands for the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All 3 parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

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

The USACE issues 2 types of 404 permits: General and Individual. There are 2 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 USACE's Individual permits. There are 2 types of Individual permits: Standard permits and Letters of Permission. For Individual permits, the USACE 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 USACE 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 USACE may not issue a permit if there is a "least environmentally damaging practicable alternative" (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

The Executive Order for the Protection of Wetlands (EO 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, EO 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 CDFW before beginning construction. If CDFW determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFW jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFW.

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 CWA. In compliance with Section 401 of the CWA, 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.

Affected Environment

Wetlands

Jurisdictional wetlands and waters are present within the project limits. The term “jurisdictional wetlands” refers to areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil condition. Jurisdictional wetlands generally include swamps, marshes, bogs, natural drainage channels, and seasonal wetlands.

Other Waters

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

Environmental Consequences

Wetlands

The project will permanently impact approximately 0.13 acres of wetlands due to the permanent fill from culvert lengthening during roadway widening activities. The project will temporarily impact 0.26 acres of wetlands from the temporary fill that will be used to facilitate construction access. Additionally, seasonal wetlands occur within the project limits. At this time, the seasonal wetlands have not been delineated, but work will be completed prior to the submittal of the permit applications. Figure 12 below shows impacts to wetlands.

Figure 13: Impacts to Wetlands

Other Waters

The Project will permanently impact approximately 0.33 acres of Waters of the U.S. and State resulting from the installation and permanent placement of the steel pipe piles, seal course, and pile cap around in-water piers 3-8.

The construction of temporary cofferdams will result in a temporary loss of 0.56 acres of waters. The construction of a temporary trestle to allow work to occur on in-water piers 3-8 will result in a temporary loss of 0.028 acres of Critical Habitat waters.

The project has been designed to minimize temporary and permanent impacts to the American River as it has been identified as a Water of the U.S. and State. Project measures and best management practices (BMPs) incorporated into the design will minimize effects of construction activities on the channel. The project will comply with the following avoidance and minimization measures:

- Prior to initiating construction, Environmentally Sensitive Area (ESA) fence shall be installed along the construction limits to prevent encroachment into riparian areas adjacent to the construction site that are not targeted for clearing.

- Prior to the start of construction activities, Caltrans will obtain all necessary regulatory permits for this project. These permits are expected to include a Clean Water Act (CWA) Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB), a CWA Section 402 National Pollutant Discharge Elimination System (NPDES) Compliance Permit from the State Water Resources Control Board, a CWA Section 404 Nationwide 14 Permit from the United States Army Corps of Engineers (USACE), a Fish and Game Code 1602 Streambed Alteration Agreement from the California Department of Fish and Wildlife (CDFW), and a Floodplain Encroachment Permit from the Central Valley Flood Protection Board (CVFPB).

Mitigation Measures

The permanent loss of 0.13 acres of jurisdictional wetlands and 0.33 acres of jurisdictional waters of the United States will be mitigated by the purchase of credits at an approved mitigation bank or through "in-lieu-fee" mitigation. Temporary impacts for 0.26 acres of jurisdictional wetlands and 0.59 acres of potentially jurisdictional waters of the United States will be mitigated through "in-lieu-fee" mitigation.

CEQA Significance

The proposed project would result in less than significant impacts with mitigation incorporated to wetlands and other waters.

PLANT SPECIES

Regulatory Setting

The U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) have regulatory responsibility for the protection of special-status plant species. "Special-status" species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are provided varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA).

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

The regulatory requirements for FESA can be found at 16 United States Code (USC) Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. The regulatory requirements for CESA can be found at California Fish and Game Code, Section 2050, et seq. Department projects are also subject to the Native Plant Protection Act, found at California Fish

and Game Code, Section 1900-1913, and the California Environmental Quality Act (CEQA), found at California Public Resources Code, Sections 21000-21177.

Affected Environment

Botanical surveys were conducted on July 2, 2018. Various special status species were evaluated for potential occurrence within the project limits.

Environmental Consequences

No special status plant species were observed within the project limits. Therefore, no impact so special-status plant species is anticipated.

Mitigation Measures

No mitigation measures are proposed.

CEQA Significance

The proposed project would result in no impact to special-status plant species.

ANIMAL SPECIES

Regulatory Setting

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

Federal laws and regulations relevant to wildlife include:

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

State laws and regulations relevant to wildlife include:

- 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

Migratory Birds

All migratory birds, including feathers or other parts, nests, eggs, or products are protected under the Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703-712). The Migratory Bird Treaty Act makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, except as allowed by implementing regulations (50 CFR 21). Disturbance that causes nest abandonment or loss of nest productivity (e.g., killing or abandonment of eggs or young) may be considered a "take" and is potentially punishable by fines and imprisonment.

Native birds, protected under the MBTA and similar provisions under CDFW code, currently nest or have the potential to nest within the Biological Study Area (BSA) and the project impact area. During biological surveys, habitat was determined to be favorable to canopy, cavity and structural nesting birds. Evidence of swallows (*Hirundo rustica*) nesting was present under the American River bridge structure.

Environmental Consequences

The following project features would reduce impacts to migratory birds:

- To ensure compliance with MBTA and CDFW code, vegetation removal and initiation of construction activities should not occur during the nesting season (defined as February 15 – September 30). If this is not possible and vegetation removal or initiation of work is to occur during the nesting season, a pre-construction survey will be required. The pre-construction survey shall be performed by a qualified biologist, to determine the presence of nesting birds and ensure active nests are not directly or indirectly impacted during construction. The preconstruction survey area will include the limits of the project impact area plus a 500-ft buffer. If work is planned to begin during the nesting season (February 15 – September 30), all vegetation removal shall be completed within 7-10 days of the nesting survey where the survey determines no active nests are present. If the nest of a protected bird is found, the perimeter shall be flagged and a qualified biologist will coordinate with USFWS and CDFW to determine an appropriate buffer distance from construction to ensure protection of the nest. The contractor shall stop work in the nesting area and is prohibited from conducting work that could disturb the nesting birds until the buffer is established (as determined by the project biologist in coordination with wildlife agencies). The buffer shall remain in the protected area until the biologist has determined that nesting activities are complete.

- Construction activities shall not disturb nesting swallows. A qualified biologist shall coordinate with CDFW and USFWS to determine what construction activities, if any, can occur once nesting activities commence.

- To protect migratory swallows, unoccupied nests will be removed from the existing bridge structure prior to the nesting season (February 15 – September 30). During the nesting season, the bridge structure shall be maintained either through exclusion devices and/or the active removal of partially constructed nests. After a nest is completed, it can no longer be removed until an approved biologist has determined that all birds have fledged and the nest is no longer being used.

Mitigation Measures

No mitigation measures are proposed.

CEQA Significance

The proposed project would result in no impact to special-status animal species.

THREATENED AND ENDANGERED SPECIES

Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 United States Code (USC) Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) 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 (FHWA) (and the Department, as assigned), are required to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service) to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take statement or a Letter of Concurrence. Section 3 of FESA defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the California Endangered Species Act (CESA), California Fish and Game Code Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. The California Department of Fish and Wildlife (CDFW) is the agency responsible for implementing CESA. 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." CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFW. For species listed under both FESA and CESA requiring a Biological Opinion under Section 7 of FESA, the CDFW may also authorize impacts to CESA 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 United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

Affected Environment

Swainson's Hawk

Swainson's hawk is listed as threatened under the California Endangered Species Act (CESA) and is a migratory bird species protected under the federal Migratory Bird Treaty Act (MBTA). Swainson's hawk typically breed in grasslands, riparian areas, savannahs, and agricultural lands while its breeding range is from southwestern Canada to northern Mexico. Foraging habitat for Swainson's hawk consists of relatively open grass dominated vegetation, sparse shrublands, and cropland. Swainson's hawks will migrate long distances and tend to build their nests in large sparsely vegetated flatlands characterized by valleys, plateaus, broad floodplains, and large expanses of desert. In California, these birds typically return to nest sites in March, and migrate south in the fall.

Valley Elderberry Longhorn Beetle

The Valley Elderberry Longhorn Beetle (VELB) is listed as a federally threatened species. Elderberry shrubs are hosts for VELB larvae. The VELB's range has been reduced and greatly fragmented due to a loss of elderberry inhabited communities, most especially riparian habitat loss. Habitat loss is derived from agricultural development, urbanization, levee maintenance and pesticide drift where aerial application or fogging of crops occurs near riparian habitats.

Adult VELB feed on elderberry foliage and are present from March through early June. During this time, the adults mate within the canopy and females lay their eggs, either singularly or in small clusters, in living elderberry bark crevices or at the junction of stem/trunk or leaf petiole/stem. After eggs hatch, the first instar larvae burrow into the host elderberry stems to feed on pith for one to two years. As the larvae becomes ready to pupate, it chews outward from the center of the stem through the bark. After the larvae plugs the newly constructed emergent hole with shavings, it returns to the pupal chamber to metamorphose, and will emerge in mid-March through June as adults. Elderberry stems with emergence holes indicate current

and/or previous VELB presence. VELB utilize stems greater than 1 inch in diameter and produce circular to oval emergent holes 7 to 10 millimeters in diameter with the majority occurring 4' or less above the ground.

Central Valley Steelhead

Central Valley steelhead is listed as threatened under the federal Endangered Species Act and is under the jurisdiction of the National Marine Fisheries Service (NMFS). Steelhead are anadromous fish that spend part of their cycle in freshwater and part in salt water. This species spawns in small, freshwater streams where the young remain from one to several years before migrating to the ocean to feed and grow. Adults return to their natal streams to spawn and complete their life cycle. Among the threats contributing to the steelhead's decline are predation by nonnative predators, inaccessibility to reaches within its native range, and habitat degradation. In addition, the loss of shaded riparian corridors and alternations to natural flow regimes have contributed to lethal water temperatures during egg incubation and early rearing.

Central Valley Steelhead use the American River for migration (adults and juveniles), spawning (adults), and rearing (juveniles). Both hatchery and wild (naturally produced) steelhead occur in the American River, although hatchery fish likely make up a large percentage of the in-river spawning population. Based on steelhead behavior and habitat requirements, and observed habitat conditions in the BSA, spawning and egg incubation are not likely to occur in the BSA. Migration through the project action area occurs from September through March. The proposed project is located within designated Critical Habitat for this species.

Central Valley Spring-run Chinook Salmon

The Central Valley spring-run Chinook salmon is listed as a federally and state threatened species and is under the jurisdiction of the NMFS. Adult spring-run Chinook salmon enter the mainstream Sacramento River from February through September, with the peak upstream migration occurring from May through June. Adults generally enter tributaries from the Sacramento River between mid-April and mid-June. Spring-run Chinook salmon are sexually immature during upstream migration, and adults hold in deep, cold pools near spawning habitat until spawning commences in late summer and fall. Spawning habitat occurs in the upper reaches of the Sacramento River and tributaries, including Butte Creek. Spawning and egg incubation do not occur in the BSA.

Typically, spring-run Chinook salmon do not occur in the American River. However, similar to winter-run juveniles, juvenile spring-run Chinook salmon may use the American River as non-natal rearing habitat. Like winter-run juveniles, the occurrence of spring-run juvenile Chinook salmon in the American River has been observed around or after high flow pulses in the Sacramento River and have coincided with juvenile downstream movement. The proposed

project is located within designated Critical Habitat for this species.

Central Valley Winter-run Chinook Salmon

The Central Valley winter-run Chinook salmon is listed as a federally and state threatened species and is under the jurisdiction of the NMFS. Winter-run Chinook salmon spend 1–3 years in the ocean. Adult winter-run Chinook salmon leave the ocean and migrate through the Delta into the Sacramento River from December through July, with peak migration in March. Downstream movement of juvenile winter-run Chinook salmon begins in August, soon after fry emerge. The peak abundance of juveniles moving downstream at Red Bluff occurs in September and October. Winter-run Chinook salmon smolts may migrate through the Delta and San Francisco Bay to the ocean from November through May. The Sacramento River channel is the main migration route; however, the Yolo and Sutter Bypasses also provide outmigration passage during higher flow events.

Typically, winter-run Chinook salmon do not occur in the American River. However, there is confirmed evidence through genetic markers that early-dispersing Sacramento River winter-run Chinook salmon fry use the American River as non-natal rearing habitat at least as far upstream as the Watt Avenue Bridge (i.e., upstream of the BSA). The occurrence of juvenile winter-run Chinook salmon in the American River has been observed around or after high flow pulses in the Sacramento River. These pulses coincide with juvenile downstream movement and cause the American River to back up considerably.

Green Sturgeon

Green sturgeon is listed as a Federally Threatened Species and is under the jurisdiction of the NMFS. Although anadromous, green sturgeon is primarily a marine dwelling species of estuaries, bays and oceanic waters. During the breeding season, mature green sturgeon navigate upstream to freshwater riverine environments from February to July. Spawning is relatively infrequent and believed to occur once every 2 to 5 years, from March to July in cold, clean waters. Among the threats contributing to the green sturgeon's decline are invasive species, inaccessibility to reaches within its native range, pollution, water development projects, insufficient water levels, fishing and habitat loss. In addition, the loss of shaded riparian corridors and alterations to natural flow regimes have contributed to harmful water temperatures during egg deposition (preferred 46-57 degrees Fahrenheit) and larval development (preferred 52-66 degrees Fahrenheit).

Green sturgeon does not appear to occupy the lower American River even though the river is accessible to green sturgeon (i.e., there is no physical barrier blocking upstream migration). However, the recent occurrence of a juvenile white sturgeon in CDFW's rotary screw trap near the Watt Avenue Bridge suggests that the BSA is accessible to the Sacramento River population of green sturgeon, at least sometimes.

The abundance of north American green sturgeon populations has declined by 88 percent throughout much of its range. A number of threats and stressors exist for green sturgeon, specifically, reduced spawning habitat from migration barriers, exposure to toxins, harvest,

reduced rearing habitat, increased water temperatures, dredging, non-native aquatic species, and entrainment in unscreened diversions.

Environmental Consequences

Swainson's Hawk

During biological surveys, no sign of Swainson's hawk was observed in the BSA. However, Swainson's hawk could nest in areas with mature trees in the BSA, such as riparian forest/shrub, and oak woodland savanna, and could forage in the larger grassland and wetland areas. The nearest California Natural Diversity Database (CNDDB) occurrence is 1 mile from the project site.

By incorporating the project features listed below, if any nesting Swainson's hawks are found, potential construction related impacts would be minimized.

- Vegetation removal and initiation of construction activities should not occur during the nesting season (defined as February 15 – September 30). If this is not possible and vegetation removal or initiation of work is to occur during the nesting season, a pre-construction survey will be required. The pre-construction survey will be performed by a qualified biologist, to determine the presence of nesting birds and ensure active nests are not directly or indirectly impacted during construction. The preconstruction survey area will include the limits of the project impact area plus a 500-foot buffer. If work is planned to begin during the nesting season, all vegetation removal shall be completed within two weeks of the nesting survey where the survey determines no active nests are present. If the nest of a protected bird is found, the perimeter shall be flagged and a qualified biologist will coordinate with USFWS and CDFW to determine an appropriate buffer distance from construction to ensure protection of the nest. The contractor shall stop work in the nesting area and is prohibited from conducting work that could disturb the nesting birds until the buffer is established (as determined by the project biologist in coordination with wildlife agencies). The buffer shall remain in the protected area until the biologist has determined that nesting activities are complete.

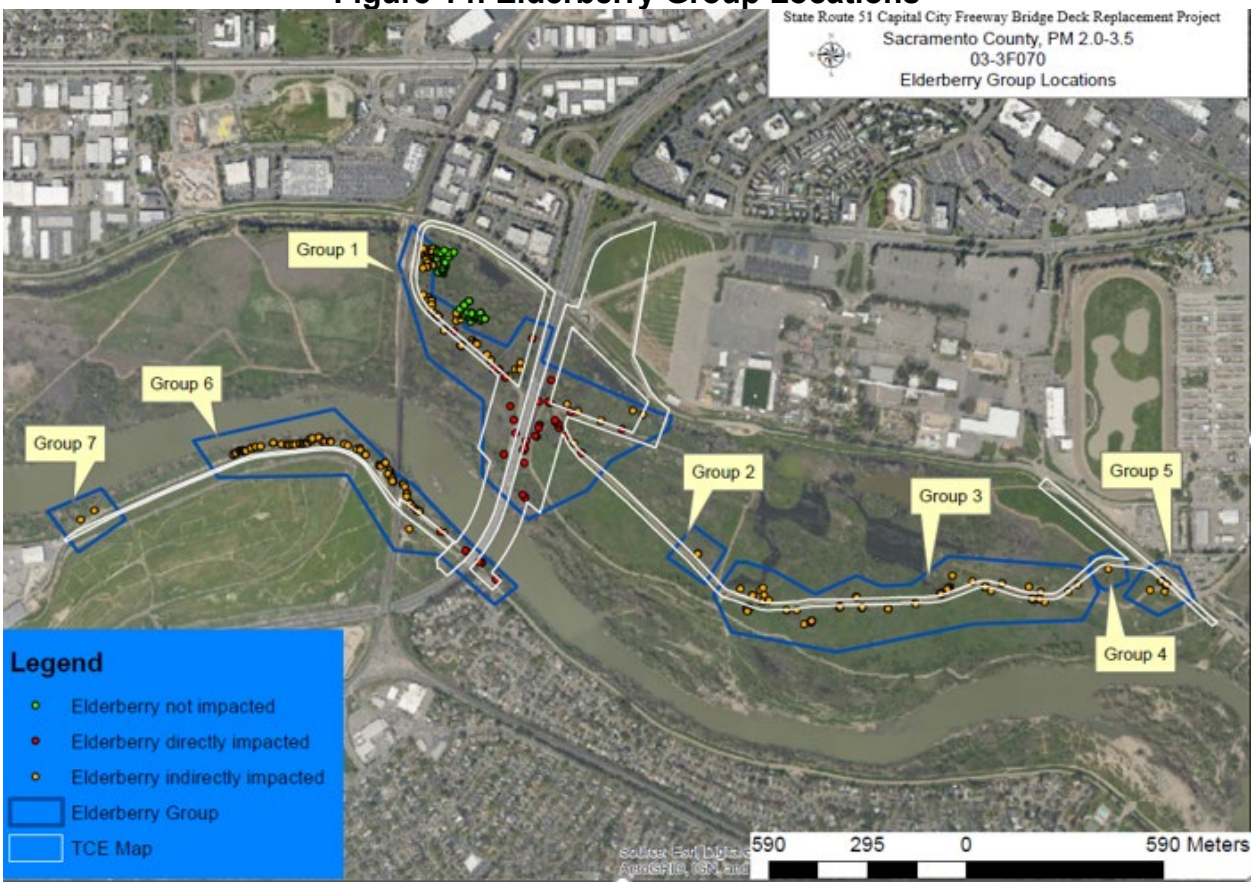
- Protocol level surveys will be conducted to establish a *no take* determination for Swainson's Hawk. This will use the "Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley" written by the Swainson's Hawk Technical Advisory Committee dated May 31, 2000. These surveys are ongoing and will continue through project development. Survey reports will be written as each phase of the nesting season is surveyed and will be available upon request.

Valley Elderberry Longhorn Beetle

Surveys for elderberry shrubs were conducted on May 15, 2018; May 30, 2018; June 25, 2019; September 17, 2019; September 20, 2019; September 27, 2019; and October 22, 2019. Shrub clusters were located along the American River Bike Trail and along overland access routes within oak woodland savanna habitat. Shrub clusters were observed within oak woodland/savanna and riparian habitat. Additional shrub clusters were located underneath the SR 51/Capital City Freeway embankment, east and west of the freeway, and along the south bank of the American River.

Only shrubs with at least one stem greater than one inch at ground level were mapped. The BSA includes both riparian and non-riparian habitat. Mature riparian habitats occur south of the levee near Cal Expo as well as along the bank of the American River. The majority of elderberry shrubs mapped within the BSA were mature with a few that were very large and arborescent. Figure 13 below shows the locations of the shrubs in groups.

Figure 14: Elderberry Group Locations



Direct Effects to VELB

The project will require the direct removal of 47 elderberry shrubs including stems which may contain larvae, resulting in potential direct "take" of VELB. The project may affect, and is likely

to adversely affect VELB. The proposed project work window also includes three months of the adult flight period, increasing the chances of adult mortality. Project impacts will be assessed as indirect impacts, temporary direct impacts, and permanent direct impacts. Exit holes were identified in approximately 8% of elderberry shrubs within the project area. The elderberry shrubs located on the eastern access road are burned due to fires. The elderberry shrubs located on the south bank of the river are inundated within heavy California wild grape overgrowth.

Indirect impacts that would result from the proximity to construction may include impacts from construction dust, changes in hydrology, shading, soil compaction, and removal of associated riparian woodland species.

Temporary direct impacts include the transplanting of the elderberry, and the temporary disturbance of the VELB's original habitat for 1 year or less. Permanent direct impacts include the transplanting of the elderberry onsite, and the temporary disturbance of the VELB's original habitat for more than 1 year. Permanent substructure work will be conducted within VELB habitat. Additionally, all stockpiling and staging will occur outside of VELB habitat.

Due to the size of the project and the amount of elderberry shrubs present, Caltrans separated the analysis of VELB within the BSA into 7 groups determined by location. Group 1 consists of elderberry shrubs located under the American River Bridge, and on the American River Bike Trail. Groups 2, 3, 4 and 5 all consist of elderberry shrubs located along the access road east of Group 1. Group 6 consists of elderberry shrubs located on the south bank of the American River, south of Group 1, and includes elderberry shrubs along the levee access road that runs west of the bridge. Group 7 includes elderberry shrubs along the levee road that runs west, near the skate park on 28th street, west of Group 6.

Group 1 consists of 221 elderberry shrubs, 3 of which are located within riparian habitat. Exit holes were identified in 20 shrubs. 39 shrubs will be directly impacted and 182 will be indirectly impacted. All directly impacted elderberry shrubs will be transplanted to a USFWS-approved mitigation bank between November and February. Caltrans proposes to mitigate for 1.05 acres of riparian habitat and 24.31 acres of non-riparian habitat.

Group 2 consists of 2 elderberry shrubs, both of which are located within non-riparian habitat. No exit holes were identified in any of these elderberry shrubs; however, exit holes are difficult to detect so it is conceivable that exit holes may have been present and not detected. No shrubs will be directly impacted and 2 will be indirectly impacted. Mitigation is not proposed for indirectly impacted shrubs, as impacts will be avoided and minimized through protective ESA fencing.

Group 3 consists of 124 elderberry shrubs, 11 of which are located within riparian habitat. No exit holes were identified in these elderberry shrubs; however, exit holes are difficult to detect so it is conceivable that exit holes may have been present and not detected. No shrubs will be

directly impacted and 124 will be indirectly impacted. Mitigation is not proposed for indirectly impacted shrubs, as impacts will be avoided and minimized through protective ESA fencing.

Group 4 consists of 1 elderberry shrub, located within non-riparian habitat. This shrub will be indirectly impacted. Mitigation is not proposed, as impacts will be avoided and minimized through protective ESA fencing.

Group 5 consists of 27 elderberry shrubs, which are located within non-riparian habitat. Exit holes were identified in 1 shrub. 27 shrubs will be indirectly impacted. Mitigation is not proposed for indirectly impacted shrubs, as impacts will be avoided and minimized through protective ESA fencing.

Group 6 consists of 143 elderberry shrubs, 5 of which are located within riparian habitat. Exit holes were identified in 10 shrubs. 8 shrubs will be directly impacted and 135 will be indirectly impacted. All directly impacted elderberry shrubs will be transplanted to a USFWS-approved mitigation bank between November and February. Caltrans proposes to mitigate for 0.86 acres of riparian habitat and 2.54 acres of non-riparian habitat.

Group 7 consists of 4 elderberries, which are located within non-riparian habitat. No exit holes were identified in these elderberry shrubs; however, exit holes are difficult to detect so it is conceivable that exit holes may have been present and not detected. No shrubs will be directly impacted and 4 will be indirectly impacted. Mitigation is not proposed for indirectly impacted shrubs, as impacts will be avoided and minimized through protective ESA fencing. Table 2 below summarizes the habitat level compensation for all groups.

Table 2 Habitat Level Compensation:

Riparian

Group #	acre	sqft	Credit	1:1 ratio
Group 1	1.05	45738	25.41	25.41
Group 2	n/a	n/a	n/a	n/a
Group 3	n/a	n/a	n/a	n/a
Group 4	n/a	n/a	n/a	n/a
Group 5	n/a	n/a	n/a	n/a
Group 6	0.86	37461.6	20.81	20.81
Group 7	n/a	n/a	n/a	n/a
Total	**1.91**	**83199.6**	**46**	**46**

Non-Riparian

Group #	acre	sqft	Credit	0.5:1 Ratio
Group 1	24.31	1058944	588.3	294.15
Group 2	n/a	n/a	n/a	n/a
Group 3	n/a	n/a	n/a	n/a
Group 4	n/a	n/a	n/a	n/a
Group 5	n/a	n/a	n/a	n/a
Group 6	2.54	110642.4	61.47	30.74
Group 7	n/a	n/a	n/a	n/a
Total	**26.85**	**1169586**	**649.77**	**325**

The following project features would reduce the impacts to VELB:

Specific avoidance and minimization measures to VELB and their habitat were taken from the USFWS May 2017 *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle.* These measures should be combined with the general avoidance and minimization measures and BMPs.

- Fencing - All areas to be avoided during construction activities will be fenced and/or flagged as close to construction limits as feasible.
- Worker Education - A USFWS qualified biologist will provide training for all contractors, work crews, and any onsite personnel on the status of the VELB, its host plant and habitat, the need to avoid damaging the elderberry shrubs, and the possible penalties for noncompliance.
- Construction Monitoring - A USFWS qualified biologist will monitor the work area at project appropriate intervals to assure that all avoidance and minimization measures are implemented.
- Trimming - to avoid and minimize adverse effects to VELB when trimming, trimming will occur between November and February and will avoid the removal of any branches that are ≥ 1 inch in diameter.
- Erosion Control and Re-vegetation - Erosion control will be implemented and the affected area will be re-vegetated where feasible with appropriate native plants.
- Transplanting - All elderberry shrubs with stems greater than one inch in diameter that cannot be avoided will be transplanted at a Service-approved location following the most current version of the American National Standards Institute (ANSI) A300 guidelines for transplanting. ANSI A300 guidelines are voluntary industry consensus standards developed by Tree Care Industry Association and written by a committee called the Accredited Standards Committee (ASC) A300, whose mission is to develop consensus performance standards based on current research and sound practice for writing specifications to manage trees, shrubs, and other woody plants.
- Dust Control - Dust control measures will be implemented for all ground-disturbing activities in the project area. These measures may include applying water to graded and disturbed areas that are unvegetated. To avoid attracting ants, water will not be sprayed within the driplines of elderberry shrubs at any time.

Restoration and Maintenance

- Fencing will be inspected daily by the contract biologist and maintained by construction under the biologist's supervision.
- Any damage done to the buffered area will be restored, including re-vegetation with appropriate native plants.

Green Sturgeon, Central Valley Steelhead, Central Valley Spring-Run Chinook Salmon, and Central Valley Winter-Run Chinook Salmon

Project impacts to green sturgeon, Central Valley steelhead, Central Valley spring-run Chinook salmon, and Central Valley winter-run Chinook salmon are derived from two main categories: temporary construction-related impacts and permanent impacts that could affect the species. Construction-related impacts include a temporary increase in sedimentation and turbidity, temporary increase in underwater noise and vibrations from pile driving, stranded fish individuals in cofferdams, and harm to fish as a result of accidental hazardous materials and chemical spills. Permanent impacts would occur as a result of changes to the physical environment, most notable to the areas noted as critical habitat for the species.

Temporary Increase in Sedimentation and Turbidity

Construction related disturbance to soils and vegetation within the project limits may temporarily increase sedimentation and turbidity of the American River. A prolonged increase in sedimentation and turbidity affects the growth, survival, and reproductive success of these aquatic species. High levels of suspended sediment reduces these aquatic species' ability to feed and respire, resulting in increased stress levels and reduced growth rates, and a reduced tolerance to fish diseases and toxicants. The increased sedimentation and turbidity resulting from project construction would be temporary and limited to a small portion of the river during construction activities.

Fish Stranding in Cofferdams

Green sturgeon, Central Valley steelhead, Central Valley spring-run Chinook salmon, and Central Valley winter-run Chinook salmon have the potential to occur within the project area during the installation of the cofferdam steel panels. Closure of a cofferdam may trap fish exposed to stress, injury, and mortality caused by poor water quality, predation, dewatering, or construction activities within the cofferdam. Further, should juveniles occur within project limits, they would be most susceptible to entrapment due to a slower escape response and a tendency to occupy the low flow channel.

Temporary Increase in Underwater Noise and Vibrations from Pile Driving

Pile driving consists of driving steel piles into the riverbed with a mechanical hammer or comparable vibratory method. Sound waves enter the water column as a pile is hit or vibrated and will resonate both radially and longitudinally. Fish with gas-filled swim bladders may be vulnerable to sound related injuries depending on the duration, frequency, and pressure of the sound waves entering the water channel. Injury occurs when gases within the bladder and associated tissues expand and contract during elevated noise and vibration levels, resulting in severe tissue damage and potentially death.

No attenuation is proposed for the land piers 9 – 11, bents 12-25 abutment 26 or land-based trestle piles. Per NMFS' pile driving calculator spreadsheet, and the most comparable projects within the *Compendium of Pile Driving Sound Data*, typical attenuated peak sound pressure levels are expected to be below the 206 dB injury criteria. However, the cumulative SEL impact zones are expected to be larger than 10 meters. Estimated noise levels for land-based pile driving and in water attenuated pile driving are summarized below. Caltrans proposes to monitor noise during impact pile driving. The purpose of monitoring is to verify that sound levels are consistent with the predicted levels in this assessment and the allowable impact zones are not exceeded.

Noise levels for attenuated impact pile driving of the 18" trestle piles, in-water and on land are:

Attenuated In-Water Impact Driving 18" Trestle Piles: The peak level for attenuated impact driving trestle piles in water are estimated to be 203 dB at 10 meters and the distance to the 206 dB peak criteria is estimated to be less than 10 meters from the pile. The distance to the 187 dB cumulative SEL criteria would be approximately 201 meters from the pile and the distance to the 183 dB cumulative SEL criteria would be approximately 251 meters from the pile.

On-Land Impact Driving 18" Trestle Piles: The peak level for impact driving the trestle piles on land greater than 10 meters from the edge of water is estimated less than 203 dB. The peak levels would not exceed the 206 dB peak criteria for piles driven on land. The distance to the 187 dB cumulative SEL criteria is estimated 201 meters from the pile. The distance to the 183 dB cumulative SEL criteria would be approximately 251 meters from the pile.

Caltrans will employ attenuation methods to reduce noise levels while impact pile driving the 30" piles at in-water piers 3-8 and the 18'' piles for the temporary trestle. Caltrans intends to employ attenuation methods that can include dewatering the cofferdam, deploying a bubble curtain, a double walled isolation casing or a dewatered isolation casing. Caltrans will develop a NSSP directing the contractor to incorporate one of the attenuation methods listed above. The attenuation used on this project will be determined during construction.

Noise levels for impact pile driving of the 30'' piles, in-water and on land are:

Attenuated In-Water Impact Driving 30'' Piles: The peak level for attenuated impact driving of the 30" piles in water may reach 205 dB at 10 meters. The distance to the 206 dB peak criteria would be less than 10 meters from the pile. Due to the number of estimated pile strikes, the maximum impact zone for the 187 dB and 183 dB cumulative SEL would extend to the distance of the effective quiet (293 meters).

On-Land Impact Driving 30'' Piles for Piers 9 Through 11, Bents 12-25 and Abutment 26: Peak levels at piers 9 through 11, bents 12-25 and abutment 26 would not exceed the 206 dB peak criteria. The maximum impact zone for the cumulative SEL criteria is estimated to extend 293 meters (961') into the water. The maximum impact zone would occur when impact driving is

nearest to the edge of water. As the distance between the pile driving operation and the edge of water increases, the size of the impact zone would decrease.

The project has been designed to utilize vibratory methods to the greatest extent practicable and will restrict all pile driving effects to what is necessary during pile installation. Impact pile driving of the piles at piers 3-8 and the 18'' piles for the temporary trestle will be performed behind an aquatic sound attenuation device that reduces transmission of sound through the water. All pile driving within the river channel would adhere to the designated June 1 - October 15 work-window and would occur during the day hours.

Indirect Effects

Indirect effects to green sturgeon, Central Valley steelhead, Central Valley spring-run Chinook salmon, and Central Valley winter-run Chinook salmon include impacts associated with the removal of riparian habitat and increased riverine shading.

Removal of Riparian Vegetation

Riparian vegetation is likely an important element to these aquatic species' habitat as it provides and maintains the temperature conditions and food resources required by the species. A disruption to functioning riparian habitats could alter stream temperatures, increase sediment levels, alter the composition and abundance of aquatic species, destabilize stream banks and/or streamside areas, reduce in-stream structural complexity, reduce large woody debris recruitment, and alter peak and base flows.

The proposed project would require the removal of a small amount of riparian vegetation and the associated shaded riverine aquatic cover within the project impact area. According to the USFWS, shaded riverine aquatic cover is considered a Resource Category 1 (irreplaceable) and is defined as:

> "the nearshore aquatic area occurring at the interface between a river and adjacent woody riparian habitat. The principal attributes of this valuable cover type include: (a) the adjacent bank being composed of natural, eroding substrates supporting riparian vegetation that either overhangs or protrudes into the water, and (b) the water containing variable amounts of woody debris, such as leaves, logs, branches and roots, as well as variable depths, velocities, and currents (USFWS 1992)."

Increase in Riverine Shading

This project has the potential to impact riverine shading by approximately 1.00 acres. This may result from bridge deck widening activities. The increase in riverine shading may result in associated riparian vegetation receiving less sunlight for photosynthesis, and in-water

vegetation receiving less light for photosynthesis. This can result in decreased fish habitat quality and decreased insect productivity. However, the benefit these aquatic species may receive from this being a cooling measure may outweigh any potential impacts caused by increased riverine shading. Blocking light can also prevent stream eutrophication (such as algal blooms). Eutrophication may reduce oxygen levels for fish and other species.

The following project features would reduce impacts to green sturgeon, Central Valley steelhead, Central Valley spring-run Chinook salmon, and Central Valley winter-run Chinook salmon:

1) All construction work that will take place in the live channel shall occur between June 1 to October 15 during the summer low-flow period to minimize potential exposure of juveniles to pile driving noise/vibration, and to minimize fish entrapment within cofferdams.

2) In-channel work shall not be conducted at night to allow fish quiet, unobstructed passage during nighttime migratory hours.

3) A qualified biologist shall prepare and implement a fish salvage plan to recover any individuals entrapped in cofferdams. The fish salvage plan shall receive approval from NMFS prior to initiating any in-channel work. At a minimum the plan shall incorporate:

- Provide for the collection, transfer and release of all entrapped sensitive fish by a qualified biologist to a designated location downstream of project activities;
- Recordation of the electrical conductivity, temperature (water and air), and pH within both the enclosure and within the free-flowing river; and
- Ensure all rescued sensitive fish be kept in aerated water and at appropriate temperatures at all times before release.

4) To minimize the potential for accidental spills of materials hazardous to the aquatic environment, a Spill Prevention Control and Countermeasures Plan (SPCCP) shall be prepared.

5) The number and size of piles shall be limited to the minimum necessary to meet the engineering and design requirements.

6) All impact pile driving of the 30'' piles and 18'' temporary trestle piles will be performed behind an aquatic sound attenuation device that reduces transmission of sound through the water, where possible. Any piles driven into the river channel shall be installed using vibratory methods to the greatest extent possible (cofferdam panels).

7) Prior to initiating construction, ESA fence shall be installed along the construction limits to prevent encroachment into the riparian areas adjacent to the construction site.

8) Prior to construction, an acoustical monitoring plan to evaluate the sound levels during pile driving activities shall be prepared by a qualified biologist. The acoustical monitoring plan shall

receive approval from NMFS prior to in-channel work and shall be implemented during all impact pile driving activities. At a minimum the plan shall incorporate:

- Daily acoustical monitoring by a qualified biologist during all pile driving activities;
- Measurement of underwater background levels using current NMFS methodology;
- Require equipment for underwater sound monitoring (hydrophone, signal amplifier, and calibrator) to utilize current National Institute of Standards and Technology traceable calibration;
- Require a minimum recordation distance of 10 meters (33') from each pile being monitored; and

9) Contract specifications will include the following BMPs, where applicable, to reduce erosion during construction.

- Implementation of the project will also require approval of a site-specific Storm Water Pollution Prevention Plan that would implement effective measures to protect water quality, which may include a hazardous spill prevention plan and additional erosion prevention techniques.
- Scheduling - A specific work schedule will be implemented to coordinate the timing of land disturbing activities and the installation of erosion and sedimentation control practices to reduce on-site erosion and off-site sedimentation.
- Preservation of Existing Vegetation – In addition to measure #7 above, existing vegetation shall be protected in place, where feasible, to provide an effective form of erosion and sediment control, and watershed protection, landscape beautification, dust control, pollution control, noise reduction, and shade.
- Mulching - Loose bulk materials shall be applied to the soil surface as a temporary cover to reduce erosion by protecting bare soil from rainfall impact, increasing infiltration, and reducing runoff.
- Soil Stabilizers - Stabilizing materials shall be applied to the soil surface to prevent the movement of dust from exposed soil surfaces on construction sites as a result of wind, traffic, and grading activities.
- Slope Roughening/Terracing/Rounding - Roughening and terracing will be implemented to create unevenness on bare soil through the construction of furrows running across a slope, creation of stair steps, or by utilization of construction equipment to track the soil surface. Surface roughening or terracing reduces erosion potential by decreasing runoff velocities, trapping sediment, and increasing infiltration of water into the soil, and aiding in the establishment of vegetative cover from seed.

10) Project activities that may affect the flow of the river through placement of fill and pier construction shall comply with the 2001 *NMFS Guidelines for Salmonid Passage at Stream Crossings*, where applicable. The guidelines include but are not limited to:

- a minimum water depth (12'' for adults and 6'' for juveniles) at the low fish passage,
- a maximum hydraulic drop of 1' for adults and 6'' for juveniles,
- avoidance of abrupt changes in water surface and velocities, and
- structures shall be aligned with the stream, with no abrupt changes in flow direction upstream or downstream of the crossing.

11) All water pumping or withdrawal from the river shall comply with 1997 NMFS *Fish Screening Criteria for Anadromous Salmonids*, where applicable, to avoid entrainment of fish. The criteria include but are not limited to:

- screen design must provide for uniform flow distribution over the surface of the screen;
- screen material openings shall not exceed 1/10'' for fry sized salmonids and shall not exceed 1/4'' for fingerling sized salmonids;
- where physically practical, the screen shall be constructed at the diversion entrance. The screen face should be generally parallel to river flow and aligned with the adjacent bankline;
- the design approach velocity shall not exceed 0.33' per second for fry sized sturgeon or 0.8' per second for fingerling sized sturgeon; and
- the screen design must provide for uniform flow distribution over the surface of the screen.

Mitigation Measures

Swainson's Hawk

No mitigation measures are proposed for Swainson's Hawk.

Valley Elderberry Longhorn Beetle

Caltrans proposes to compensate for adverse effects to VELB through the purchase of VELB mitigation credits at a USFWS approved mitigation bank.

Caltrans proposes to compensate for permanent losses using habitat level compensation. One credit (unit) is equal to 1,800 square feet and used to determine the credits required for mitigation. Permanent riparian impacts will be compensated at a 1:1 acreage ratio. Permanent non-riparian impacts will be mitigated at a 0.5:1 acreage ratio. Biological justification for these proposed mitigation ratios suggest a lower likelihood of VELB use of the project area, and are:

- The project is located outside VELB critical habitat.
- Of the 648 shrubs within the project, 41 (8%) were found to have contained exit holes.
- All shrubs along the south bank are inundated within heavy California wild grape overgrowth.
- Shrubs along the eastern access road are burned due to fires.

Caltrans proposes to compensate for 1.91 acres (46 credits) of permanent impacts to riparian elderberry habitat and compensate for 26.85 acres (649.77 credits at a 0.5:1 ratio – 325 credits) of permanent impacts to non-riparian elderberry shrubs.

Caltrans proposes to compensate for impacts to VELB with 371 credits at a USFWS approved mitigation bank.

Green Sturgeon, Central Valley Steelhead, Central Valley Spring-Run Chinook Salmon, and Central Valley Winter-Run Chinook Salmon

The project features alone will not reduce impacts to green sturgeon, Central Valley steelhead, Central Valley spring-run Chinook salmon, and Central Valley winter-run Chinook salmon habitat to a less than signficant level. Caltrans intends to compensate for potential impacts. Caltrans proposes to initiate a cooperative agreement with the Water Forum in which Caltrans will fund the ongoing Salmonid Habitat Restoration Project being conducted by the Water Forum, in the amount of to compensate for permanent loss of 0.45 acres of habitat of federally listed salmonids. If this is infeasible, Caltrans will pursue mitigation credits at an approved mitigation bank.

CEQA Significance

Swainson's Hawk

The proposed project would result in no impacts to Swainson's Hawk.

VELB

With the incorporated mitigation, the proposed project would result in less than significant impacts to VELB.

Green Sturgeon, Central Valley Steelhead, Central Valley Spring-Run Chinook Salmon, and Central Valley Winter-Run Chinook Salmon

With the incorporated mitigation, the proposed project would result in less than significant impacts to green sturgeon, Central Valley steelhead, Central Valley spring-run Chinook salmon habitat, and Central Valley winter-run Chinook salmon.

Discussion of Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires federal agencies to consult with NOAA Fisheries on activities that may adversely affect Essential Fish Habitat (EFH). The objective of this EFH assessment is to determine whether or not the proposed action(s) "*may adversely affect*" designated EFH for relevant federally-managed commercial fisheries species within the proposed action area. It also describes conservation measures proposed to avoid, minimize, or otherwise offset potential adverse effects to designated EFH resulting from the proposed action.

EFH is defined in the Magnuson-Stevens Fishery Conservation and Management Act (MSA) as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity". The components of this definition are interpreted: "Waters" include aquatic areas and their associated physical, chemical, and biological properties used by fish and may include aquatic areas historically used by fish where appropriate; "substrate" includes sediment, hard bottom, structures underlying the waters, and associated biological communities; "necessary" means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle.

Within the EFH there are "habitat areas of particular concern" (HAPC) that are described essential for conservation. Two HAPCs identified by the Pacific salmon Fishery Management Plan (FMP) occur within, or near, the BSA; complex channels and floodplains, and thermal refugia. Floodplains that are complex, containing wetlands, oxbows, side channels, and sloughs are of highest value. Thermal refugia include deep pools, undercut banks, and large woody debris that allow fish to escape warmer temperatures. These HAPCs provide foraging, holding, and rearing habitat for salmon (NMFS 2014).

Affected Environment

The American River is well documented EFH for Central Valley spring-run Chinook salmon. The runs of Chinook salmon are regulated by the Pacific Fisheries Management Council Pacific Salmon Fishery Management Plan.

Because of overlapping migration periods and varying life histories, adult and juvenile Chinook salmon of various sizes, including fry and smolts, are found in the mainstream of the American River (Moyle 2002). Detailed project impacts on Chinook salmon can be found in section 4.3.4. The following environmental conditions resulting from project implementation could affect Chinook salmon EFH:

- Temporary increase in sedimentation and turbidity,
- potential stranding of individuals in cofferdams,
- temporary increase in underwater noise and vibrations from pile driving,
- risks associated with accidental spills of hazardous chemicals and materials into waters,
- permanent loss of approximately 0.33 acres of Critical Habitat waters,
- temporary loss of 0.59 acres of Critical Habitat waters, and
- permanent loss of 3.83 acres of riparian vegetation.

Environmental Consequences

The following measures will be implemented to minimize the potential adverse effects to designated EFH described above:

1) All construction work that will take place in the live channel shall occur between June 1 to October 15 during anticipated summer low-flow period. This will minimize potential exposure of juveniles to pile driving noise/vibration, and to minimize fish entrapment within cofferdams.

2) In-channel work shall not be conducted at night to afford fish quiet, unobstructed passage during night time migratory hours.

3) A qualified biologist shall prepare and implement a fish salvage plan to recover any individuals entrapped in cofferdams. The fish salvage plan shall receive approval from NMFS/CDFW prior to initiating any in-channel work. Since river conditions at the time of construction are not currently known, a detailed fish relocation plan cannot be provided until 30 days prior to construction. A contractor supplied biologist will draft a plan to provide to Caltrans. Caltrans will then make any needed revisions and send to NMFS for approval. At a minimum the plan shall incorporate:

- Provide for the collection, transfer and release of all entrapped sensitive fish by a qualified biologist to a designated location downstream of project activities;
- Recordation of the electrical conductivity, temperature (water and air), and pH within both the enclosure and within the free-flowing river; and
- Ensure all rescued sensitive fish be kept in aerated water and at appropriate temperatures at all times prior to release.

4) To minimize the potential for accidental spills of materials hazardous to the aquatic

environment, a SPCCP shall be prepared.

5) The number and size of piles shall be limited to the minimum necessary to meet the engineering and design requirements.

6) All impact pile driving of the 30'' piles will be performed behind an aquatic sound attenuation device that reduces transmission of sound through the water. Any piles driven into the river channel shall be installed using vibratory methods to the greatest extent possible. Aquatic sound attenuation systems may include:

1) Air bubble curtain used with attenuation casing (confined air bubble curtain).

2) De-watered attenuation casing

3) De-watered cofferdam

The contractor will be required to submit working drawings and the supplement for sound attenuation system to the Caltrans Engineer for approval in conformance with the provisions of Section 5-1.02 “Plans and Working Drawings."

1) Complete details of the system including mechanical and structural details

2) Details of anchorage components, air compressors, supply lines, distribution manifolds, aeration pipes and frames

3) Details of proposed means of isolating noise-producing systems on the driving platform

The engineer will be required to inspect the sound attenuation system for proper operation before each deployment and during deployment. A sound attenuation system is not required for pile or casing installation using a vibratory hammer. The approved sound attenuation system must be operating prior to beginning pile driving at any pile location. If the attenuation system fails, pile driving shall immediately stop and may not resume at that location until it is again operating.

7) Prior to initiating construction, ESA fence shall be installed along the construction limits to prevent encroachment into the riparian areas adjacent to the construction site.

8) Prior to construction, an acoustical monitoring plan to evaluate the sound levels during pile driving activities shall be prepared by a qualified biologist. The acoustical monitoring plan shall receive approval from NMFS/CDFW prior to in-channel work and shall be implemented during all impact pile driving activities. At a minimum the plan shall incorporate:

- Daily acoustical monitoring by a qualified biologist during all pile driving activities,
- Measurement of underwater background levels using current NMFS methodology,
- Require equipment for underwater sound monitoring (hydrophone, signal amplifier, and calibrator) to utilize current National Institute of Standards and Technology traceable calibration,
- Require a minimum recordation distance of 10 meters (33’) from each pile being

monitored, and
- Provide for the collection and release of fish impacted by pile driving.

9) Contract specifications will include the following BMPs, where applicable, to reduce erosion during construction.

- Preservation of Existing Vegetation. In addition to measure #7 above, existing vegetation shall be protected in place where feasible to provide an effective form of erosion and sediment control, and watershed protection, landscape beautification, dust control, pollution control, noise reduction, and shade.
- Implementation of the Project will require approval of a site-specific SWPPP that would implement effective measures to protect water quality, which may include a hazardous spill prevention plan and additional erosion prevention techniques.
- Scheduling. A specific work schedule will be implemented to coordinate the timing of land disturbing activities and the installation of erosion and sedimentation control practices to reduce on-site erosion and off-site sedimentation.
- Mulching. Loose bulk materials shall be applied to the soil surface as a temporary cover to reduce erosion by protecting bare soil from rainfall impact, increasing infiltration, and reducing runoff.
- Soil Stabilizers. Stabilizing materials shall be applied to the soil surface to prevent the movement of dust from exposed soil surfaces on construction sites as a result of wind, traffic, and grading activities.
- Slope Roughening/Terracing/Rounding. Roughening and terracing will be implemented to create unevenness on bare soil through the construction of furrows running across a slope, creation of stair steps, or by utilization of construction equipment to track the soil surface. Surface roughening or terracing reduces erosion potential by decreasing runoff velocities, trapping sediment, and increasing infiltration of water into the soil, aiding in the establishment of vegetative cover from seed.

10) Project activities that may affect the flow of the river through placement of fill and pier construction shall comply with the 2001 *NMFS Guidelines for Salmonid Passage at Stream Crossings*, where applicable. The guidelines include but are not limited to:

- a minimum water depth (12'' for adults and 6'' for juveniles) at the low fish passage,
- a maximum hydraulic drop of 1' for adults and 6'' for juveniles,
- avoidance of abrupt changes in water surface and velocities, and
- structures shall be aligned with the stream, with no abrupt changes inflow direction upstream or downstream of the crossing.

11) All water pumping or withdrawal from the river shall comply with 1997 NMFS *Fish Screening Criteria for Anadromous Salmonids*, where applicable, to avoid entrainment of fish. The criteria include but are not limited to:

- screen design must provide for uniform flow distribution over the surface of the screen;

- screen material openings shall not exceed 3/32'' for fry sized salmonids and shall not exceed ¼'' for fingerling sized salmonids;
- where physically practical, the screen shall be constructed at the diversion entrance. The screen face should be generally parallel to river flow and aligned with the adjacent bankline;
- the design approach velocity shall not exceed 0.33' per second for fry sized salmonids or 0.8' per second for fingerling sized salmonids; and
- the screen design must provide for uniform flow distribution over the surface of the screen.

Potential effects on EFH related to sedimentation and turbidity, hazardous materials and contaminants would be temporary. Potential adverse environmental effects of the proposed project on EFH would be limited to temporary, localized, and minor increases in turbidity and suspended sediment. Potential adverse effects of temporarily increased fine sediment and turbidity on EFH will be avoided or minimized through implementation of all applicable BMPs and SWPPP, which would substantially reduce or eliminate the potential for accidental spill and unintentional discharge of contaminants. Limiting in-channel construction to the May 15 to October 15 period will further avoid and minimize the potential for adverse effects on downstream habitats.

Conclusion/Mitigation:

Adverse environmental effects of the proposed project on EFH would be limited to temporary impacts that will be minimized through avoidance and minimization measures. However, it does not completely eliminate the risk of take or harm to Chinook salmon found in the mainstream of the American River during migration to upper reaches. If required by NMFS, compensatory mitigation will be pursued. Caltrans may prefer to initiate a cooperative agreement with the Water Forum in which Caltrans will fund the ongoing Salmonid Habitat Restoration Project that is being conducted by the Water Forum to compensate for permanent loss of 0.33 acres of habitat of federally listed salmonids, and the permanent removal of 3.83 acres of riparian. If this is infeasible, Caltrans may pursue mitigation credits at an approved NMFS mitigation bank.

Adverse effect means any effect that reduces quality and/or quantity of EFH, and may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey or reduction in species fecundity), or site-specific or habitat-wide effects, including individual, cumulative, or synergistic consequences of actions. Caltrans has determined that despite the avoidance and minimization measures incorporated into the project, the proposed action *is likely to adversely affect* EFH for Chinook salmon.

Climate Change

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

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity, including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF_6), and various hydrofluorocarbons (HFCs). CO_2 is the most abundant GHG; while it is a naturally occurring component of Earth's atmosphere, fossil-fuel combustion is the main source of additional, human-generated CO_2.

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 GHG 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.

REGULATORY SETTING

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

Federal

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

The National Environmental Policy Act (NEPA) (42 United States Code [USC] 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 (FHWA) 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. FHWA 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.[1] This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values—"the triple bottom line of sustainability."[2] 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 USC Section 6201) and Corporate Average Fuel Economy (CAFE) Standards. This act establishes fuel economy standards for on-road motor vehicles sold in the United States. Compliance with federal fuel economy standards is determined through the CAFE program on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the United States.

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. EPA in conjunction with the National Highway Traffic Safety Administration (NHTSA) is responsible for setting GHG 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 United States. Fuel efficiency standards directly influence GHG emissions.

State

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

EO S-3-05 (June 1, 2005): The goal of this EO is to reduce California's GHG 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 (AB) 32 in 2006 and Senate Bill (SB) 32 in 2016.

AB 32, Chapter 488, 2006, Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 codified the 2020 GHG emissions reduction goals outlined in EO S-3-05, while further mandating that the California Air Resources Board (ARB) create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." The Legislature also intended that the statewide GHG emissions limit continue in existence and be

[1] https://www.fhwa.dot.gov/environment/sustainability/resilience/
[2] https://www.sustainablehighways.dot.gov/overview.aspx

used to maintain and continue reductions in emissions of GHGs beyond 2020 (Health and Safety Code [H&SC] Section 38551(b)). The law requires ARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

EO S-01-07 (January 18, 2007): This order sets forth the low carbon fuel standard (LCFS) for California. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by the year 2020. ARB re-adopted the LCFS 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 GHG reduction goals.

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

SB 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 AB 32.

EO B-16-12 (March 2012) orders State entities under the direction of the Governor, including ARB, 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.

EO B-30-15 (April 2015) establishes an interim statewide GHG emission reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050. It further orders all state agencies with jurisdiction over sources of GHG emissions to implement measures, pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 GHG emissions reductions targets. It also directs ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent ($MMTCO_2e$).[3] 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.

SB 32, Chapter 249, 2016, codifies the GHG reduction targets established in EO B-30-15 to achieve a mid-range goal of 40 percent below 1990 levels by 2030.

[3] GHGs differ in how much heat each trap in the atmosphere (global warming potential, or GWP). CO_2 is the most important GHG, so amounts of other gases are expressed relative to CO_2, using a metric called "carbon dioxide equivalent" (CO_2e). The global warming potential of CO_2 is assigned a value of 1, and the GWP of other gases is assessed as multiples of CO_2.

SB 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.”

AB 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 travelled, 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 ARB 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 GHG emissions.

EO 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 GHG emissions from the transportation sector. It orders a focus on transportation investments near housing, managing congestion, and encouraging alternatives to driving. This EO also directs ARB 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.

ENVIRONMENTAL SETTING

The proposed project is located in a built-up area of Sacramento County with a well-developed road and street network. According to the Sacramento County zoning maps, land use near the proposed project is zoned as Floodplain, Recreational, Commercial, Agriculture, and Industrial. The project is programmed in the Sacramento Area Council of Governments (SACOG) Metropolitan Transportation Implementation Plan (MTIP, 2019-2020).

A GHG emissions inventory estimates the amount of GHGs discharged into the atmosphere by specific sources over a period of time, such as a calendar year. Tracking annual GHG

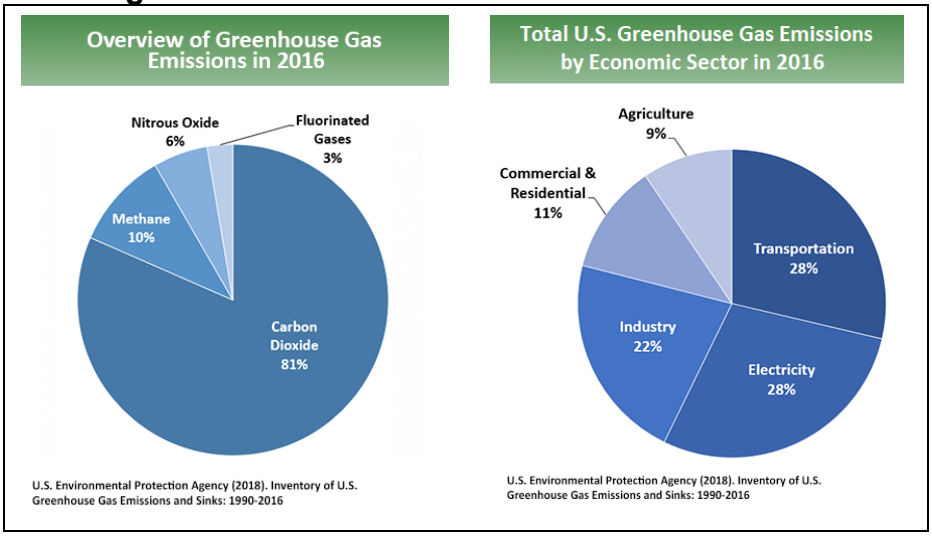
emissions allows countries, states, and smaller jurisdictions to understand how emissions are changing and what actions may be needed to attain emission reduction goals. U.S. EPA is responsible for documenting GHG emissions nationwide, and the ARB does so for the state, as required by H&SC Section 39607.4.

National GHG Inventory

The U.S. EPA prepares a national GHG 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 GHGs in the United States, reporting emissions of CO_2, CH_4, N_2O, HFCs, perfluorocarbons, SF_6, and nitrogen trifluoride. It also accounts for emissions of CO_2 that are removed from the atmosphere by "sinks" such as forests, vegetation, and soils that uptake and store CO_2 (carbon sequestration). The 1990–2016 inventory found that of 6,511 $MMTCO_2e$ GHG emissions in 2016, 81% consist of CO_2, 10% are CH_4, and 6% are N_2O; the balance consists of fluorinated gases (EPA 2018a).[4] In 2016, GHG emissions from the transportation sector accounted for nearly 28.5% of U.S. GHG emissions.

[4] U.S. Environmental Protection Agency. 2018. Inventory of U.S. Greenhouse Gas Emissions and Sinks. https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks

Figure 15: U.S. 2016 Greenhouse Gas Emissions



State GHG Inventory

ARB collects GHG 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 GHG reduction goals. The 2018 edition of the GHG emissions inventory found total California emissions of 429 $MMTCO_2e$ for 2016, with the transportation sector responsible for 41% of total GHGs. It also found that overall statewide GHG emissions have declined from 2000 to 2016 despite growth in population and state economic output.[5]

[5] 2018 Edition of the GHG Emission Inventory (July 2018). https://www.arb.ca.gov/cc/inventory/data/data.htm

Figure 16: California 2016 Greenhouse Gas Emissions

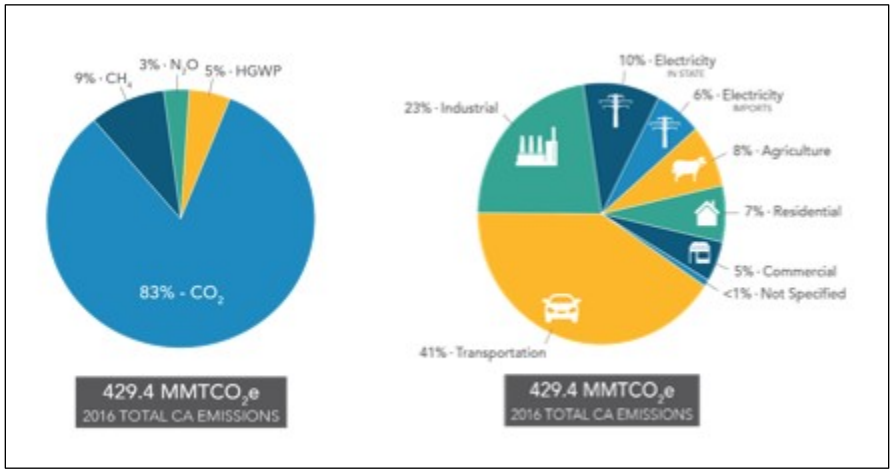
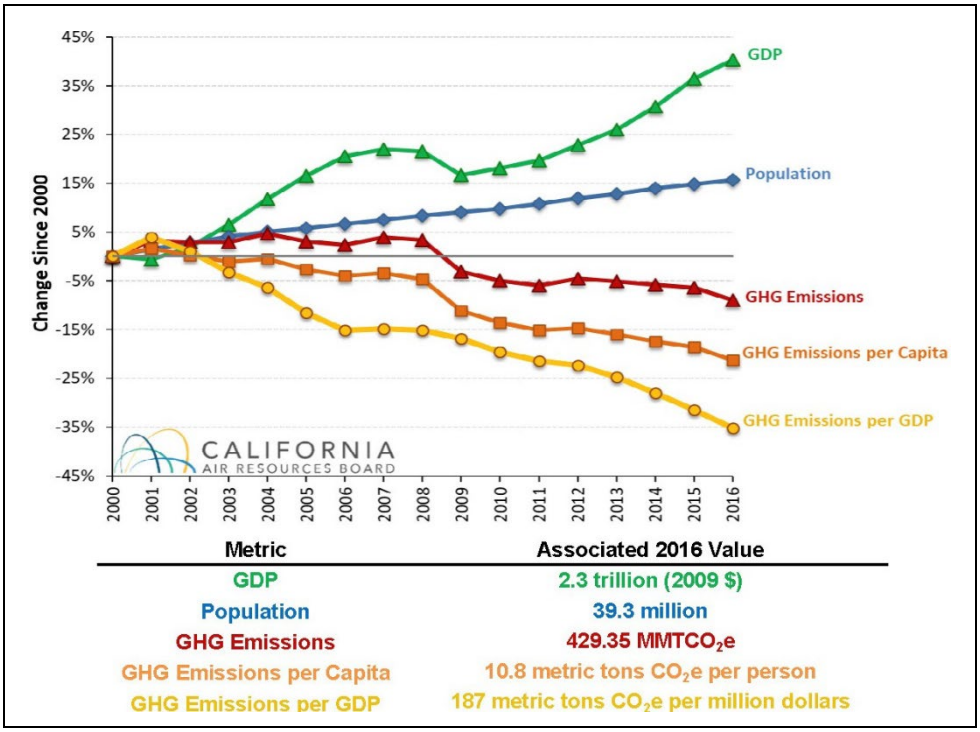


Figure 17: Change In California GDP, Population And GHG Emissions Since 2000



AB 32 required ARB to develop a Scoping Plan that describes the approach California will take to achieve the goal of reducing GHG emissions to 1990 levels by 2020, and to update it every 5 years. ARB 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 EO B-30-15 and SB 32. The AB 32 Scoping Plan and the subsequent updates contain the main strategies California will use to reduce GHG emissions.

Regional Plans

ARB sets regional targets for California's 18 metropolitan planning organizations (MPOs) to use in their Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) to plan future projects that will cumulatively achieve GHG reduction goals. Targets are set at a percent reduction of passenger vehicle GHG emissions per person from 2005 levels. The Sacramento Area Council of Governments (SACOG) is the MPO for the project area. SACOG's 2020 MTP/SCS was adopted on November 18, 2019. As of October 1, 2018, ARB's GHG reduction targets for SACOG are 7% by 2020 and 19% by 2035.

The 2020 MTP/SCS presents overarching policies and supporting implementation actions. Supporting actions relevant for GHG emissions and climate change include: Policy 21: Transportation infrastructure investments should be planned and built in a way that makes the system more resilient to extreme weather events and natural disasters; Policy 22: Invest in bicycle and pedestrian infrastructure to encourage healthy, active transportation trips and provide recreational opportunities for residents and visitors; and Policy 25: Prioritize investments in transportation improvements that reduce greenhouse gas emissions and vehicle miles traveled(SACOG 2019). The proposed project is designated as a planned project in the 2020 MTP/SCS project list.

SACOG is also a partner in the Sacramento Region Blueprint, a regional vision for smart growth adopted in 2004. One Blueprint growth principle is transportation choice, to cut down on vehicle emissions and congestion by encouraging people to walk, bike, or use public transit or carpool to their destinations (SACOG 2020).

Sacramento County also conducted a climate change vulnerability assessment (Sacramento County 2017) as an input to the Sacramento County community-wide climate action plan (CAP), begun in 2016 and still under development. Sacramento County describes the CAP as "envisioned to include strategies that will both (1) reduce greenhouse gas emissions that are causing climate change, and (2) help the community prepare for and adapt to the effects of climate change".

PROJECT ANALYSIS

GHG emissions from transportation projects can be divided into those produced during operation of the SHS and those produced during construction. The primary GHGs produced by the transportation sector are CO_2, CH_4, N_2O, and HFCs. CO_2 emissions are a product of the combustion of petroleum-based products, like gasoline, in internal combustion engines. Relatively small amounts of CH_4 and N_2O are emitted during fuel combustion. In addition, a small amount of HFC emissions are 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 (Pub. Resources Code, § 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

The proposed project is a bridge deck replacement project. The project would not increase capacity and would not change travel demands or traffic patterns when compared to existing conditions and the no-build alternative. Therefore, an increase in operational GHG emissions is not anticipated.

Construction Emissions

Construction GHG emissions would result from material processing, on-site 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.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be offset to some degree by longer intervals between maintenance and rehabilitation activities.

CAL-CET2018 version 1.3 was used to estimate average carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs) emissions from construction activities. Table….. (a, b, c, and d) summarized estimates of GHG emissions during the proposed construction period of 900 working days over 4 construction seasons. The carbon dioxide equivalent (CO_2e) produced during construction is approximately 4,763 metric tons in the alternative 1, 5,781 metric tons in alternative 2, and 6,602 metric tons in alternative 3.

Table 3: Estimates (US tons) of GHG Emissions during Construction

Alternative 1

Construction Year	CO_2 (US tons)	CH_4 (US tons)	N_2O) (US tons)	HFCs (US tons)	CO_2e* (US tons)
2022	598	0.018	0.036	0.019	890.378
2023	928	0.029	0.045	0.030	1,386.135
2024	561	0.018	0.027	0.026	954.296
2025	517	0.016	0.026	0.024	880.348
2026	565	0.015	0.040	0.038	1,139,695
Total	3,168	0.096	0.174	0.137	5,249.852

Alternative 2

Construction Year	CO_2 (US tons)	CH_4 (US tons)	N_2O) (US tons)	HFCs (US tons)	CO_2e* (US tons)
2022	720	0.021	0.043	0.023	1,073.739
2023	1,122	0.035	0.054	0.037	1,686.567
2024	681	0.021	0.033	0.032	1,164.959
2025	628	0.020	0.032	0.029	1,067.236
2026	684	0.019	0.048	0.046	1,379.579
Total	3,385	0.126	0.210	0.167	6,372.330

Alternative 3

Construction Year	CO_2 (US tons)	CH_4 (US tons)	N_2O) (US tons)	HFCs (US tons)	CO_2e* (US tons)
2022	826	0.024	0.050	0.026	1,226.300
2023	1,287	0.040	0.062	0.042	1,982.076
2024	779	0.024	0.038	0.036	1,323.724
2025	717	0.023	0.036	0.033	1,216.703
2026	782	0.021	0.055	0.053	1,583.315
Total	4,390	0.132	0.241	0.190	7,277.118

* A quantity of GHG is expressed as carbon dioxide equivalent (CO_2e) that can be estimated by the sum after multiplying each amount of CO_2, CH_4, N_2O, and HFCs by its global warming potential (GWP). The GWP of CO_2, CH_4, N_2O, and HFCs is 1, 25, 298 and 14,800 respectively.

Implementation of the following measures, some of which may also be required for other purposes such as air pollution control, would reduce GHG emissions resulting from construction activities. Please note that although these measures are anticipated to reduce construction-related emissions, these reductions cannot be quantified at this time.

- The construction contractor must comply with the Caltrans Standard Specifications Section 14-9. Section 14-9.02 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality. Certain common regulations, such as equipment idling restrictions, that reduce construction vehicle emissions also help reduce GHG emissions.

- Compliance with Title 13 of the California Code of Regulations, which includes restricting idling of construction vehicles and equipment to no more than 5 minutes.

- Caltrans Standard Specification 7-1.02C "Emissions Reduction" ensures that construction activities adhere to the most recent emissions reduction regulations mandated by the California Air Resource Board.

- Utilize a traffic management plan to minimize vehicle delays and idling emissions.

- Construction traffic would be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.

CEQA CONCLUSION

While the proposed project will result in GHG emissions during construction, it is anticipated that the project will not result in any increase in operational GHG 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 GHG-reduction measures, the impact would be less than significant.

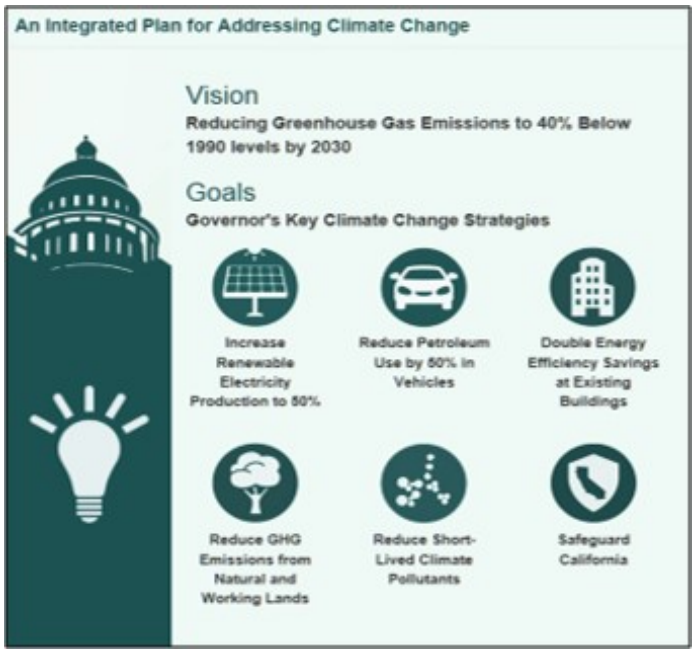
Caltrans is firmly committed to implementing measures to help reduce GHG emissions. These measures are outlined in the following section.

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 GHG emissions targets. Former Governor Edmund G. Brown promoted GHG 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*.

Figure 18: California Climate Strategy



The transportation sector is integral to the people and economy of California. To achieve GHG 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. GHG emission reductions will come from cleaner vehicle technologies, lower-carbon fuels, and reduction of vehicle miles traveled (VMT). A key state goal for reducing GHG emissions is to reduce today's petroleum use in cars and trucks by up to 50 percent by 2030.

In addition, SB 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- and below-ground matter.

Caltrans Activities

Caltrans continues to be involved on the Governor's Climate Action Team as the ARB works to implement EOs S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. EO B-30-15, issued in April 2015, and SB 32 (2016), set an interim target to cut GHG 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 (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce GHG emissions. In 2016, Caltrans completed the *California Transportation Plan 2040*, which establishes a new model for developing ground

transportation systems, consistent with CO_2 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.

SB 391 (Liu 2009) requires the CTP to meet California's climate change goals under AB 32. Accordingly, the CTP 2040 identifies the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the state's transportation needs. While MPOs have primary responsibility for identifying land use patterns to help reduce GHG emissions, CTP 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 GHG emissions, among other goals. Specific performance targets in the plan that will help to reduce GHG emissions include:

- Increasing percentage of non-auto mode share
- Reducing VMT
- Reducing Caltrans' internal operational (buildings, facilities, and fuel) GHG emissions

FUNDING AND TECHNICAL ASSISTANCE PROGRAMS

In addition to developing plans and performance targets to reduce GHG 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 RTP/SCS; contribute to the State's GHG reduction targets and advance transportation-related GHG 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 (DP-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 GHG emissions resulting from agency operations.

Project-Level GHG Reduction Strategies

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

- The construction contractor must comply with the Caltrans Standard Specifications Section 14-9. Section 14-9.02 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality. Certain common regulations, such as equipment idling restrictions, that reduce construction vehicle emissions also help reduce GHG emissions.

- Compliance with Title 13 of the California Code of Regulations, which includes restricting idling of construction vehicles and equipment to no more than 5 minutes.

- Caltrans Standard Specification 7-1.02C "Emissions Reduction" ensures that construction activities adhere to the most recent emissions reduction regulations mandated by the California Air Resource Board.

- Utilize a traffic management plan to minimize vehicle delays and idling emissions.

- Construction traffic would be scheduled and routed to reduce congestion and related GHG emissions caused by idling vehicles along local roads during peak travel times.

ADAPTATION

Reducing GHG 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 FHWA NEPA regulations, policies, and guidance.

The U.S. Global Change Research Program (USGRCP) delivers a report to Congress and the president every 4 years, in accordance with the Global Change Research Act of 1990 (15 U.S.C. ch. 56A § 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."

U.S. DOT 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 DOT 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."[6]

FHWA order 5520 (*Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events,* December 15, 2014)[7] established FHWA policy to strive to identify the risks of climate change and extreme weather events to current and planned transportation systems. FHWA has developed guidance and tools for transportation planning that foster resilience to climate effects and sustainability at the federal, state, and local levels.[8]

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 latest 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

6 https://www.fhwa.dot.gov/environment/sustainability/resilience/policy_and_guidance/usdot.cfm
7 https://www.fhwa.dot.gov/legsregs/directives/orders/5520.cfm
8 https://www.fhwa.dot.gov/environment/sustainability/resilience/

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.

EO 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.

EO 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 (SLR) 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.[9]

EO B-30-15, signed in April 2015, requires state agencies to factor climate change into all planning and investment decisions. This EO recognizes that effects of climate change other than sea-level rise also threaten California's infrastructure. At the direction of EO 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.

[9] http://www.opc.ca.gov/updating-californias-sea-level-rise-guidance/

AB 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

SEA-LEVEL RISE

There are two potential sea-level rise scenarios to consider and discuss.

The proposed project is outside the coastal zone, but the American River is a tributary to the Sacramento-San Joaquin River Delta just south of the project vicinity. Areas of the Delta are potentially subject to impacts of sea-level rise. The Caltrans District 3 Climate Vulnerability

Assessment (Caltrans 2019[10]) analyzed risk of inundation from sea-level rise in the Delta under a variety of scenarios. The project location is outside areas found to be at risk of inundation even if levees or other barriers were to fail during a 100-year storm event. Accordingly, direct impacts to transportation facilities due to projected sea-level rise are not expected.

FLOODPLAINS

Precipitation can affect transportation assets in a variety of ways, such as inundation, washouts, or structural damage from heavy rain. Climate change is expected to bring fewer but more intense rainfall events in California. To help understand future flood risks to California infrastructure, Caltrans analyzed changes in 100-year storm precipitation depth, which is one of the design criteria considered in bridge and culvert design. The vulnerability assessments for each district mapped these changes for 2025, 2055, and 2085 for a high-emissions scenario. The District 3 Climate Vulnerability Assessment maps show the project location could experience up to 9.9% increase in 100-year storm precipitation depth through 2085 (Caltrans 2019).

The project's location hydraulics study concluded that the proposed project would partially encroach on the 100-year floodplain of the American River, but near areas of reduced flood risk due to a levee or with 1% chance of annual flood with average depth of less than 1 foot. The floodplain encroachment impact was considered less than significant. Building the project would increase the amount of impervious surface area, which would increase the amount of runoff water. Post-construction stormwater treatment controls would address both the decrease in infiltration to groundwater that seeps into surface waters and the runoff from impervious surfaces that discharges into nearby waters. Treatment controls would include types that infiltrate, harvest, reuse, and allow the evapotranspiration of stormwater runoff. Accordingly, it is not anticipated that the amount of runoff water created would exceed the capacities of the planned stormwater system.

WILDFIRE

The proposed project is in a built-up commercial and suburban setting. The California Department of Forestry and Fire Protection Fire Hazard Severity Zone mapping shows it to be an area of moderate wildfire risk. Similarly, mapping of wildfire risk and exposed roadway in the District 3 Climate Vulnerability Assessment shows the project area is not in an area of wildfire concern. The construction contract will include standard specifications for fire prevention to avoid causing fire during construction.

[10] California Department of Transportation. 2019. Caltrans Climate Change Vulnerability Assessments. District 3 Technical Report. July. Prepared by WSP.

Section 5 List of Preparers

The following Caltrans staff contributed to the preparation of this Initial Study.

Rajpreet Bihala, Environmental Planner. Contribution: Document Peer Reviewer.

Youngil Cho, Transportation Engineer. Contribution: Air Quality Impact Assessment and Energy Analysis.

Sean Cross, Transportation Engineer. Contribution: Water Quality Assessment Report.

Mundeep Purewal, Supervising Environmental Planner. Contribution: Environmental Branch Chief.

Jonathan Edwards, Environmental Planner (Natural Sciences). Contribution: Natural Environment Study.

Mike Bartlett, Supervising Environmental Planner. Contribution: Environmental Office Chief.

Andrew Huang, Transportation Engineer. Contribution: Project Design.

Cephas Hurr, Transportation Engineer. Contribution: Floodplain Evaluation Summary Report.

Alamjit Mangat, Associate Environmental Planner. Contribution: Initial Site Assessment for Hazardous Waste.

Clark Peri, Project Manager. Contribution: Project Management.

Sandeep Sandhu, Environmental Planner (Project Coordinator). Contribution: Project Coordinator and Document Preparer.

Jennifer White, Landscape Architect. Contribution: Visual Impact Assessment.

Erick Wulf, Associate Environmental Planner (Architectural History). Contribution: Cultural Resource Compliance Memo.

Saeid Zandian, Transportation Engineer. Contribution: Traffic Noise Analysis.

Appendix A – Section 4(f) Study

Introduction

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 USC 237 and the Memorandum of Understanding dated December 23, 2016 and executed by FHWA and Caltrans.

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 United States Code (USC) 303, declares that "it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites."

Section 4(f) specifies that the Secretary [of Transportation] may approve a transportation program or project . . . requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of an 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 consultation 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 (SHPO) is also needed.

This section discusses *de minimis* impact determinations under Section 4(f). Section 6009(a) of SAFETEA-LU amended Section 4(f) legislation at 23 United States Code (USC) 138 and 49 USC 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 (USDOT) 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. FHWA's final rule on Section 4(f) *de minimis* findings is codified in 23 Code of Federal Regulations (CFR) 774.3 and CFR 774.17.

Responsibility for compliance with Section 4(f) has been assigned to the California Department of Transportation (Caltrans) pursuant to 23 USC 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.

Project Description

Caltrans proposes to rehabilitate the American River Bridge along State Route 51 in Sacramento County from post mile 2.0 to 3.5. The project would remove and replace the existing concrete deck, remove and replace the steel girder post-tensioning systems in spans 1 and 2, install sheet piling around piers for scour mitigation, construct concrete catcher blocks, and widen the bridge superstructure permanently to accommodate traffic during construction. The project would also widen the bridge superstructure to add a Class I bike/pedestrian path and widen the bridge substructure to accommodate any future widening of State Route 51.

Section 4(f) Properties

American River Parkway

The American River Parkway is an open space greenbelt which extends approximately 29 miles from the Folsom Dam at the northeast to the American River's convergence with the Sacramento River at the southwest. According to the American River Parkway Plan, the American River Parkway is a unique regional facility which shall be managed to balance the goals of: a) preserving naturalistic open space and protecting environmental quality within the urban environment, and b) contributing to the provision of recreational opportunities in the Sacramento area.

Several portions of the Parkway are owned and/or managed by State and Federal land managers. For the purposes of this Section 4(f) Study, we will focus on the California Exposition and State Fair (Cal Expo) portion of the American River Parkway since that is the area the proposed project will be impacting. Cal Expo owns this 408-acre portion of the Parkway located northside of the American River, between the Southern Pacific Railroad tracks to the west and the extension of Ethan Way and the American River to the east. The Cal Expo portion of the Parkway is popular for nature viewing, bicycling, equestrian use, hiking, picnicking, and informal access to the river. This portion of the Parkway is managed by Sacramento County Department of Regional Parks through an agreement with Cal Expo and consistent with the American River Parkway Plan and the Bushy Lake Preservation Act.

The Bushy Lake Preservation Act designates Bushy Lake and its surroundings as a Natural Preserve, "in order to preserve such features as rare or endangered plant and animal species and their supporting ecosystems, and representative examples of plant and animal communities existing in California prior to the impact of civilization." Bushy Lake is a body of water that his historically varied in size between 11 acres and 80 acres, depending upon rainfall, water pumping, and water table conditions. Over the years, the man-made lake has undergone a gradual succession of ecological change to become a substantial community of riparian and

mash vegetation with associated wildlife, consistent with the purpose and intent of the Bushy Lake Preservation Act.

Description of the Use

The project would close off part of the Cal Expo portion of the American River Parkway year-round during construction. This closure would impact the bike trail near and underneath the American River Bridge. Bicyclists and pedestrian will be re-routed to the top of the levee. There, they could use that route and continue east until the road connects back to bike trail outside of Caltrans' working zone. Signs will be placed to alert bicyclists and pedestrians of the detour routes. A portion of the bike path will also be permanently re-routed due to the construction of the project. This portion is currently in conflict with the widening of the bridge substructure and will need to be re-routed approximately 40' to the west.

Bushy Lake would be impacted by the construction of temporary fill to move equipment from the Cal Expo parking lot to the bridge area. However, these impacts will be very minor and temporary. Approximately 0.27 acres out of the 80-acre Bushy Lake limits will be temporarily impacted.

Construction activities will likely occur in three seasons. All substructure work will be completed in the first two seasons while the third season would consist of superstructure work. Construction at in-water piers 3 - 8 will likely be completed in Fall of 2022. The remaining out-of-water piers 9 - 10 and Bents 12 - 25 construction will be completed in Fall of 2023. Work on the bridge deck will be completed in 2024. It will take approximately 700 days to complete construction. In-water work at piers 3 - 8 will occur from June 1 – October 15, when sensitive fish species are less likely to be present. The construction sequence is an approximation of the construction scenario and the contractor may choose an alternative construction sequence.

Section 4(f) De Minimis Finding/Why De Minimis?

Although the project would use and temporality close portions of the Cal Expo American River Parkway, the impacts would be minor and would qualify as a *de minimis* impact. No recreational features within the park would be permanently affected. The small portion of the bike path permanently re-routed 40' to the west will not have an impact to the features of the park. Also, impacts to Bushy Lake will be temporary and very minimal. This does not qualify for the temporary occupancy exemption because Caltrans cannot maintain continual public access to some features of the park such as portions of the bike trail.

The Cal Expo Area of the American River Parkway consists of approximately 408 acres. A Section 4(f) *de minimis* determination is appropriate approval because there will be no right of way acquisitions and only some of the area will be temporarily used. Even though part of the bike trail will be temporarily closed, the bikers will be rerouted to the top of the levee and the levee road will connect back to the bike trail as you travel further east. There will not be any

adverse effects to the park features, attributes, or activities. The project has been designed to ensure that no permanent impacts to the park and its recreational facilities would occur.

Coordination/Public Notice Process

A field review was conducted with Cal Expo and Sacramento County Parks on February 21, 2020. This field review was conducted to inform Cal Expo and Sacramento County Parks that Caltrans would use part of the American River Parkway during construction. Mary Maret (Natural Resource Specialist - Sacramento County Parks), James Mitts (Park Maintenance Worker - Sacramento County Parks), Elcid Nieto (Park Maintenance Supervisor - Sacramento County Parks), and Marcia Shell (Assistant General Manager - Cal Expo) attended this meeting as all relevant staff members walked the project site and discussed the proposed project. It was determined that Caltrans would complete a Section 4(f) Study and send the study to Sacramento County Parks and Cal Expo for review/comment. The final signature would come from Cal Expo since they are the owner of the property.

In compliance with the National Environmental Policy Act (NEPA), the public will have from June 10, 2020 through July 9, 2020 to comment on Caltrans' intent to make a *de minimis* impact finding. All comments and responses will be considered and documented in the record for the proposed project. Caltrans will request concurrence from Cal Expo on the *de minimis* finding under Section 4(f) after an opportunity for public review and comment concerning the effects of the project has occurred.

Avoidance, Minimization, and/or Mitigation Measures

- Early coordination with the official with jurisdiction to consider their input and make design adjustments where feasible was completed with Mary Maret (Natural Resource Specialist - Sacramento County Parks), James Mitts (Park Maintenance Worker - Sacramento County Parks), Elcid Nieto (Park Maintenance Supervisor - Sacramento County Parks), Rick Pickering (Chief Executive Office - Cal Expo), and Marcia Shell (Assistant General Manager - Cal Expo).

- The least amount of park property will be used for the proposed project.

- Avoidance of key portions of park property was done so that key attributes, features, or activities were not affected.

Figure 19: American River Parkway - Cal Expo Detour Exhibit 1

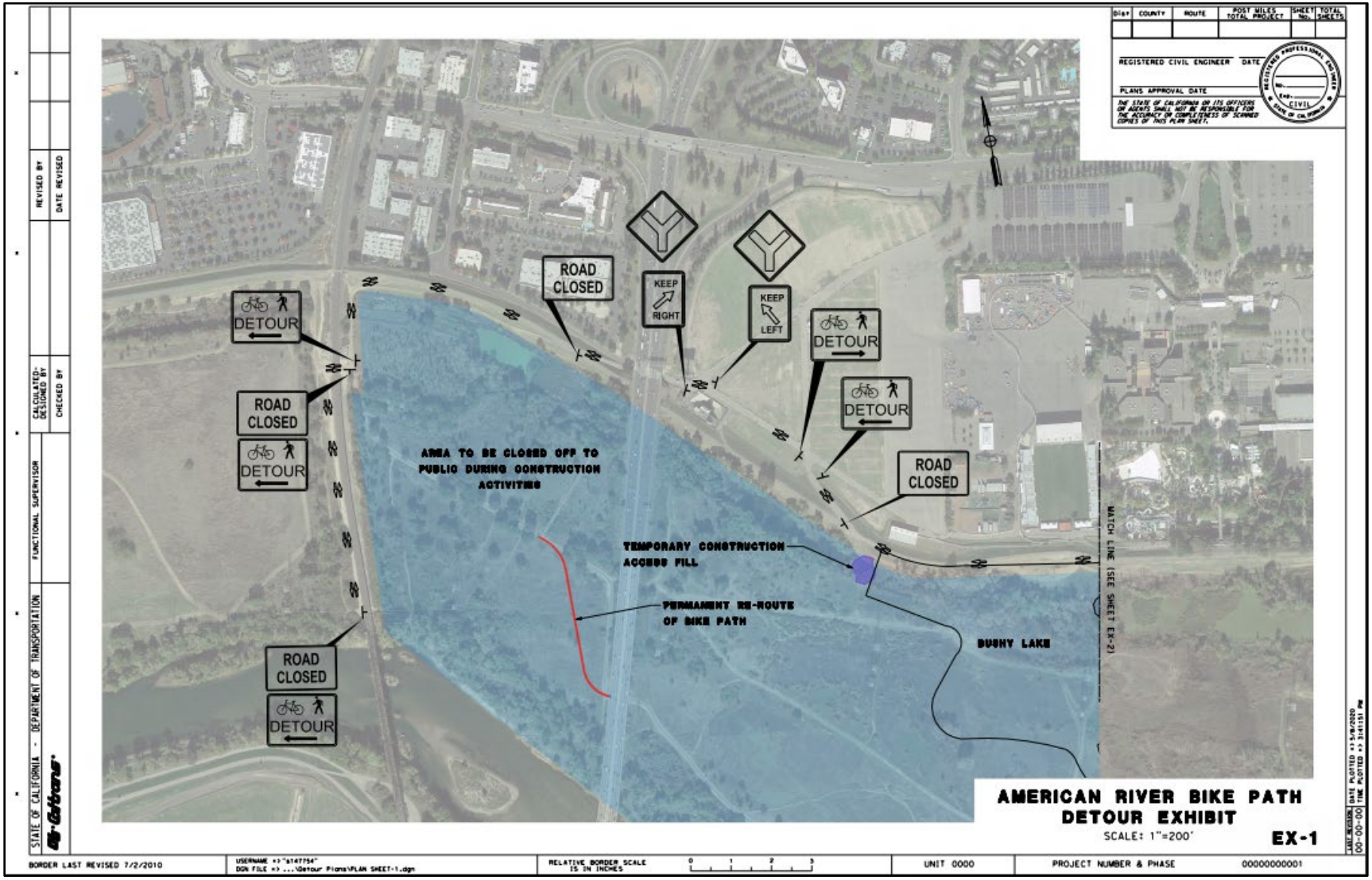


Figure 20: American River Parkway – Cal Expo Detour Exhibit 2