American River Bridge Deck Replacement

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

Initial Study with Mitigated Negative Declaration

Prepared by the
State of California, Department of Transportation

February 2021

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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: 2020100388

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 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.

Mike Bartlett

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

02/16/2021
Date

Table of Contents

Table of Figures

Section 1 Proposed Project

Project Title

American River Bridge Deck Replacement

Lead Agency Name and Address

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Marysville, CA 95901

Contact Person and Phone Number

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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:

<u>Alternative 1:</u>

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. The bike/pedestrian path will extend from levee to levee. Portions of the path outside of the bridge limits are anticipated to be funded with 2020 SHOPP Complete Streets Reservation funds.
- 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
- Install Overhead Sign
- 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).
- Upgrade existing metal beam guardrail to Midwest Guardrail System.
- 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.
- Construct retaining walls between American River Bridge and Cal Expo Undercrossing.
- Remove vegetation and trees to accommodate widening of SR 51 (CapCity) for bridge deck construction staging.
- Modify Exposition Blvd. Northbound Off-Ramp.
- 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 to accommodate the future widening of SR 51.
- Alternatives 2 is contingent on obtaining additional construction capital funding (SHOPP & 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 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

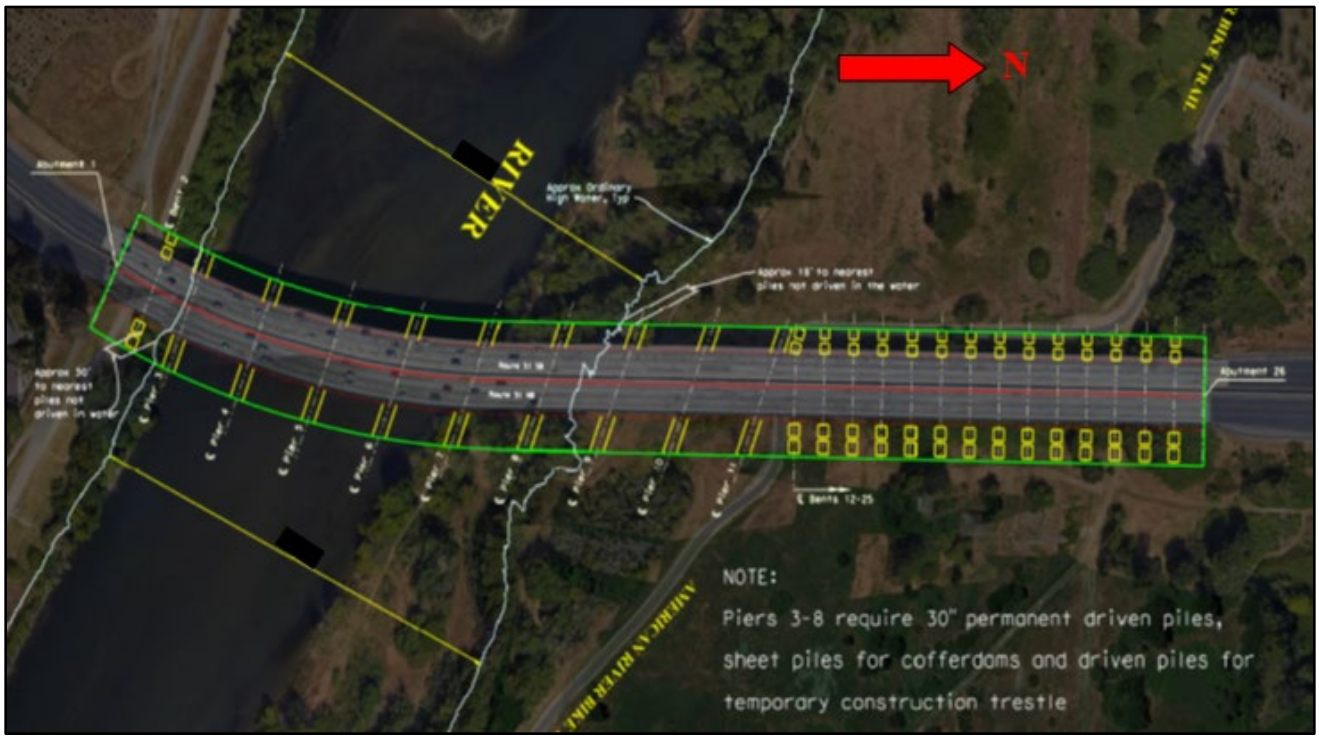
Alternative 4 - No Build:

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

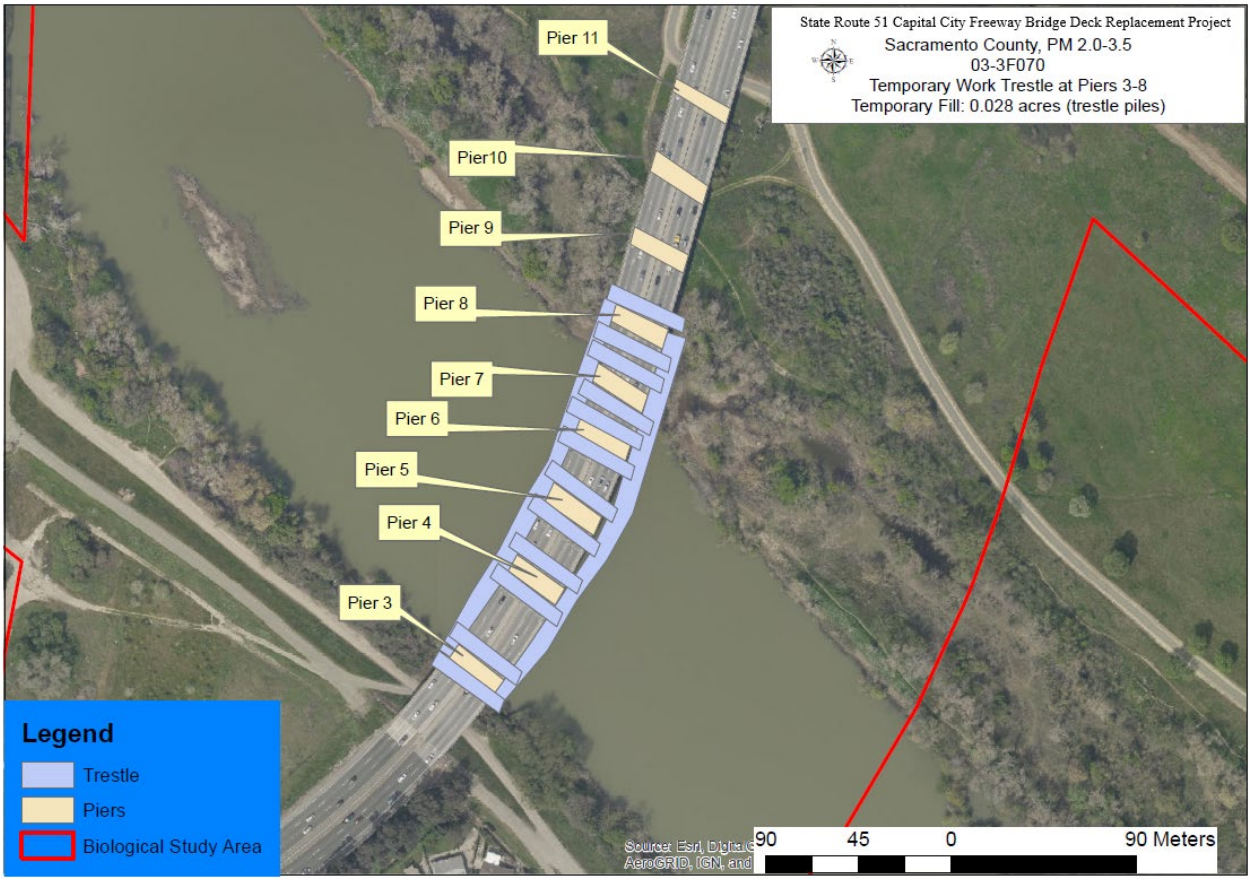


In-Water Piers 3-8 Construction Activities:

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

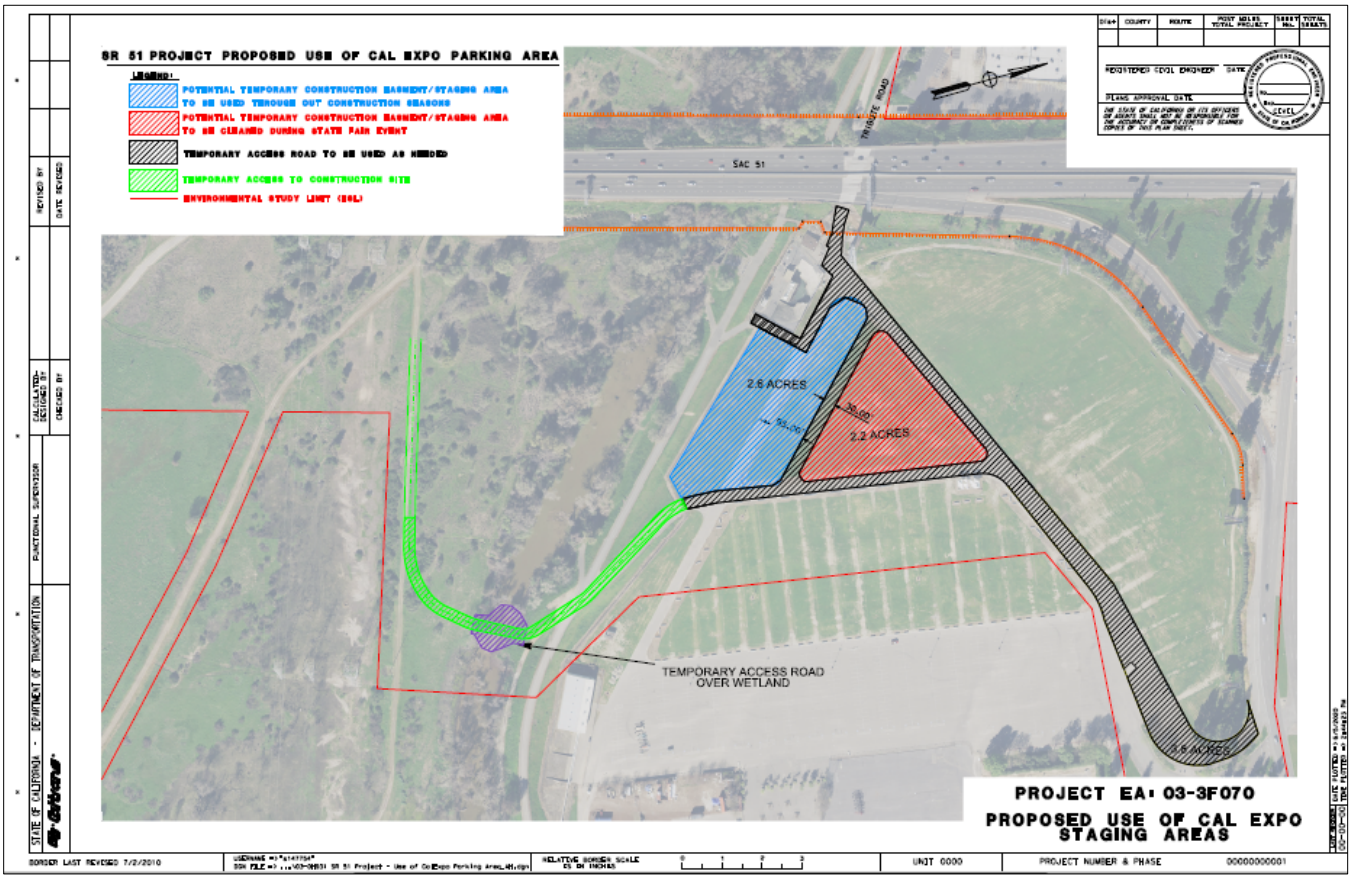
Some of the water in the cofferdam will come in contact with uncured concrete and will have a higher pH. This water will be treated with acid to balance the pH prior to reaching the dewatering basins.

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

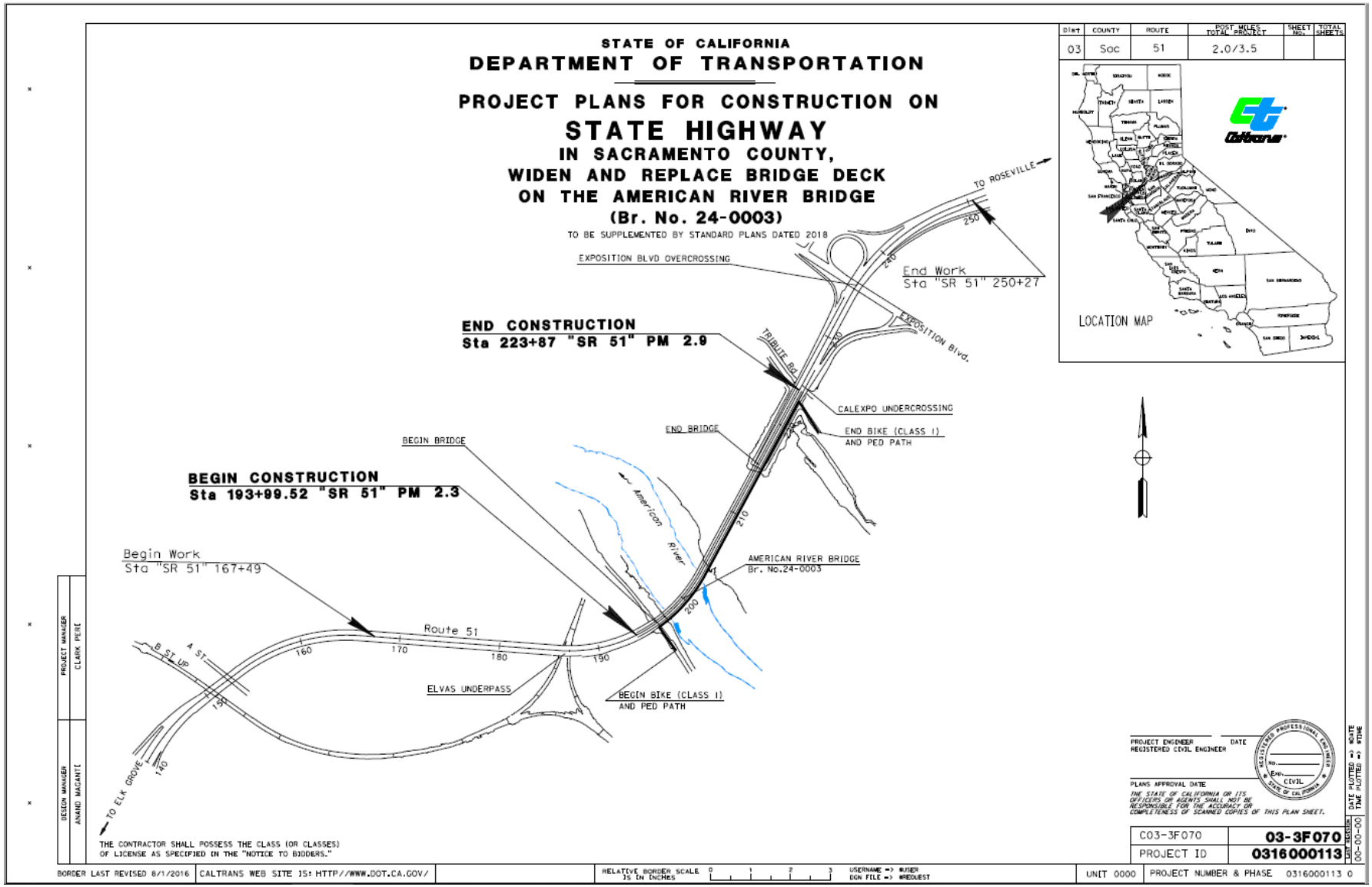


Figure 5: Environmental Study Limits Map

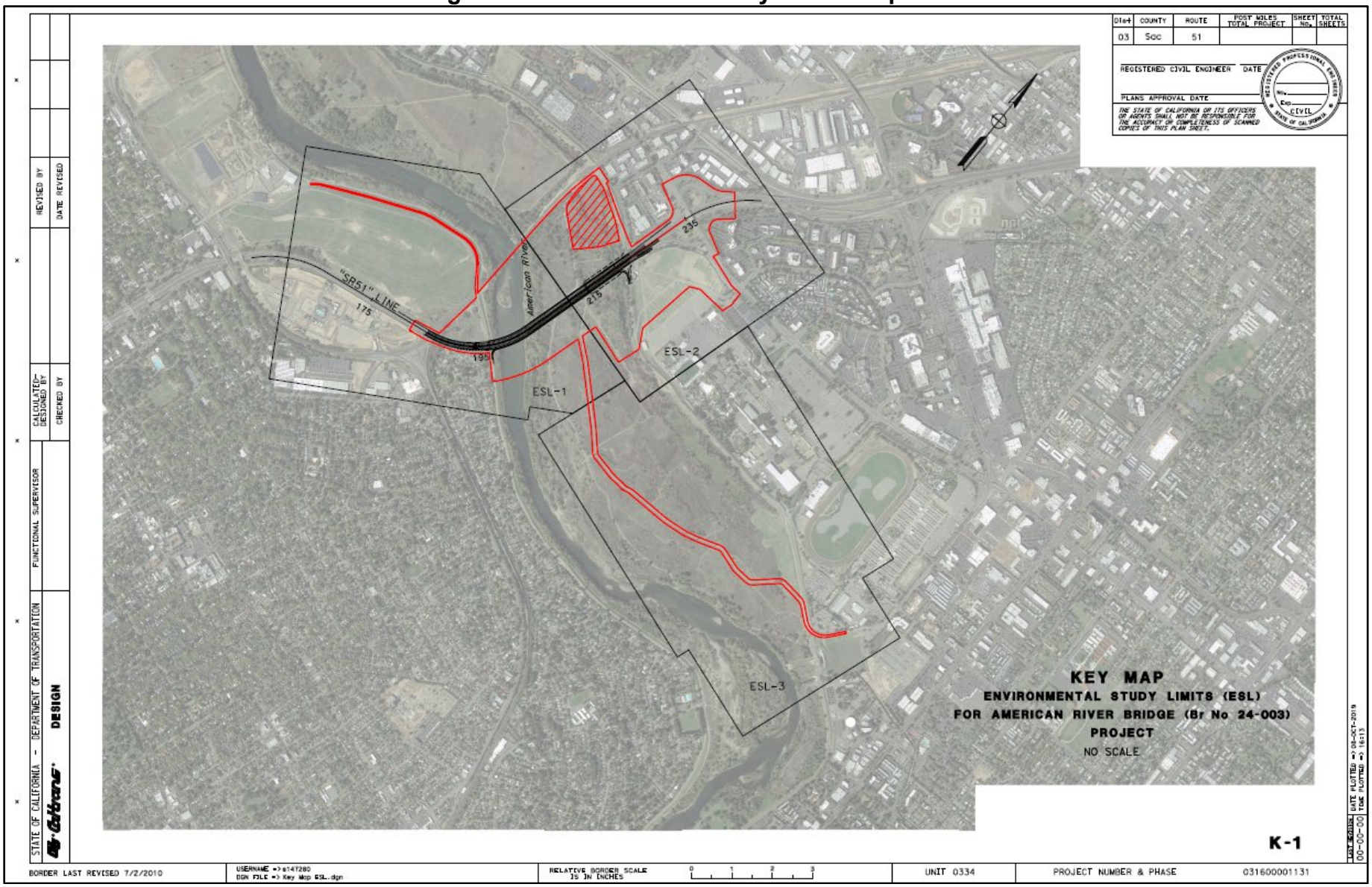


Figure 6: Layout Sheet 1

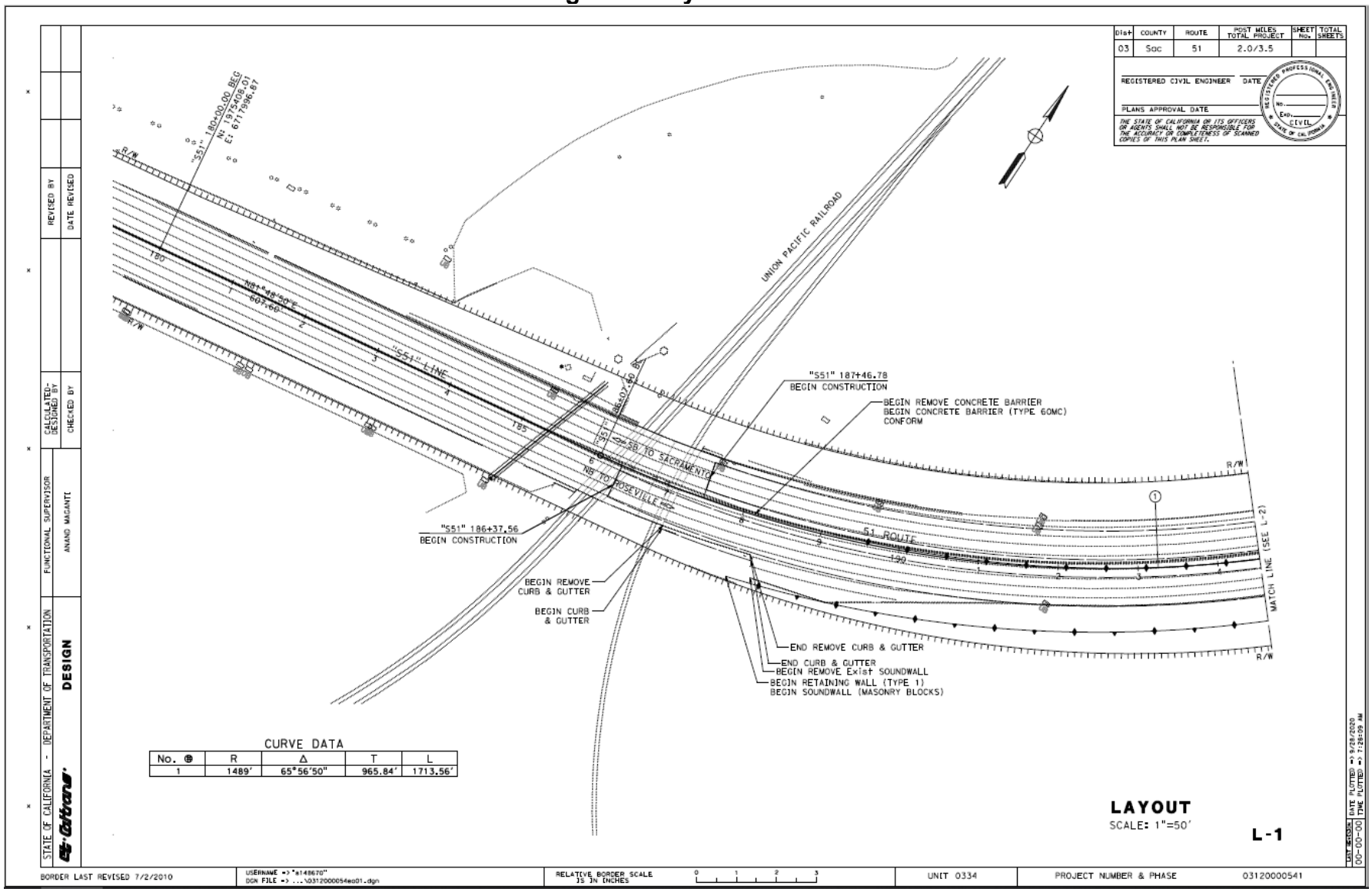


Figure 7: Layout Sheet 2

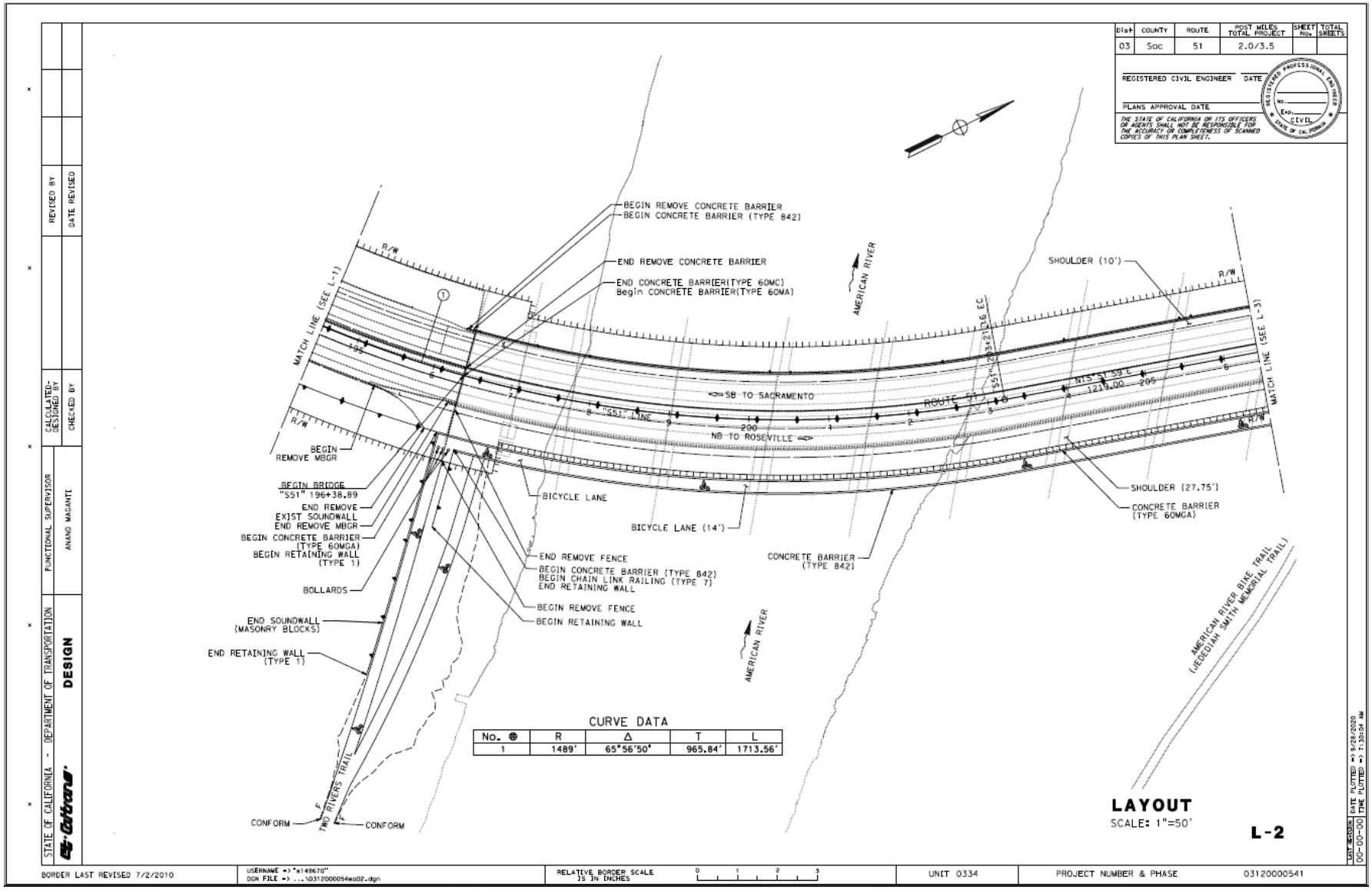


Figure 8: Layout Sheet 3

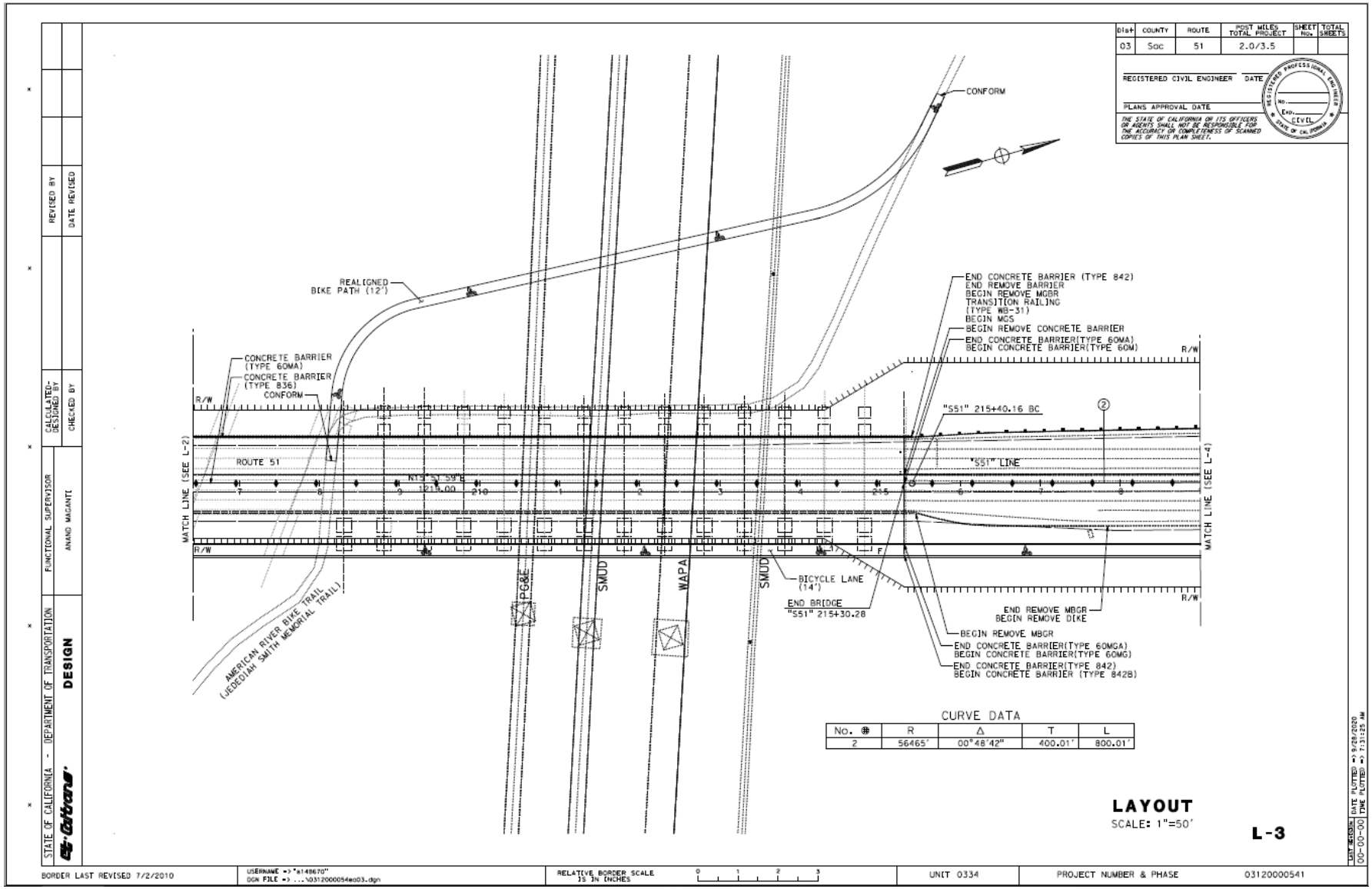


Figure 9: Layout Sheet 4

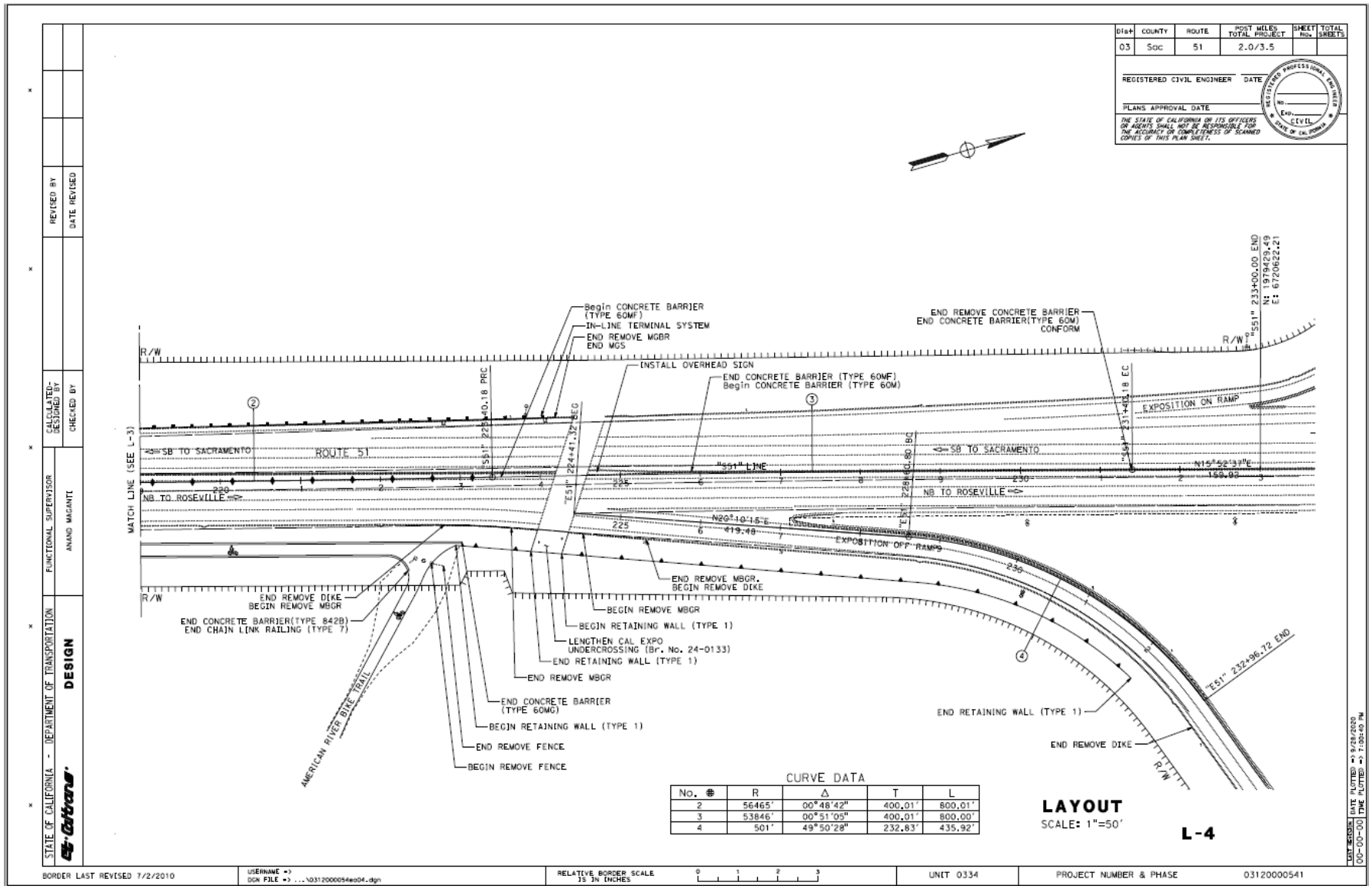


Figure 10: Alternatives Map

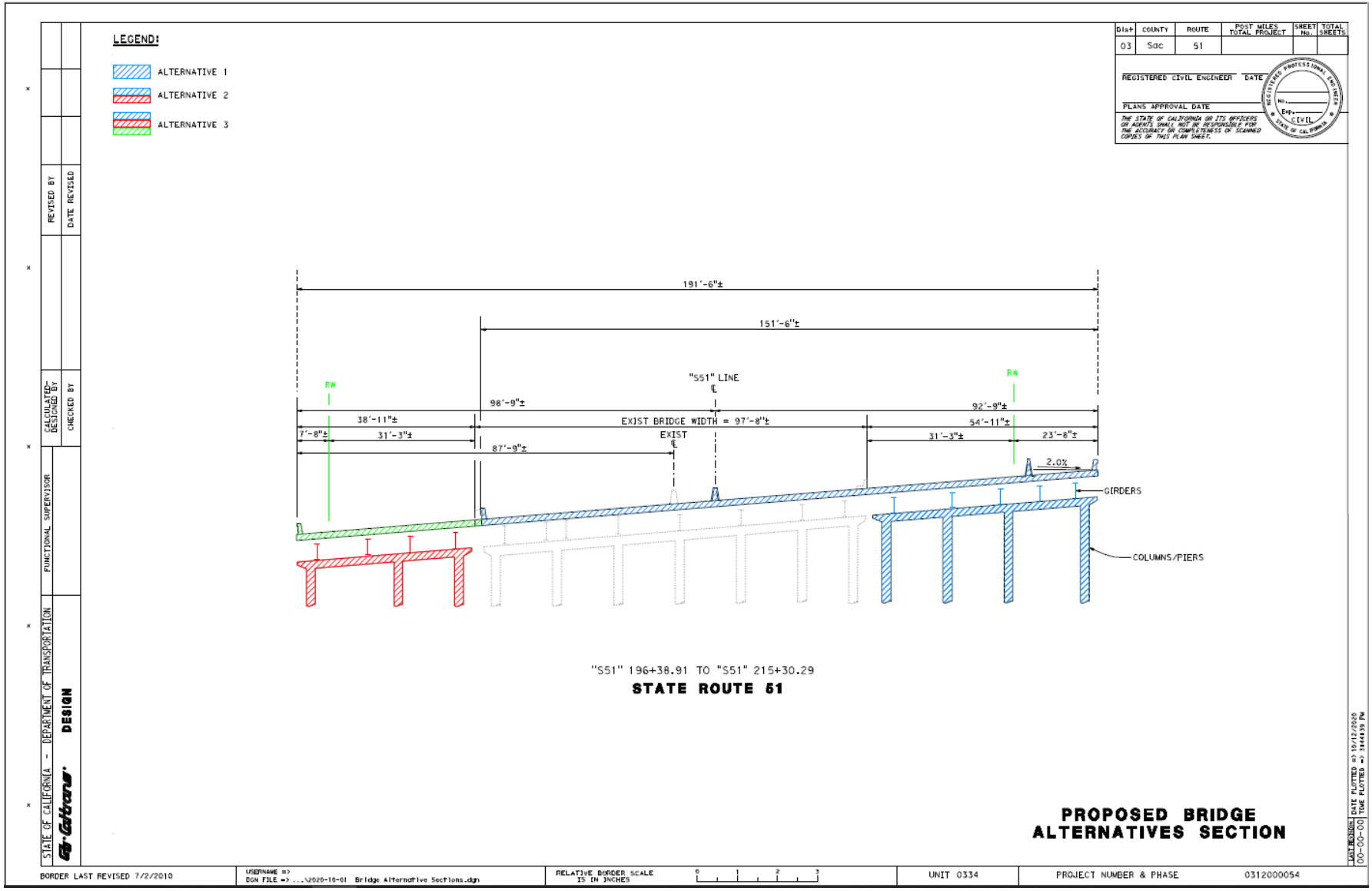
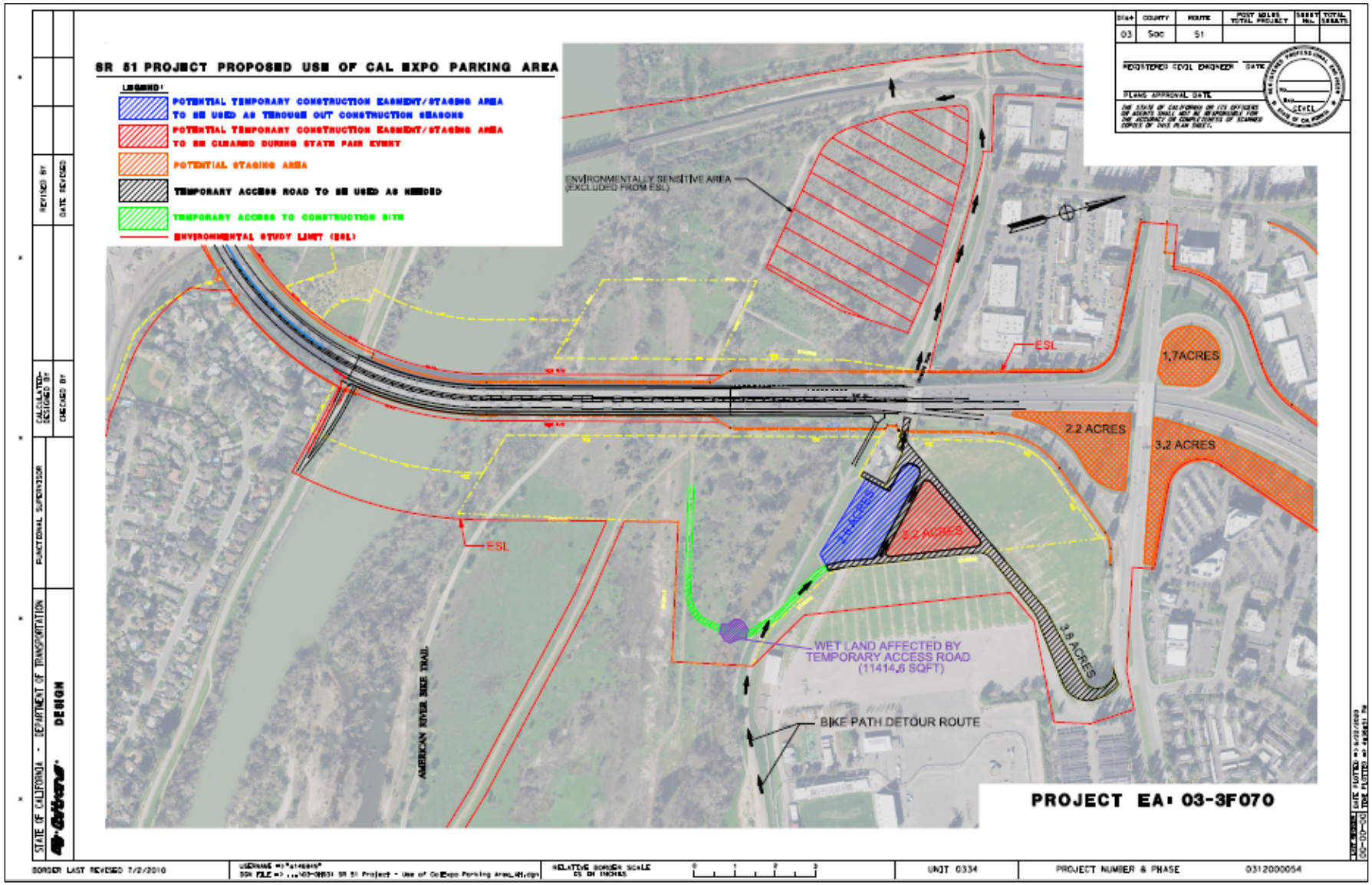


Figure 11: Staging Map



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 VIIII.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.

The Title to all abandoned shipwrecks, archaeological sites, and historic or cultural resources on or in the tide and submerged lands of California is vested in the state and under the jurisdiction of the State Lands Commission (PRC 6313). The final disposition of archaeological, historical, and paleontological resources recovered on state lands under the jurisdiction of the California State Lands Commission must be approved by the Commission.

It is Caltrans policy to avoid cultural resources whenever possible. In addition, if cultural materials (e.g., bones, stone implements, old bottles, etc.) are encountered during the project construction, Caltrans policy requires that all work in the area (within a 60 meter [200 feet] radius) must immediately halt until a qualified archaeologist can evaluate the nature and significance of the material and determine an appropriate course of action in consultation with the State Historic Preservation Office (Stipulation XV, Post Review Discoveries, Section B.1-3 in the Section 106 PA) and other agencies as required. <u>No pre-construction, construction, or post construction activities will occur outside the area that has been surveyed for archaeological resources. This includes staging, storage, and parking of equipment</u>.

If human remains are discovered or recognized during construction, there shall be no further excavation or disturbance of the location (within a 60 meter [200 feet] radius), or any nearby area reasonably suspected to overlie adjacent remains, until a qualified archaeologist has contacted the appropriate county coroner and they have determined that the remains are not subject to provisions of Section 27491 of the Government Code. If the coroner determines the remains to be Native American, they shall contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC will appoint a Most Likely Descendent for disposition of the remains (Health and Safety Code Sect. 7050.5 and 7052, Public Resources Code Sect. 5097.9 to 5097.99).

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.

The Title to all tribal cultural resources, archaeological sites, and historic or cultural resources on or in the tide and submerged lands of California is vested in the state and under the jurisdiction of the State Lands Commission (PRC 6313). The final disposition of tribal, archaeological, historical, and paleontological resources recovered on state lands under the jurisdiction of the California State Lands Commission must be approved by the Commission.

It is Caltrans policy to avoid cultural resources whenever possible. In addition, if cultural materials (e.g., bones, stone implements, old bottles, etc.) are encountered during the project construction, Caltrans policy requires that all work in the area (within a 60 meter [200 feet] radius) must immediately halt until a qualified archaeologist can evaluate the nature and significance of the material and determine an appropriate course of action in consultation with the State Historic Preservation Office (Stipulation XV, Post Review Discoveries, Section B.1-3 in the Section 106 PA) and other agencies as required. No pre-construction, construction, or post construction activities will occur outside the area that has been surveyed for archaeological resources. This includes staging, storage, and parking of equipment.

If human remains are discovered or recognized during construction, there shall be no further excavation or disturbance of the location (within a 60 meter [200 feet] radius), or any nearby area reasonably suspected to overlie adjacent remains, until a qualified archaeologist has contacted the appropriate county coroner and they have determined that the remains are not subject to provisions of Section 27491 of the Government Code. If the coroner determines the remains to be Native American, they shall contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC will appoint a Most Likely Descendent for disposition of the remains (Health and Safety Code Sect. 7050.5 and 7052, Public Resources Code Sect. 5097.9 to 5097.99).

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.

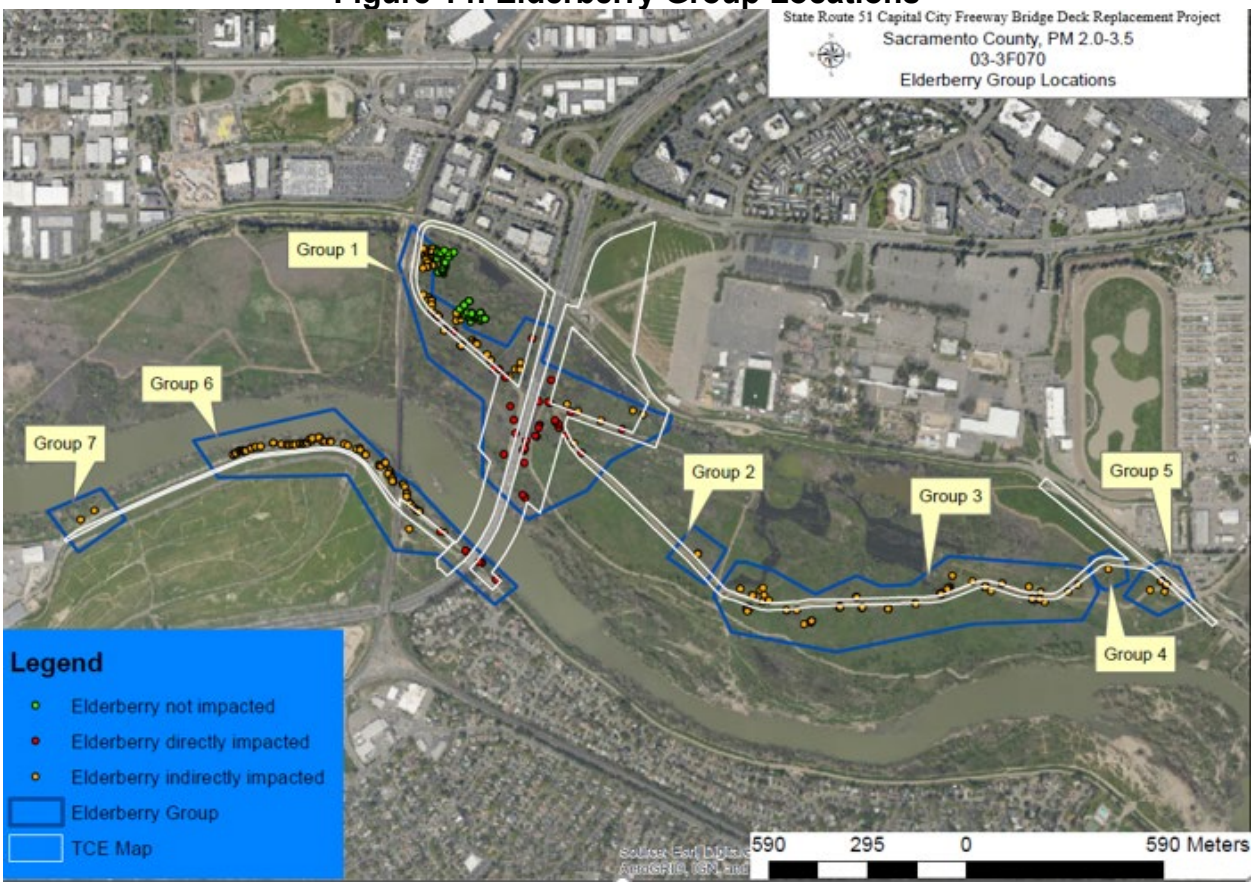
- Protocol level surveys will be conducted to establish a *no take* determination for Swainson's Hawk. This will use the "Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley" written by the Swainson's Hawk Technical Advisory Committee dated May 31, 2000. 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

<u>Swainson's Hawk</u>

No mitigation measures are proposed for Swainson's Hawk.

<u>Valley Elderberry Longhorn Beetle</u>

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

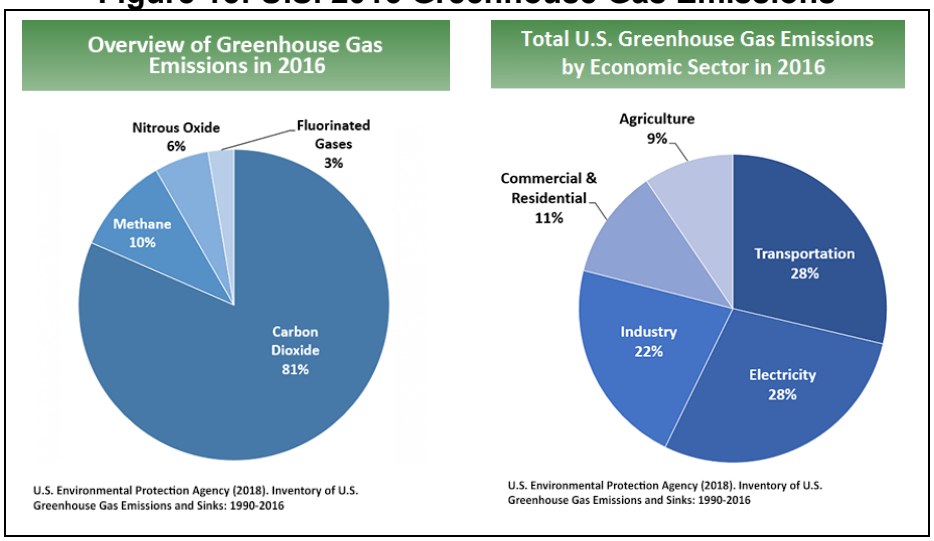
emissions allows countries, states, and smaller jurisdictions to understand how emissions are changing and what actions may be needed to attain emission reduction goals. U.S. EPA is responsible for documenting GHG emissions nationwide, and the ARB does so for the state, as required by H&SC Section 39607.4.

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

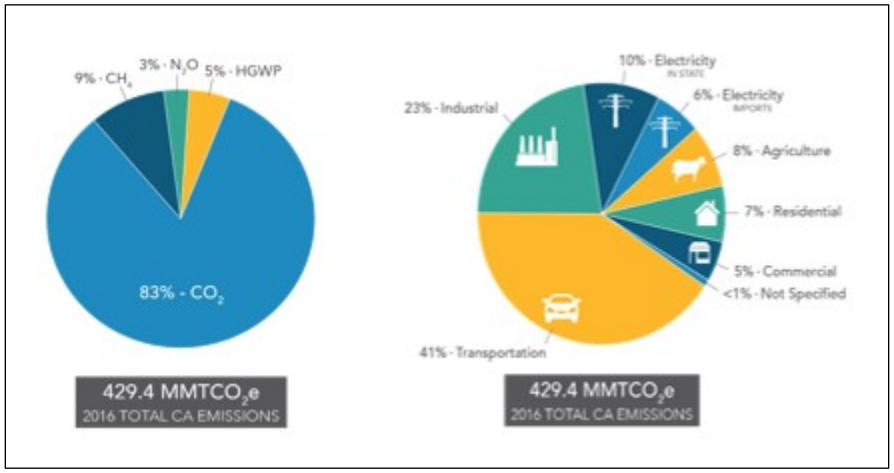
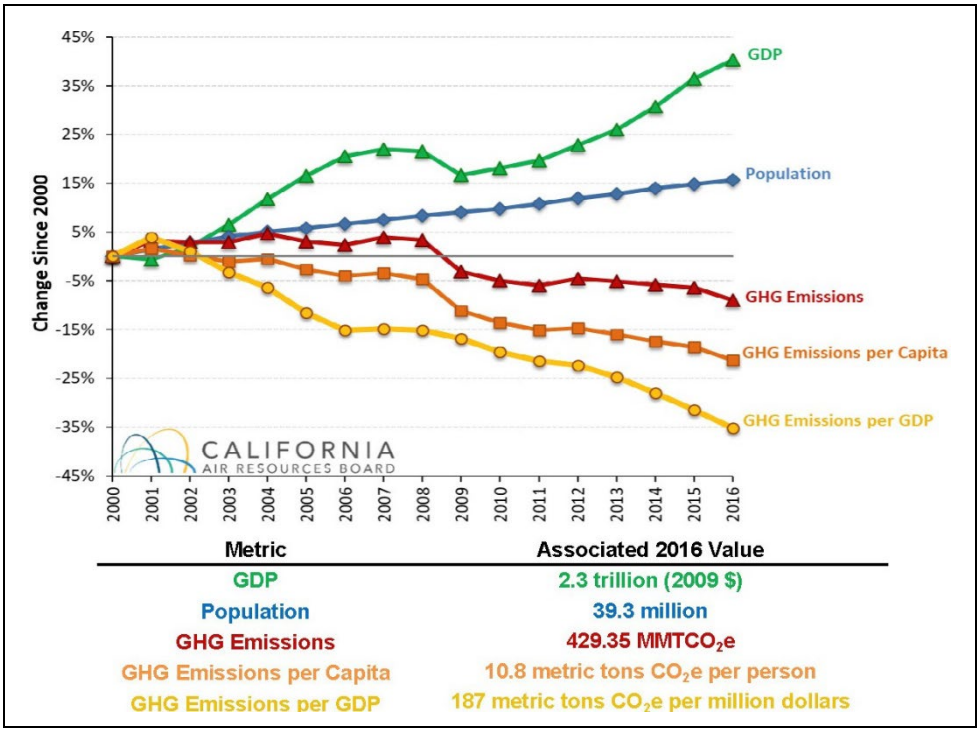


Figure 17: Change In California GDP, Population And GHG Emissions Since 2000



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.

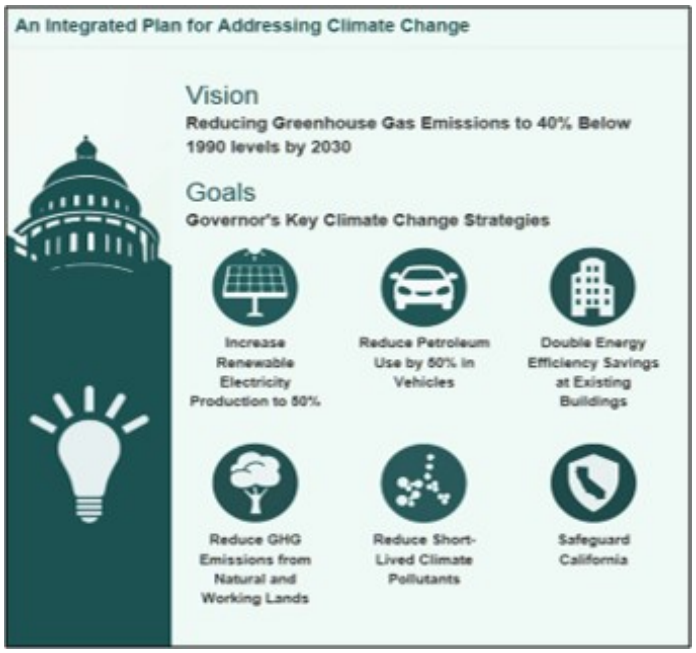
Caltrans is firmly committed to implementing measures to help reduce GHG emissions. These measures are outlined in the following section.

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 is 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 paved bike trail near and underneath the American River Bridge. The public would still have access to the paved bike trail outside of the American River Bridge area. As bicyclists and pedestrians approach the American River Bridge, signs will be placed that indicate construction is ahead and 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. A portion of the bike trail 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 limit will be temporarily impacted. The dirt road from the Ethan Way entrance to the American River Bridge, south of Bushy Lake, will also be closed to bike and pedestrian traffic. However, the public would still have access to other roads/paths that connect to Bushy Lake throughout construction.

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 underneath the American River Bridge and dirt road from Ethan Way entrance to the American River Bridge.

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. Most of the paved bike trail will remain open. Only the portion that runs underneath the American River Bridge would temporarily be closed during construction. Even though that portion of the bike trail will be closed, signs will be placed directing the bikers and pedestrians to the top of the levee. The levee road will connect back to the bike trail as you travel further east. Other features of the Parkway, that are not directly impacted due to construction, will remain open to the public. This includes Bushy Lake, nature viewing, and access to the American River.. 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 had from October 20, 2020 through December 18, 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/Sacramento County Department of Regional Parks 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. Caltrans has addressed the comments we have received and revised the Section 4(f) Study.

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).

- During construction, the project will provide signage describing the project, alongside the signage for closure and detours, to communicate to Parkway users, what is happening in the area. This signage will include contact information for the public. This signage will warn “through traffic” that there is a closure ahead, but allow park users to access the non-construction areas of the Parkway.

- Paved trails, equestrian/hiking trails and/or maintenance roads will be available to the public during times when it is safe and feasible to do so.

- Signage, detours and flag persons will be used as necessary to allow for the public to use non-construction areas.

- Trail closures will consist of a 14-day advance notice to trail users, via signage at the detour locations.

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

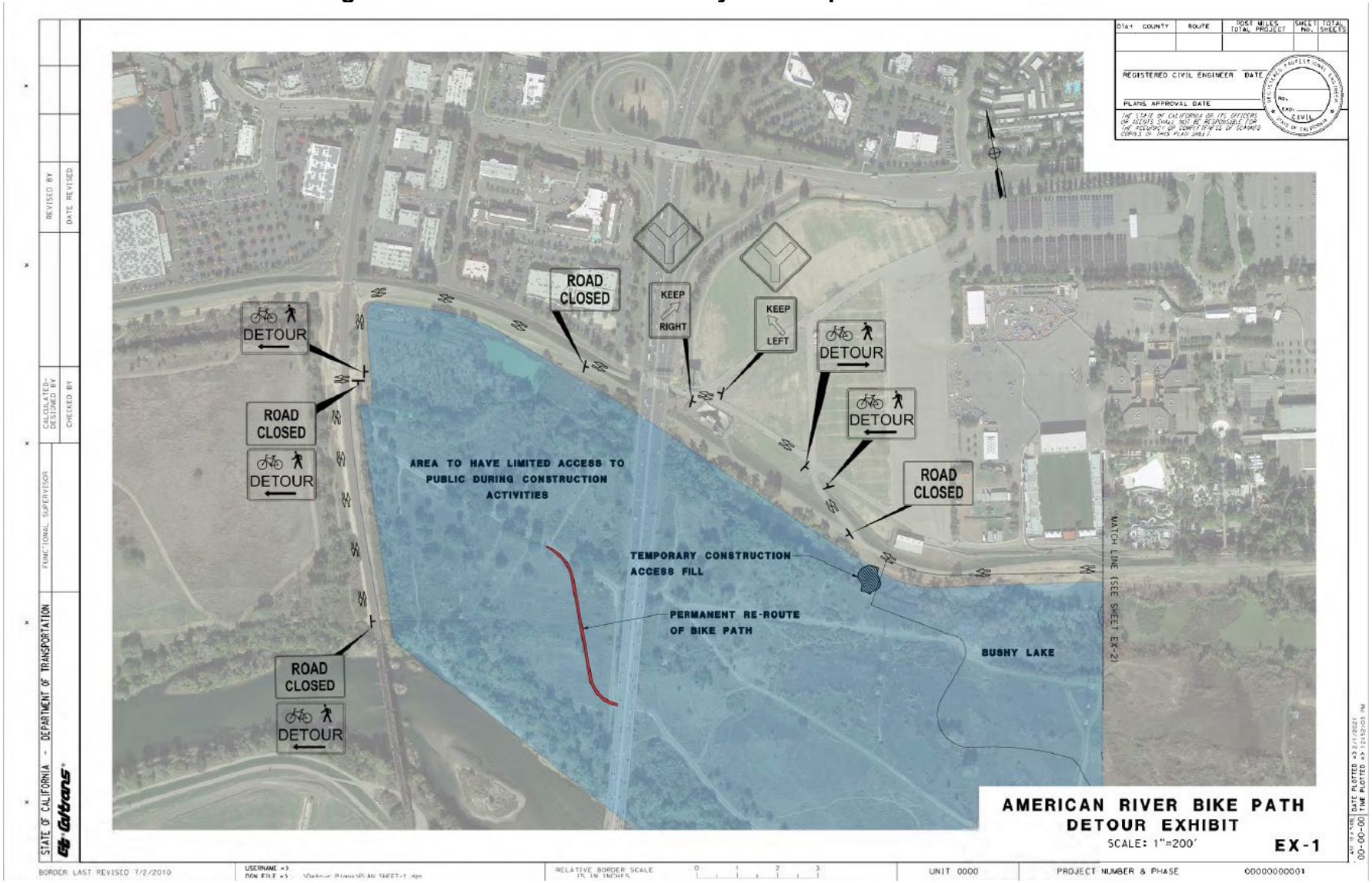
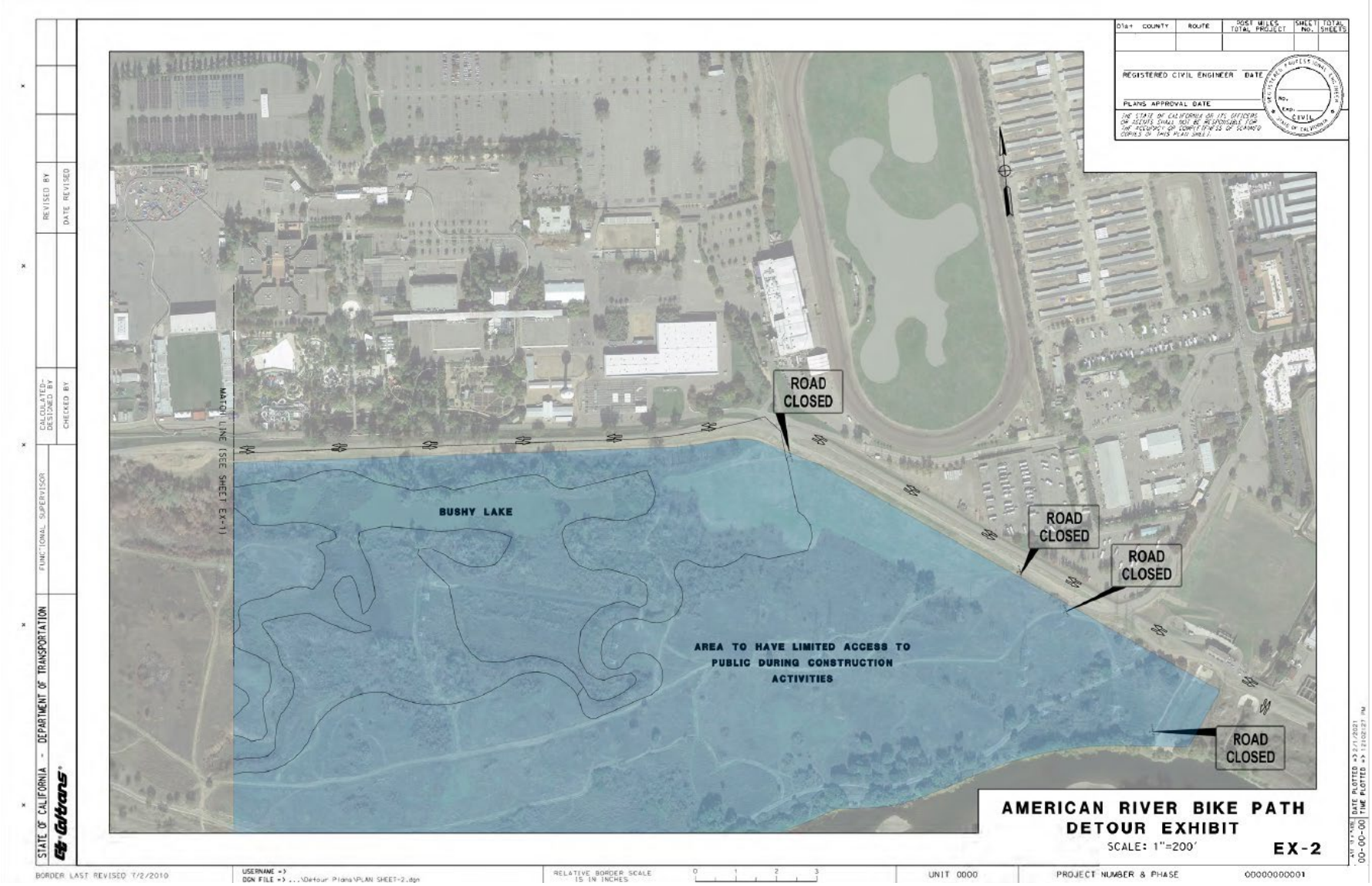


Figure 20: American River Parkway – Cal Expo Detour Exhibit 2



Appendix B – Air Quality Report

AIR QUALITY REPORT

Bridge Deck Replacement Project

03-SAC-51-2.0/3.5
[03-3F070/0312000054]

Prepared by

State of California
Department of Transportation
North Region Office of Environmental Engineering (South)
703 B Street, Marysville, CA 95901

March 2020

AIR QUALITY REPORT

SACRAMENTO COUNTY, CALIFORNIA

CALIFORNIA DEPARTMENT OF TRANSPORTATION DISTRICT 3

E.A. 03-3F070

EFIS 0312000054

Reviewed by: _____ Date: 3/26/2020

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For individuals with sensory disabilities, this document is available in alternative formats. Please call or write to the California Department of Transportation, Attn: Doug Coleman, or use the California Relay Service TTY number, 711, or 1-800-735-2922

Contents

List of Appendices

List of Tables

List of Figures

Acronyms and Abbreviations

Term	Definition
AADT	Average annual daily traffic
AC	Asphalt Concrete
ATCM	Asbestos Airborne Toxic Control Measure
ADL	Aerially Deposited Lead
ARB	California Air Resources Board
BMPs	Best Management Practices
CAAQS	California Ambient Air Quality Standards
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CH_4	Methane
CO	Carbon monoxide
CO_2	Carbon dioxide
COA	Conditions of Approval
EO	Executive Order
FCAA	Federal Clean Air Act
FHWA	Federal Highway Administration
ft	Feet
FTA	Federal Transit Administration
FTIP	Federal Transportation Improvement Program
GHG	Greenhouse gas
HEPA	High Efficiency Paticulate Air
IPCC	International Panel on Climate Change
MMRP	Mitigation Monitoring and Reporting Program

Term	Definition
MOVES	Motor Vehicle Emission Simulator
mph	Miles per hour
MPO	Metropolitan Planning Organization
MSAT	Mobile Source Air Toxics
MTIP	Metropolitan Transportation and Improvement Program
MTP	Metropolitan Transportation Plan
N_2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NATA	National Air Toxics Assessment
NEPA	National Environmental Policy Act
NHTSA	National Highway Traffic Safety Administration
NO_2	Nitrogen dioxide
NOA	Naturally occurring asbestos
NO_x	Nitrogen oxide
O_3	Ozone
PCC	Portland Cement Concrete
PM	Particulate matter
P.M.	Post Mile
PM_{10}	Particulate matter less than 10 microns in diameter
$PM_{2.5}$	Particulate matter less than 2.5 microns in diameter
ppm	Parts per million
ROGs	Reactive organic gases
RTP	Regional Transportation Plan
SACOG	Sacramento Council of Governments
SB	Senate Bill
SHOPP	State Highway Operation and Protection Program
SIP	State Implementation Plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SM&I	Structures, Maintenance, and Investigations

Term	Definition
SO_2	Sulfur dioxide
SR	State Route
SVAB	Sacramento Valley Air Basin
TACs	Toxic air contaminants
TIP	Transportation Improvement Program
TMP	Traffic Management Plan
USC	United States Code
USDOT	United States Department of Transportation
U.S. EPA	United States Environmental Protection Agency
VMT	Vehicle miles traveled

1. Proposed Project Description

1.1 Introduction

The California Department of Transportation (Caltrans) proposes to remove and replace existing concrete deck and steel girder strengthening posttensioning systems on the American River Bridge (Bridge No. 24-0003), widening the superstructure of the bridge to accommodate traffic during construction. It also proposes to construct the bridge substructure to accommodate for future widening of State Route (SR) 51 and construct new Class IV bike/pedestrian path to provide a north-south connection for bicyclists and pedestrians between the City of Sacramento street network to the American River Bike Trail and the adjacent neighborhoods. Caltrans is the lead agency under National Environmental Policy Act (NEPA). Caltrans is the lead agency under California Environmental Quality Act (CEQA).

1.2 Location and Background

This project is programmed in the Sacramento Area Council of Governments (SACOG) Metropolitan Transportation Implementation Plan (MTIP, 2019-2020) and is proposed for funding from State Highway Operation and Protection Program (SHOPP) (SACOG ID CAL20691). Figure 1 shows the project location.

The American River Bridge is located on SR 51 in Sacramento County, in the City of Sacramento. The American River Bridge 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. It was formally known as I-80 and was changed to SR 51 in the mid-1970's. The bridge was seismically retrofitted in 1977 at various locations and in 1988, Spans 1 and 2 girders were strengthened with pre-stressing.

1.3 Purpose and Need

The purpose of this project is to replace the deck on the American River Bridge (Bridge No. 24-0003) on SR 51 in Sacramento County. The proposed work will repair, protect, and extend the surface life of the deck. It will also delay the need for major rehabilitation or replacement of the 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. Therefore, the bridge deck needs replacement.

Figure 1. Map of the Project Location.

2

1.4 Baseline and Forecasted Conditions for No-Build and Project Alternatives

The proposed alternatives in this project include the no-build alternative and 4 buid alternatives. These alternatives are each discussed below. See Appendix A including the environmental study limit maps and layout.

1.4.1 Existing Roadways and Traffic Conditions

The bridge deck is covered with a thin Asphalt Concrete (AC) overlay that has worn off. Within the latest bridge needs report recommendation for the American River Bridge states that the bridge deck has cracks and spalls and needs major deck rehabilitation to help preserve the deck and provide a better wearing surface. Structures Maintenance and Investigation (SM&I) recommends replacing the bridge deck to address the needs of the bridge deck rehabilitation. Table 1 shows existing roadway geometric information.

Table 1. Roadway Geometric Information.

Curve Radius Along Median Barrier	Through Traffic Lanes			Paved Shoulder Widths		Median Barrier (Yes/No)
	Number of lanes	Lane Width	Pavement type	Left	Right	
1500'	3	12'	AC over PCC	7'-8"	2'	Yes

AC: Asphalt Concrete; PCC: Portland Cement Concrete

Table 2 represents existing traffic conditions with average annual daily traffic, percentage of truck, and peak hour volumes for the baseline year (2019).

Table 2. Summary of Existing Traffic Conditions.

Scenario/ Analysis Year	Location	AADT		% Truck	Peak Hour		% Truck
		Total	Truck		Total	Truck	
Existing Year 2019	Post miles 2.0 to 3.5 on SR 51	177,200	7,400	4.2	11,500	340	3.0

AADT: average annual daily traffic

1.4.2 No-Build Alternative and Traffic Conditions

The no-build (no action) alternative consists of those transportation projects that are already planned for construction by or before 2022. Consequently, the No-Build alternative represents future travel

conditions in the study area of the Bridge Deck Replacement on SR 51 without the Bridge Deck Replacement project (Table 3).

Table 3. Summary of No-Build Traffic Conditions.

Scenario/ Analysis Year	Location	AADT		% Truck	Peak Hour		% Truck
		Total	Truck		Total	Truck	
No Build Opening Year 2022	Post miles 2.0 to 3.5 on SR 51	179,800	7,600	4.2	11,700	350	3.0
No Build Design Year 2042		197,400	8,300	4.2	12,800	380	3.0

AADT: average annual daily traffic

1.4.3 Project Build Alternatives

All alternatives (Variant) listed below are feasible with different environmental/footprint impacts and a 14′ bike/pedestrian path on the northbound side of the bridge separated from the traffic by a 2′ concrete barrier except Variant A1, see below for further discussion.

Variant A proposes to widen superstructure and substructure by 15' -6" on the southbound side of the structure and 31' -6" on the northbound side of the structure to provide 3 lanes in each direction during construction per TMP recommendation.

Variant A1 proposes to widen superstructure and substructure by 15' -6" on the southbound side of the structure and 15' -6" on the northbound side of the structure to provide 3 lanes in each direction during construction per Traffic Management Plan (TMP) recommendation, excluding the construction of 14′ bike path on the northbound side of the bridge separated from the traffic by a 2′ concrete barrier.

Variant B proposes to widen the substructure to the ultimate width by 36' -11" on the southbound side and 50' -11" on the north bound side of the bridge, widening superstructure by 15' -6" on the southbound side of the structure and 31' -6" on the northbound side of the structure to provide 3 lanes in each direction during construction per TMP recommendation.

Variant C proposes to widen superstructure and substructure by 36' -11" on the southbound side and 50' -11" on the northbound side of the bridge and to provide 3 lanes in each direction during construction per TMP recommendation.

1.4.4 Comparison of Existing/Baseline and Build Alternatives

This proposed project is not a capacity increasing or a congestion relief project that uses a qualitative analysis for operational emissions. As shown Tables 2 and 3, there would be increase in the daily traffic volumes as well as truck travel on SR 51 in Sacramento County between the existing and the future years due to natural increases probably attributed to population growth, increases in travel activities, economic development, and so on.

1.5 Construction Activities and Schedule

The length of the project construction period is approximately 3.3 years. Table 4 presents the anticipated milestone completion dates. Although construction is planned to last approximately 3.3 years, no construction activities are anticipated to last more than five years at any individual site. Emissions from construction-related activities are thus considered temporary as defined in 40 CFR 93.123(c)(5); and are not required to be included in PM hot-spot analyses to meet conformity requirements.

Table 4. Construction Activities and Schedule.

Construction Phase	Begin Date	Completion Date
Advertisement	11/17/2021	3/7/2022
Award of Contract	2/1/2022	6/6/2022
Approve Contract	3/1/2022	7/8/2022
Contract Acceptance	3/1/2022	12/1/2025
Construction	12/1/2025	-

2. Regulatory Setting

Many statutes, regulations, plans, and policies have been adopted at the federal, state, and local levels to address air quality issues related to transportation and other sources. The proposed project is subject to air quality regulations at each of these levels. This section introduces the pollutants governed by these regulations and describes the regulation and policies that are relevant to the proposed project.

2.1 Pollutant-Specific Overview

Air pollutants are governed by multiple federal and state standards to regulate and mitigate health impacts. At the federal level, there are six criteria pollutants for which National Ambient Air Quality Standards (NAAQS) have been established: CO, Pb, NO_2, O_3, PM ($PM_{2.5}$ and PM_{10}), and SO_2. The U.S. EPA has also identified nine priority mobile source air toxics: 1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter (diesel PM), ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter (https://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/msat/). In California, sulfates, visibility reducing particles, hydrogen sulfide, and vinyl chloride are also regulated.

2.1.1 Criteria Pollutants

The Clean Air Act requires the U.S. EPA to set National Ambient Air Quality Standards (NAAQS) for six criteria air contaminants: ozone, particulate matter, carbon monoxide, nitrogen dioxide, lead, and sulfur dioxide. It also permits states to adopt additional or more protective air quality standards if needed. California has set standards for certain pollutants. Table 5 documents the current air quality standards while Table 6 summarizes the sources and health effects of the six criteria pollutants and pollutants regulated in the state of California.

Table 5. Table of State and Federal Ambient Air Quality Standards. Accessed February of 2019, www.arb.ca.gov/research/aaqs/aaqs2.pdf.

Ambient Air Quality Standards						
Pollutant	Averaging Time	California Standards [1]		National Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3)[8]	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m³)		0.070 ppm (137 µg/m³)		
Respirable Particulate Matter (PM10)[9]	24 Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		—		
Fine Particulate Matter (PM2.5)[9]	24 Hour	—	—	35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	12.0 µg/m³	15 µg/m³	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m³)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m³)		9 ppm (10 mg/m³)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		—	—	
Nitrogen Dioxide (NO_2)[10]	1 Hour	0.18 ppm (339 µg/m³)	Gas Phase Chemiluminescence	100 ppb (188 µg/m³)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)		0.053 ppm (100 µg/m³)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[11]	1 Hour	0.25 ppm (655 µg/m³)	Ultraviolet Fluorescence	75 ppb (196 µg/m³)	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m³)	
	24 Hour	0.04 ppm (105 µg/m³)		0.14 ppm (for certain areas)[11]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[11]	—	
Lead[12,13]	30 Day Average	1.5 µg/m³	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m³ (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m³		
Visibility Reducing Particles[14]	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 µg/m³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m³)	Gas Chromatography			

See footnotes on next page ...

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7

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.

8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM10 standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

11. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

    Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

12. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

14. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

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8

Table 6. State and Federal Criteria Air Pollutant Effects and Sources.

Pollutant	Principal Health and Atmospheric Effects	Typical Sources
Ozone (O_3)	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage and cancer. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include many known toxic air contaminants. Biogenic VOC may also contribute.	Low-altitude ozone is almost entirely formed from reactive organic gases/volatile organic compounds (ROG or VOC) and nitrogen oxides (NOx) in the presence of sunlight and heat. Common precursor emitters include motor vehicles and other internal combustion engines, solvent evaporation, boilers, furnaces, and industrial processes.
Respirable Particulate Matter (PM_{10})	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many toxic and other aerosol and solid compounds are part of PM_{10}.	Dust- and fume-producing industrial and agricultural operations; combustion smoke & vehicle exhaust; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources.
Fine Particulate Matter ($PM_{2.5}$)	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter – a toxic air contaminant – is in the $PM_{2.5}$ size range. Many toxic and other aerosol and solid compounds are part of $PM_{2.5}$.	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical and photochemical reactions involving other pollutants including NO_x, sulfur oxides (SO_x), ammonia, and ROG.
Carbon Monoxide (CO)	CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. CO also is a minor precursor for photochemical ozone. Colorless, odorless.	Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.
Nitrogen Dioxide (NO_2)	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain & nitrate contamination of stormwater. Part of the "NOx" group of ozone precursors.	Motor vehicles and other mobile or portable engines, especially diesel; refineries; industrial operations.
Sulfur Dioxide (SO_2)	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing; some natural sources like active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel not used.
Lead (Pb)	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also, a toxic air contaminant and water pollutant.	Lead-based industrial processes like battery production and smelters. Lead paint, leaded gasoline. Aerially deposited lead from older gasoline use may exist in soils along major roads.
Visibility-Reducing Particles (VRP)	Reduces visibility. Produces haze. NOTE: not directly related to the Regional Haze program under the Federal Clean Air Act, which is oriented primarily toward visibility issues in National Parks and other "Class I" areas. However, some issues and measurement methods are similar.	See particulate matter above. May be related more to aerosols than to solid particles.
Sulfate	Premature mortality and respiratory effects. Contributes to acid rain. Some toxic air contaminants attach to sulfate aerosol particles.	Industrial processes, refineries and oil fields, mines, natural sources like volcanic areas, salt-covered dry lakes, and large sulfide rock areas.
Hydrogen Sulfide (H_2S)	Colorless, flammable, poisonous. Respiratory irritant. Neurological damage and premature death. Headache, nausea. Strong odor.	Industrial processes such as: refineries and oil fields, asphalt plants, livestock operations, sewage treatment plants, and mines. Some natural sources like volcanic

		areas and hot springs.
Vinyl Chloride	Neurological effects, liver damage, cancer. Also considered a toxic air contaminant.	Industrial processes.

2.1.2 Mobile Source Air Toxics

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the U.S. EPA regulate 188 air toxics, also known as hazardous air pollutants. The U.S. EPA has assessed this expansive list in its rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007), and identified a group of 93 compounds emitted from mobile sources that are part of U.S. EPA's Integrated Risk Information System (IRIS) (https://www.epa.gov/iris). In addition, the U.S. EPA identified nine compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers or contributors and non-hazard contributors from the 2011 National Air Toxics Assessment (NATA) (https://www.epa.gov/national-air-toxics-assessment). These are *1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter (diesel PM), ethylbenzene, formaldehyde, naphthalene*, and *polycyclic organic matter*. While the Federal Highway Administration (FHWA) considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future U.S. EPA rules.

The 2007 U.S. EPA rule mentioned above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using U.S. EPA's MOVES2014a model, even if vehicle activity (vehicle-miles traveled, VMT) increases by 45 percent from 2010 to 2050 as forecast, a combined reduction of 91 percent in the total annual emission rate for the priority MSATs is projected for the same time period, as shown in Figure 2.

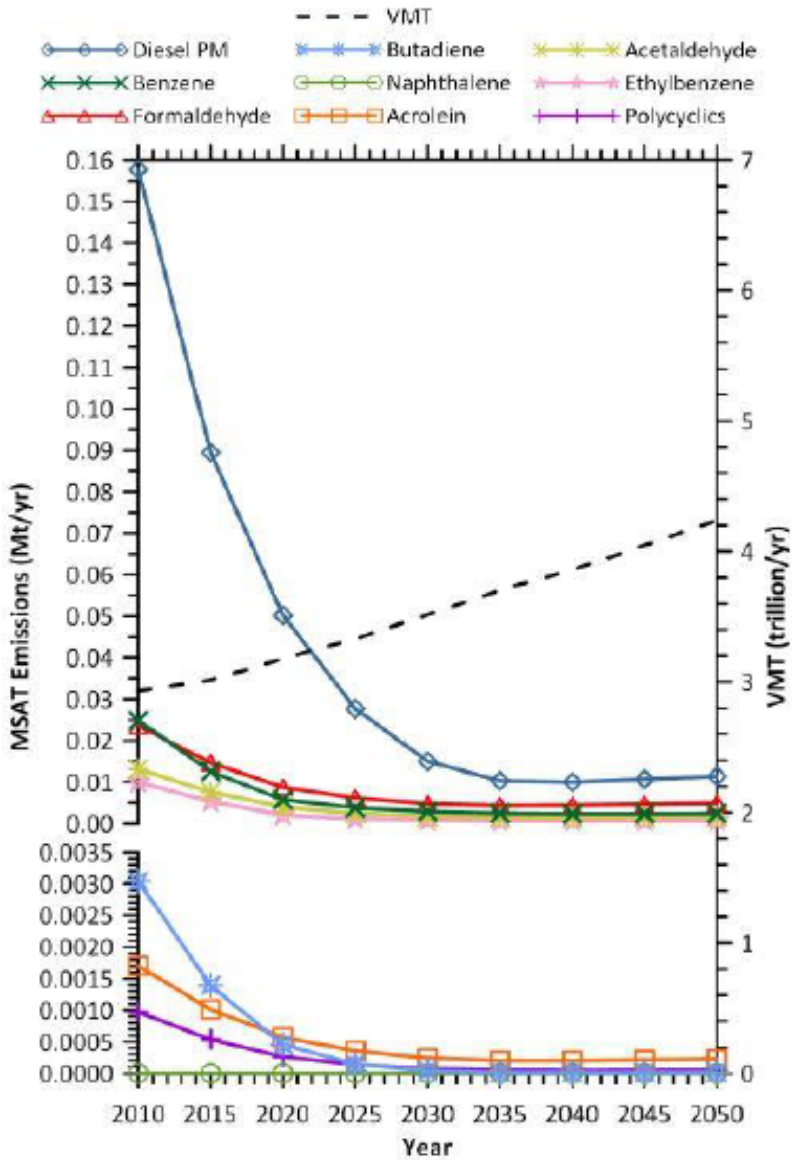


Figure 2. Projected National MSAT Trends, 2010-2050 for Vehicles Operating on Roadways Using EPA's MOVES2010b Model (Source: https://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/msat/).

2.1.3 Greenhouse Gases

The term greenhouse gas (GHG) is used to describe atmospheric gases that absorb solar radiation and subsequently emit radiation in the thermal infrared region of the energy spectrum, trapping heat in the Earth's atmosphere. These gases include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and water vapor, among others. A growing body of research attributes long-term changes in temperature, precipitation, and other elements of Earth's climate to large increases in GHG emissions since the mid-nineteenth century, particularly from human activity related to fossil fuel combustion. Anthropogenic GHG emissions of particular interest include CO_2, CH_4, N_2O, and fluorinated gases.

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 warming potential of other gases is assessed as multiples of CO_2. For example, the 2007 International Panel on Climate Change *Fourth Assessment Report* calculates the GWP of CH_4 as 25 and the GWP of N_2O as 298, over a 100-year time horizon.[1] Generally, estimates of all GHGs are summed to obtain total emissions for a project or given time period, usually expressed in metric tons ($MTCO_2e$), or million metric tons ($MMTCO_2e$).[2]

As evidence has mounted for the relationship of climate changes to rising GHGs, federal and state governments have established numerous policies and goals targeted to improving energy efficiency and fuel economy, reducing GHG emissions. Nationally, electricity generation is the largest source of GHG emissions, followed by transportation. In California, however, transportation is the largest contributor to GHGs.

At the federal 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.

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. However, the U.S. EPA and the National Highway Traffic Safety Administration (NHTSA) issued the first corporate fuel economy (CAFE) standards in 2010, requiring cars and light-duty vehicles to achieve certain fuel economy targets by 2016, with the intention of gradually increasing the targets and the range of vehicles to which they would apply.

California has enacted aggressive GHG reduction targets, starting with Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006. AB 32 is California's signature climate change legislation. It set the goal of reducing statewide GHG emissions to 1990 levels by 2020 and required the ARB to develop a Scoping Plan that describes the approach California will take to achieve that

[1] See Table 2.14 in IPCC Fourth Assessment Report: Climate Change 2007 (AR4): The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom, and New York, NY, USA. http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-chapter2.pdf.
[2] See http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/CEQA-Guidance-Tools.

goal and to update it every 5 years. In 2015, Governor Jerry Brown enhanced the overall adaptation planning effort with Executive Order (EO) B-30-15, establishing an interim GHG reduction goal of 40 percent below 1990 levels by 2030, and requiring state agencies to factor climate change into all planning and investment decisions.

Senate Bill (SB) 375, the Sustainable Communities and Climate Protection Act of 2008, furthered state climate action goals by mandating coordinated transportation and land use planning through preparation of sustainable communities strategies (SCS). The ARB sets GHG emissions reduction targets for passenger vehicles for each region. Each regional metropolitan planning organization must include in its regional transportation plan an SCS proposing actions toward achieving the regional emissions reduction targets.[3]

With these and other State Senate and Assembly bills and executive orders, California advances an innovative and proactive approach to dealing with GHG emissions and climate change.

2.1.4 Asbestos

Asbestos is a term used for several types of naturally occurring fibrous minerals that are a human health hazard when airborne. The most common type of asbestos is chrysotile, but other types such as tremolite and actinolite are also found in California. Asbestos is classified as a known human carcinogen by state, federal, and international agencies and was identified as a toxic air contaminant by the ARB in 1986. All types of asbestos are hazardous and may cause lung disease and cancer.

Asbestos can be released from serpentine and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects, and other improvement projects in some localities. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading for development projects, and at quarry operations. All of these activities may have the effect of releasing potentially harmful asbestos into the air. Natural weathering and erosion processes can act on asbestos-bearing rock and make it easier for asbestos fibers to become airborne if such rock is disturbed.

Serpentine may contain chrysotile asbestos, especially near fault zones. Ultramafic rock, a rock closely related to serpentinite, may also contain asbestos minerals. Asbestos can also be associated with other rock types in California, though much less frequently than serpentinite and/or ultramafic rock. Serpentinite and/or ultramafic rock are known to be present in 44 of California's 58 counties. These rocks are particularly abundant in counties of the Sierra Nevada foothills, the Klamath Mountains, and Coast Ranges. The California Department of Conservation, Division of Mines and Geology has developed a map showing the general location of ultramafic rock in the state (www.conservation.ca.gov/cgs/minerals/hazardous_minerals/asbestos/Pages/index.aspx).

[3] https://www.arb.ca.gov/cc/sb375/sb375.htm

2.2 Regulations

2.2.1 Federal and California Clean Air Act

The Federal Clean Air Act (FCAA), as amended, is the primary federal law that governs air quality while the California Clean Air Act (CCAA) is its companion state law. These laws and related regulations by the U.S. EPA and the (ARB) set standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS and state ambient air quality standards have been established for six transportation-related criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM), which is broken down for regulatory purposes into particles of 10 micrometers or smaller (PM_{10}) and particles of 2.5 micrometers and smaller ($PM_{2.5}$), and sulfur dioxide (SO_2). In addition, national and state standards exist for lead (Pb), and state standards exist for visibility reducing particles, sulfates, hydrogen sulfide (H_2S), and vinyl chloride. The NAAQS and state standards are set at levels that protect public health with a margin of safety and are subject to periodic review and revision. Both state and federal regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics in their general definition.

2.2.2 Transportation Conformity

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

Conformity requirements apply only in nonattainment and "maintenance" (former nonattainment) areas for the NAAQS, and only for the specific NAAQS that are or were violated. The U.S. EPA regulations at 40 CFR 93 govern the conformity process. Conformity requirements do not apply in unclassifiable/attainment areas for NAAQS and do not apply at all for state standards regardless of the status of the area.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the NAAQS for carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), and in some areas (although not in California), sulfur dioxide (SO_2). California has attainment or maintenance areas for all of these transportation-related "criteria pollutants" except SO_2, and also has a nonattainment area for lead (Pb); however, lead is not currently required by the FCAA to be covered in transportation conformity analysis. Regional conformity is based on emission analysis of Regional Transportation Plans (RTPs) and Federal Transportation Improvement Programs (FTIPs) that include all transportation projects planned for a region over a period of at least 20 years (for the RTP), and 4 years (for the FTIP). RTP and FTIP

conformity uses travel demand and emission models to determine whether or not the implementation of those projects would conform to emission budgets or other tests at various analysis years showing that requirements of the Clean Air Act and the SIP are met. If the conformity analysis is successful, the Metropolitan Planning Organization (MPO), FHWA, and Federal Transit Administration (FTA), make the determinations that the RTP and FTIP are in conformity with the SIP for achieving the goals of the Clean Air Act. Otherwise, the projects in the RTP and/or FTIP must be modified until conformity is attained. If the design concept, the scope, and the "open-to-traffic" schedule of a proposed transportation project are the same as described in the RTP and the TIP, then the proposed project meets regional conformity requirements for purposes of project-level analysis.

Project-level conformity is achieved by demonstrating that the project comes from a conforming RTP and TIP and the project has a design concept and scope[4] that has not changed significantly from those in the RTP and TIP. If the design concept and scope have changed substantially from that used in the RTP Conformity analysis, RTP and TIP amendments may be needed. Project-level conformity also needs to demonstrate that project analyses have used the latest planning assumptions and U.S. EPA-approved emissions models; the project complies with any control measures in the SIP in PM areas. Furthermore, additional analyses (known as hot-spot analyses) may be required for projects located in CO and PM nonattainment or maintenance areas to examine localized air quality impacts.

2.2.3 National Environmental Policy Act (NEPA)

NEPA requires that policies and regulations administered by the federal government are consistent with its environmental protection goals. NEPA also requires that federal agencies use an interdisciplinary approach to planning and decision-making for any actions that could impact the environment. It requires environmental review of federal actions including the creation of Environmental Documents (EDs) that describe the environmental effects of a proposed project and its alternatives (including a section on air quality impacts).

2.2.4 California Environmental Quality Act (CEQA)

CEQA[5] is a statute that requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible. CEQA documents address CCAA requirements for transportation projects. While state standards are often more strict than federal standards, the state has no conformity process.

2.2.5 Local

The U.S. EPA has delegated responsibility to air districts to establish local rules to protect air quality.

[4] "Design concept" means the type of facility that is proposed, such as a freeway or arterial highway. "Design scope" refers to those aspects of the project that would clearly affect capacity and thus any regional emissions analysis, such as the number of lanes and the length of the project.
[5] For general information about CEQA, see: http://resources.ca.gov/ceqa/more/faq.html.

Caltrans' Standard Specification 14-9.02 (Caltrans, 2018) requires compliance with all applicable air quality laws and regulations including local and air district ordinances and rules.

The Sacramento Metropolitan Air Quality Management District (SMAQMD) has implemented enhanced fugitive PM dust control practices to regulate fugitive dust, which requires developer or contractor to control dust emissions from earth moving activities, storage or any other construction activity to prevent airborne dust from leaving the project site.

3. Affected Environment

The topography of a region can substantially impact air flow and resulting pollutant concentrations. California is divided into 15 air basins with similar topography and meteorology to better manage air quality throughout the state. Each air basin has a local air district that is responsible for identifying and implementing air quality strategies to comply with ambient air quality standards.

The Bridge Deck Replacement project site is located at City of Sacramento in Sacramento County, an area within the Sacramento Valley Air Basin (SVAB), which includes Sacramento, Shasta, Tehama, Butte, Glenn, Colusa, Sutter, Yuba, Yolo, and parts of Solano and Placer Counties. Air quality regulation in this project location is administered by Sacramento Metropolitan Air Quality Management District. Current and forecasted population for Sacramento County is 1,540,975 as of July 1, 2017 U.S. Census, and the county's economy is largely driven by the City of Sacramento.

3.1 Climate, Meteorology, and Topography

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

The Sacramento Metro climatological station, maintained by Sacramento County, is located at the Sacramento International Airport area and is representative of meteorological conditions near the project. Figure 3 shows a wind rose illustrating the predominant wind patterns near the project.

The project area has a hot-summer Mediterranean climate with mild winters (generally from 39 to 54°Fahrenheit in January) and hot, dry summers (average from 58 to 92°Fahrenheit in July). Average annual precipitation is approximately 18.51 inches, mainly falling during the winter months. Sacramento County, California, covers an area of approximately 964 square miles (2,497 km^2)[6].

The mountains surrounding the SVAB create a barrier to airflow, which can trap air pollutants under certain meteorological conditions. The highest frequency of air stagnation occurs in the autumn and early winter when large high-pressure cells collect over the Sacramento Valley. The lack of surface wind during these periods and the reduced vertical flow caused by less surface heating reduces the influx of outside air and allows air pollutants to become concentrated in a stable volume of air. The surface concentrations of pollutants are highest when these conditions are combined with temperature inversions that trap pollutants near the ground. The ozone season (May through October) in the Sacramento Valley is characterized by stagnant morning air or light winds with the delta sea breeze arriving in the afternoon out of the southwest. Usually the evening breeze transports the airborne pollutants to the north out of the Sacramento Valley. During about half of

[6] See: https://www.census.gov/quickfacts/fact/table/sacramentocountycalifornia,CA/PST045219

the days from July to September, however, a phenomenon called the "Schultz Eddy" prevents this from occurring. Instead of allowing for the prevailing wind patterns to move north carrying the pollutants out, the Schultz Eddy causes the wind pattern to circle back to the south, preventing pollutants from cycling out of the air basin. This phenomenon has the effect of exacerbating the pollution levels in the area and increases the likelihood of violating federal or state standards. The eddy normally dissipates around noon when the delta sea breeze arrives.

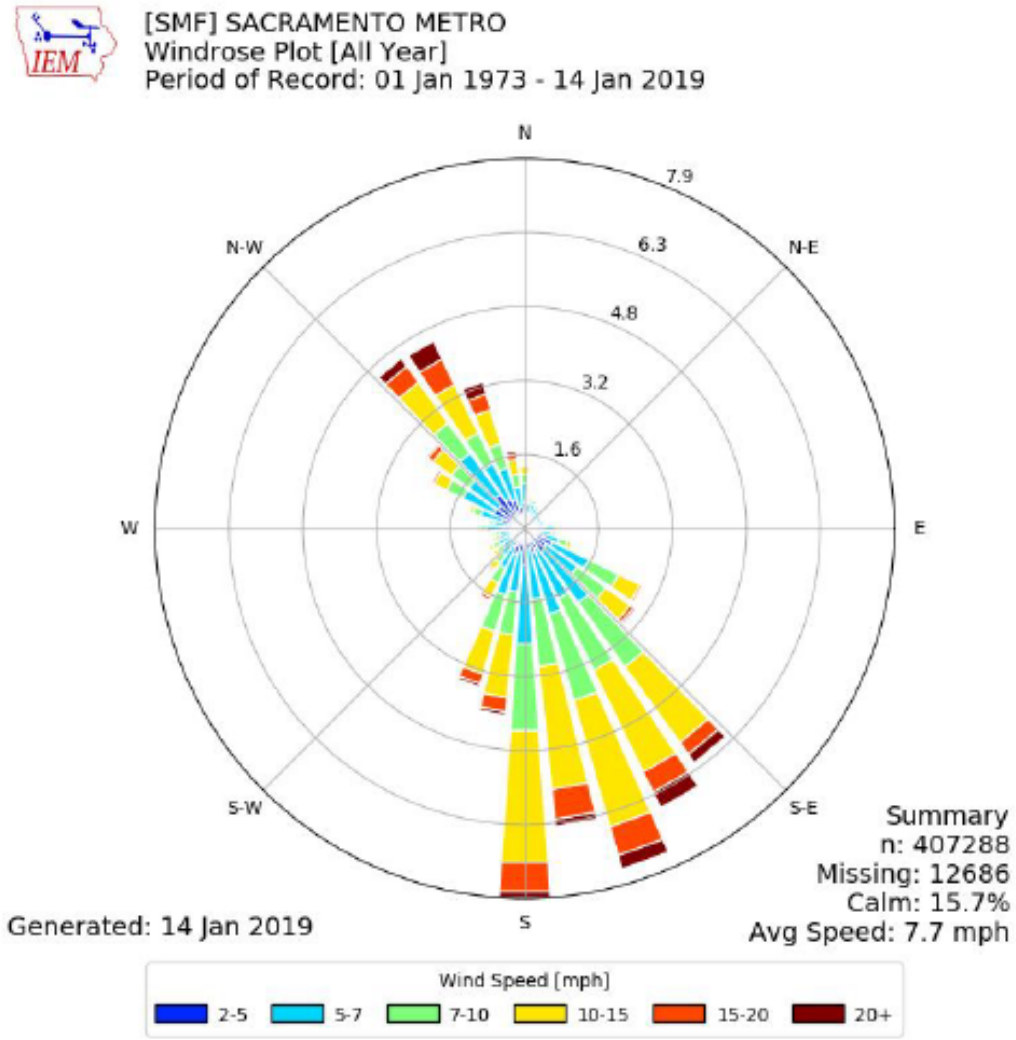


Figure 3. Predominant Wind Patterns Near the Project (Source: https://mesonet.agron.iastate.edu/sites/windrose.phtml?station=SMF&network=CA_ASOS).

3.2 Existing Air Quality

This section summarizes existing air quality conditions near the proposed project area. It includes attainment statuses for criteria pollutants, describes local ambient concentrations of criteria pollutants for the past 3 years, and discusses MSAT and GHG emissions. The closest air quality monitoring to the project site is the Sacramento-1309 T Street monitoring station (ARB #34305), which is located approximately 3 miles southwest of the project location (Figure 4). The station monitors air quality of criteria pollutants and is maintained by SMAQMD in conjunction with CARB.

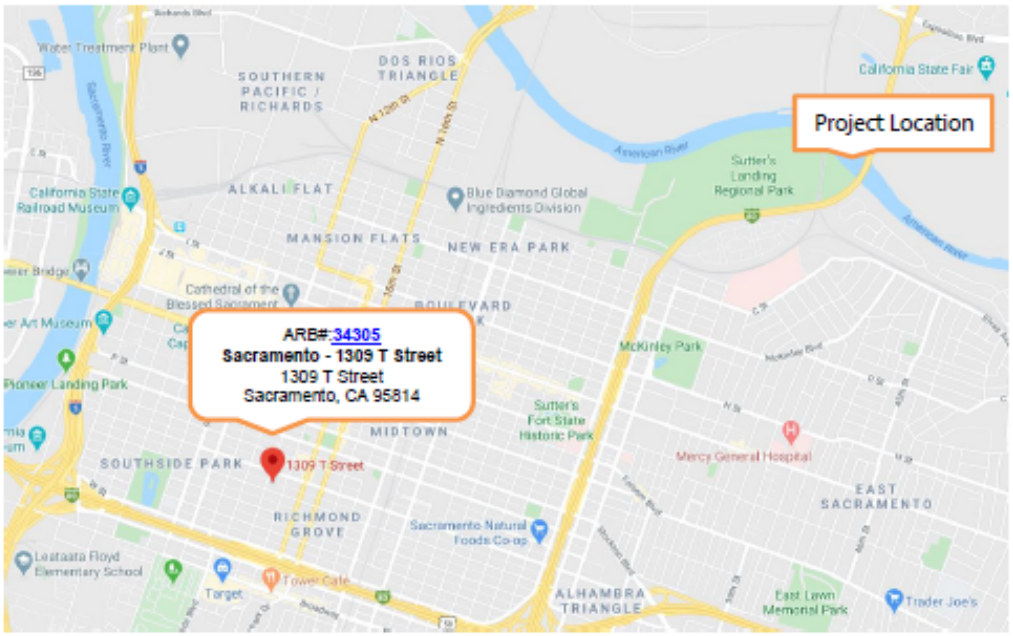


Figure 4. Map of Air Quality Monitoring Station Located Near the Project.

3.2.1 Criteria Pollutants and Attainment Status

Areas that do not violate ambient air quality standards are considered to have attained the standard. Violations of ambient air quality standards are based on air pollutant monitoring data and are evaluated for each air pollutant. Table 7 lists the state and federal attainment status for all regulated pollutants. At the federal level, Sacramento County is classified as maintenance for PM_{10}, nonattainment for O_3 and $PM_{2.5}$, and unclassified/attainment for, CO, NO_2, SO_2, and Pb. At the state level, Sacramento County is classified as nonattainment for O_3 and PM_{10}, attainment for $PM_{2.5}$, CO, NO_2, SO_2, Pb, and sulfates, and unclassified for visibility-reducing particles and hydrogen sulfide.

Table 7. State and Federal Attainment Status.

Pollutant	State Attainment Status	Federal Attainment Status
Ozone (O_3)	Nonattainment	Nonattainment (Moderate)
Respirable Particulate Matter (PM_{10})	Nonattainment	Maintenance (Moderate)
Fine Particulate Matter ($PM_{2.5}$)	Attainment	Nonattainment (Moderate)
Carbon Monoxide (CO)	Attainment	Unclassified/Attainment
Nitrogen Dioxide (NO_2)	Attainment	Unclassified/Attainment
Sulfur Dioxide (SO_2)	Attainment	Unclassified/Attainment
Lead (Pb)	Attainment	Unclassified/Attainment
Visibility-Reducing Particles	Unclassified	N/A
Sulfates	Attainment	N/A
Hydrogen Sulfide	Unclassified	N/A
Vinyl Chloride	N/A	N/A

N/A: not applicable or not available
Source: U.S. EPA Green Book, https://www.epa.gov/green-book, accessed on January 2020.

Table 8 lists air quality trends in data collected at the Sacramento-1309 T Street monitoring station (ARB #34305) for the past 3 years. O_3, $PM_{2.5}$, and PM_{10} data were obtained from this station. CO, NO_2, Pb, H_2S, Vinyl Chloride, or Visibility Reducing Particles is not measured at this monitoring station. The data in Table 8 were compiled from the California Air Resources Board's iADAM: Air Quality Data Statistics and the Environmental Protection Agency's Monitor Values Report. As shown in Table 8, in 2017 and 2018 the area surrounding the project exceeded the state Max 1-hr concentration standards for O_3, and both the state and the federal 8-hour standard concentrations for ozone exceeded for the past 3 years. State and federal Max 24-hr concentrations for PM_{10} exceeded in 2018. In 2017 the federal 24-hr average concentration for $PM_{2.5}$ exceeded the federal standard concentration (35 $\mu g/m^3$). In 2018 its concentration was higher than the standard; however, the estimated number of days exceeded was not available to determine the value due to the insufficiency.

Table 9 shows information regarding recent and historical State Implementation Plan (SIP) activities in the nonattainment area related to Sacramento Metropolitan Air Quality Management District (District) that controls air pollution in the proposed project are. The information in Table 9 provides U.S. EPA actions related to designations.

Table 8. Air Quality Concentrations for the Past 3 Years Measured at Sacramento-1309 T Street.

Pollutant	Standard	2016	2017	2018
Ozone				
Max 1-hr concentration (ppm): State		0.094	0.107	0.097
No. days exceeded: State	0.09 ppm	0	1	1

Pollutant	Standard	2016	2017	2018
Max 8-hr concentration: National (ppm): State		0.075	0.078	0.085
Federal		0.074	0.077	0.084
No. days exceeded: State	0.070 ppm	3	3	1
Federal	0.070 ppm	3	3	1
PM_{10}				
Max 24-hr concentration (µg/m^3): State		51.4	150.3	309.5
Federal		50.3	149.9	292.6
Estimated No. days exceeded: State	50 µg/m^3	1.1	*	22.2
Federal	150 µg/m^3	0	0	6.0
Annual average concentration (µg/m^3): State		19.5	*	29.7
Federal		19.1	23.8	29.2
$PM_{2.5}$				
24-hr average concentration (µg/m^3): State		39.8	46.0	263.3
Federal		24.4	44.5	149.9
Estimated No. days exceeded: Federal	35 µg/m^3	0	6.1	*
Annual average concentration (µg/m^3): State		7.6	9.1	12.7
Federal		7.6	9.1	*

Source: California Air Resources Board (http://www.arb.ca.gov/adam) and accessed on 1/8/2020
*There was insufficient (or no) data available to determine the value.
Data not provided for Carbon Monoxide (CO), Nitrogen Dioxide (NO_2), Lead (Pb), Hydrogen Sulfide (H_2S), Vinyl Chloride, or Visibility Reducing Particles as these pollutants are not currently monitored at the Sacramento-1309 T Street monitoring station (ARB #34305).

Table 9. Status of SIPs Relevant to the Project Area.

Name/Description	Status
2017 Sacramento Regional 2008 8-Hour Ozone Attainment and Further Reasonable Progress Plan	Adopted October 25, 2018
PM10 Implementation/Maintenance Plan and Redesignation Request for Sacramento County	Adopted October 28, 2010
2004 Revision to the California State Implementation Plan for Carbon Monoxide	Adopted July 22, 2004

3.2.2 Mobile Source Air Toxics (MSAT)

The primary MSAT pollutant source within the project area is SR 51. Railroad tracks including the Union Pacific Railroad mainline close to the project location may be also a source of MSAT pollutants.

The US EPA regulates a list of air toxics (64 FR 38706). Toxic air pollutants or hazardous air pollutants (HAPs) are those that are known to cause or suspected of causing cancer or other serious health ailments. Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that US EPA regulate 188 air toxics,

also known as hazardous air pollutants. In 2001, US EPA issued its first Mobile Source Air Toxics Rule, which identified 21 mobile source air toxic (MSAT) compounds as being hazardous air pollutants that required regulation. A subset of these MSAT compounds was identified as having the greatest influence on health. EPA issued the second MSAT Rule in 2007, which generally supported the findings of the first rule and provided additional recommendations of compounds having the greatest impact on health. The rule also identified several engine emission certification standards that must be implemented. US EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS).[7]

The 21 HAPs identified by US EPA as MSATs are emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as by-products. Metal air toxics result from engine wear or from impurities in oil or gasoline. US EPA has identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA).[8] These are acrolein, benzene, 1,3-butadiene, diesel particulate matter (DPM) that includes diesel exhaust organic gases, formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future EPA rules.

The US EPA is the lead federal agency responsible for administering the Clean Air Act and has certain responsibilities regarding the health effects of MSATs. In its 2001 rule (66 FR 17229), US EPA examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline program, national low emission vehicle standards, Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and proposed heavy duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements.[9] The agency is preparing another rule under authority of Clean Air Act Section 202(l) that will address these issues and could make adjustments to the full 21 and the primary seven MSATs.[10]

FHWA's ongoing work in air toxics includes a research programs to better understand and quantify the contribution of mobile sources to air emissions, the establishment of policies for addressing mobile source emissions in environmental reports, and the assessment of scientific literature on health impacts associated with motor vehicle emissions. California's vehicle emission control and fuel standards are more stringent than federal standards, and are effective earlier. CARB found that DPM contributes over 70 percent of the known risk from air toxics and poses the greatest cancer risks among all identified air toxics. Diesel trucks contribute more than half of the total diesel combustion sources. In response, CARB adopted a Diesel Risk Reduction Plan with control measures to reduce

[7] Source: http://www.epa.gov/ncea/iris/index.html
[8] Source: http://www.epa.gov/ttn/atw/nata1999/
[9] These programs will reduce on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde by 57 percent to 65 percent, and will reduce on-highway diesel PM emissions by 87 percent for FHWA projects between 2000 and 2020 even with a 64 percent increase in Vehicle Miles Traveled (VMT), as documented in the FHWA Memorandum: Interim Guidance on Air Toxics Analysis in NEPA Documents, February 3, 2006.
[10] EPA is planning to propose new rule making that would include more stringent vehicle emissions standards (Tier 3 Motor Vehicle Emissions) and reduce the sulfur content of gasoline beginning in 2017.

the overall DPM emissions by about 85 percent from 2000 to 2020. Part of the plan included recently adopted regulation that requires operators of truck and bus fleets in California to retrofit or replace vehicles to meet US EPA NO_X and $PM_{2.5}$ emission standards for 2010 model trucks (13 C.C.R. section 2025). Implementation of this regulation begins in 2014. By 2023, nearly all trucks and buses operating in California will need to meet 2010 model year engine emission standards.

Emissions of MSATs are anticipated to decrease substantially in future years. According to an FHWA analysis using EPA's MOVES2010b model, as shown in Figure 2, a combined reduction of 83 percent in the total emissions for the priority MSATs from 2010 to 2050 is projected. This would occur while vehicle-miles travelled (VMT) is assumed to increase by 102 percent. The combined State and federal regulations are expected to result in greater emission reductions, more quickly, than the FHWA analysis indicates. Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors.

3.2.3 Greenhouse Gas and Climate Change

CO_2, as part of the carbon cycle, is an important compound for plant and animal life, but also accounted for 84% of California's total GHG emissions in 2015. Transportation, primarily on-road travel, is the single largest source of CO_2 emissions in the state.

The proposed project is located at City of Sacramento in Sacramento County and is included in the SACOG Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS).

An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its incremental change in emissions when combined with the contributions of all other sources of GHG.[11] 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. To gather sufficient information on a global scale of all past, current, and future projects to make this determination is a difficult, if not impossible, task.

The AB 32 Scoping Plan mandated by AB 32 includes the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the Draft Scoping Plan, the ARB released the GHG inventory for California (Figure 5: forecast last updated: October 28, 2010). The forecast is an estimate of the emissions expected to occur in 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. The base year used for forecasting emissions is the average of statewide emissions in the GHG inventory for 2006, 2007, and 2008.

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

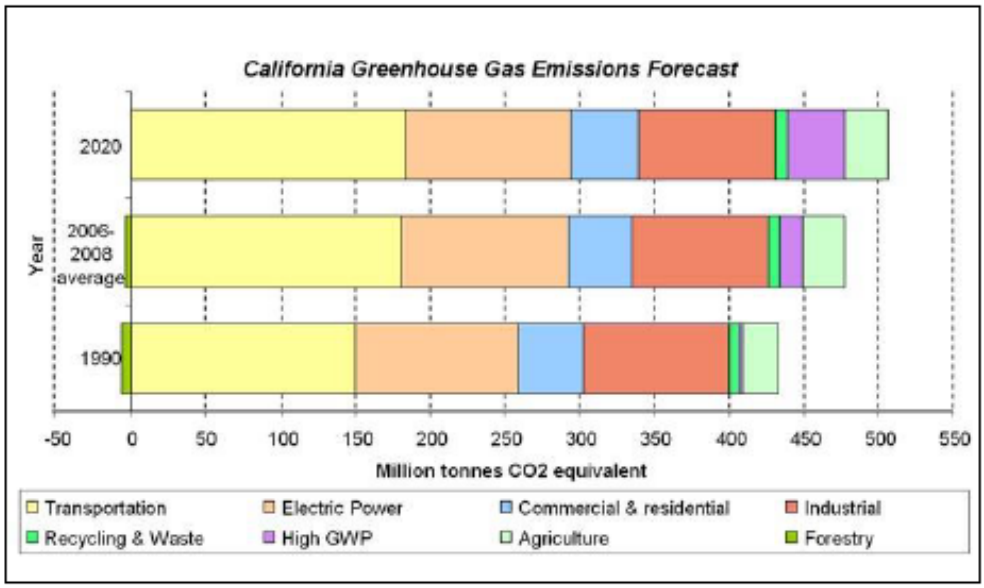


Figure 5. California Greenhouse Gas Forecast (source: http://www.arb.ca.gov/cc/inventory/data/forecast.htm)

3.3 Sensitive Receptors

Sensitive receptors include residential areas, schools, hospitals, other health care facilities, child/day care facilities, parks, and playgrounds. On the basis of research showing that the zone of greatest concern near roadways is within 500 feet (or 150 meters), sensitive receptors within 500 feet (or 150 meters) have been identified. Table 10 and Figure 6 shows the locations of sensitive receptors relative to the proposed project site within the 500 feet buffer of the proposed project area.

Table 10. Sensitive Receptors Located Within 150 meters of the Project Site.

Receptor	Description	Distance Between Receptor and Project (m)
Michael Himovitz Park	Recreational park located within 500 feet of the project area	150
R. Burnett Miller Park	Recreational park located within 500 feet of the project area	100
Alan & Helen Post Park	Recreational park located within 500 feet of the project area	50

Receptor	Description	Distance Between Receptor and Project (m)
Sutter's Landing Regional Park	Regional park located within 500 feet of the project area	50
Residential Areas	Residential areas located within 500 feet of the project area	30

sensitive receptors

Figure 6. Sensitive Receptors Located Near the Proposed Project.

3.4 Conformity Status

3.4.1 Regional Conformity

The proposed project in located in an area that is nonattainment for national ozone and $PM_{2.5}$ and maintenance for national PM_{10}. This project does not require regional conformity requirements, since it is exempt from air quality conformity analysis requirements per Table 2 of 40 Code of Federal Regulations (CFR) §93.126. Separate listing of the project in the Regional Transportation Plan and Transportation Improvement Program, and their regional conformity analyses are not necessary. The project will not interfere with timely implementation of Transportation Control Measures identified in the applicable SIP and regional conformity analysis. Photocopies of relevant pages from the MTIP are included in Appendix B.

3.4.2 Project-Level Conformity

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" ("Widening narrow pavements or reconstructing bridge (no additional travel lanes)"). Conformity requirements do not apply (See Appendix C).

3.4.3 Interagency Consultation

The proposed project does not require a project-level PM hot spot analysis, since it is exempt from all air quality conformity analysis requirements per Table 2 of 40 Code of Federal Regulations (CFR) §93.126 (See Appendix C).

3.5 NEPA Analysis/Requirement

NEPA applies to all projects that receive federal funding or involve a federal action. NAAQS were established by the Federal Clean Air Act of 1970 (amended in 1977 and 1990) for six "criteria" pollutants. These criteria pollutants now include CO, O_3, NO_2, PM_{10}, SO_2, and Pb. In 1997, the EPA added $PM_{2.5}$ as a criteria pollutant. The air pollutants standards that have been established are considered for the most prevalent air pollutants that are known to be hazardous to human health. At the federal level, the U.S. EPA requires states to attain and maintain compliance with the federal standards as mandated by the Clean Air Act. The U.S. EPA requires non-compliant states to prepare and submit air quality plans showing how the standards will be met. The U.S. EPA also has programs to prevent significant deterioration of air quality and to identify and regulate toxic air pollutants.

3.6 CEQA Analysis/Requirement

CEQA applies to most California transportation projects (certain projects are statutorily exempt). California established ambient air quality standards as early as 1969 through the Mulford-Carrol Act. Air pollutants regulated under the 1989 California Clean Air Act (amended in 1992) are similar to those regulated under the Federal Clean Air Act. In many cases, California standards are more stringent than the NAAQS. The California Clean Air Act requires attainment of California ambient air quality standards (CAAQS). The California Air Resources Board (CARB) regulates mobile emissions sources and oversees the activities of county and regional air quality districts. CARB regulates local air quality indirectly by establishing vehicle emission standards through its planning, coordinating, and research activities.

4. Environmental Consequences

This section describes the methods, impact criteria, and results of air quality analyses of the proposed project. Analyses in this report were conducted using methodology and assumptions that are consistent with the requirements of NEPA, CEQA, the CAAAs of 1990, and the CCAA of 1988. Project-related emissions will have an adverse environmental impact if they result in pollutant emissions levels that either create or worsen a violation of an ambient air quality standard or contribute to an existing air quality violation.

4.1 Short-Term Effects (Construction Emissions)

4.1.1 Construction Equipment, Traffic Congestion, and Fugitive Dust

Site preparation and roadway construction will involve grading, removing or improving existing roadways, installing a traffic sign, and paving roadway surfaces. During construction, short-term degradation of air quality is expected from the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other activities related to construction. Emissions from construction equipment powered by gasoline and diesel engines are also anticipated and would include CO, NO_x, ROGs, directly emitted PM_{10} and $PM_{2.5}$, and toxic air contaminants (TACs) such as diesel exhaust particulate matter. Construction activities are expected to increase traffic congestion in the area, resulting in increases in emissions from traffic during the delays. These emissions would be temporary and limited to the immediate area surrounding the construction site.

Under the transportation conformity regulations (40 CFR 93.123(c)(5)), construction-related activities that cause temporary increases in emissions are not required in a hot-spot analysis. These temporary increases in emissions are those that occur only during the construction phase and last five years or less at any individual site. They typically fall into two main categories:

- *Fugitive Dust*: A major emission from construction due to ground disturbance. All air districts and the California Health and Safety Code (Sections 41700-41701) prohibit "visible emissions" exceeding three minutes in one hour – this applies not only to dust but also to engine exhaust. In general, this is interpreted as visible emissions crossing the right-of-way line.

  Sources of fugitive dust include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site may deposit mud on local streets, which could be an additional source of airborne dust after it dries. PM_{10} emissions may vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions depend on soil moisture, silt content of soil, wind speed, and the amount of equipment operating. Larger dust

particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

- *Construction equipment emissions*: Diesel exhaust particulate matter is a California-identified toxic air contaminant, and localized issues may exist if diesel-powered construction equipment is operated near sensitive receptors.

Construction emissions were estimated using the latest Caltrans' Model, CAL-CET2018, (version 1.3). Construction-related emissions for the proposed project are presented in Table 11 (a, b, c, and d). The results of the construction emission calculations are included in Appendix D. The emissions presented are based on the best information available at the time of calculations. The emissions represent the construction emissions generated by operation.

Table 11. Construction Emissions for Roadways.

(a) Variant A

Phases / Emissions	PM_{10} (tons)	$PM_{2.5}$ (tons)	CO (tons)	NO_x (tons)	ROGs (tons)	CO_2 (tons)
Land Clearing/Grubbing	0.102	0.020	0.14	0.17	0.026	40
Roadway Excavation/Removal	0.188	0.105	1.15	1.32	0.190	268
Structural Excavation/Removal	0.170	0.087	0.71	1.40	0.232	354
Base/Subbase/Imported Borrow	0.334	0.247	3.03	3.15	0.448	635
Structure Concrete	0.359	0.349	3.27	5.59	1.062	1,201
Paving	0.032	0.032	0.19	0.47	0.060	92
Drainage/Environment/Landscaping	0.051	0.050	0.28	0.64	0.099	119
Traffic Signalization/Signage/Striping/Painting	0.072	0.070	0.69	1.31	0.150	459
Project Total (US tons)	1.310	0.960	9.46	14.05	2.268	3,168

(b) Variant A1

Phases / Emissions	PM_{10} (tons)	$PM_{2.5}$ (tons)	CO (tons)	NO_x (tons)	ROGs (tons)	CO_2 (tons)
Land Clearing/Grubbing	0.101	0.019	0.13	0.15	0.023	35
Roadway Excavation/Removal	0.178	0.095	1.03	1.18	0.170	241
Structural Excavation/Removal	0.162	0.079	0.63	1.25	0.208	316
Base/Subbase/Imported Borrow	0.309	0.223	2.71	2.83	0.402	570

Phases / Emissions	PM_{10} (tons)	$PM_{2.5}$ (tons)	CO (tons)	NO_x (tons)	ROGs (tons)	CO_2 (tons)
Structure Concrete	0.322	0.313	2.93	5.00	0.952	1,073
Paving	0.029	0.028	0.17	0.42	0.054	82
Drainage/Environment/Landscaping	0.046	0.045	0.25	0.57	0.089	107
Traffic Signalization/Signage/Striping/Painting	0.064	0.063	0.61	1.17	0.135	412
Project Total (US tons)	1.211	0.864	8.47	12.58	2.032	2,835

(c) Variant B

Phases / Emissions	PM_{10} (tons)	$PM_{2.5}$ (tons)	CO (tons)	NO_x (tons)	ROGs (tons)	CO_2 (tons)
Land Clearing/Grubbing	0.104	0.022	0.17	0.21	0.031	48
Roadway Excavation/Removal	0.209	0.125	1.39	1.60	0.230	323
Structural Excavation/Removal	0.187	0.103	0.86	1.69	0.281	426
Base/Subbase/Imported Borrow	0.386	0.297	3.66	3.81	0.543	767
Structure Concrete	0.435	0.423	3.97	6.77	1.286	1,459
Paving	0.039	0.038	0.22	0.57	0.073	112
Drainage/Environment/Landscaping	0.062	0.061	0.34	0.77	0.120	143
Traffic Signalization/Signage/Striping/Painting	0.087	0.085	0.83	1.58	0.182	557
Project Total (US tons)	1.509	1.154	11.45	17.01	2.745	3,835

(d) Variant C

Phases / Emissions	PM_{10} (tons)	$PM_{2.5}$ (tons)	CO (tons)	NO_x (tons)	ROGs (tons)	CO_2 (tons)
Land Clearing/Grubbing	0.106	0.024	0.20	0.24	0.036	55
Roadway Excavation/Removal	0.226	0.142	1.60	1.83	0.263	370
Structural Excavation/Removal	0.201	0.117	0.98	1.94	0.322	490
Base/Subbase/Imported Borrow	0.429	0.340	4.20	4.38	0.622	880
Structure Concrete	0.498	0.485	4.54	7.76	1.474	1,667

Phases / Emissions	PM_{10} (tons)	$PM_{2.5}$ (tons)	CO (tons)	NO_x (tons)	ROGs (tons)	CO_2 (tons)
Paving	0.045	0.044	0.26	0.65	0.083	127
Drainage/Environment/Landscaping	0.071	0.069	0.39	0.89	0.138	164
Traffic Signalization/Signage/Striping/Painting	0.100	0.097	0.95	1.81	0.209	637
Project Total (US tons)	1.677	1.318	13.12	19.49	3.147	4,390

4.1.2 Asbestos

Based on review of the California Geological Survey[12], the proposed project location does not include the presence of ultramafic rocks or serpentinite and asbestos occurrences reported in the literature. Naturally Occurring Asbestos (NOA) is not specifically mapped in the area of this project where NOA is expected to occur. Areas and parcels moderately likely to contain NOA are located in the eastern parts of Sacramento County, Folsom and Rancho Murieta. Therefore, the impact from NOA during construction of the project would be minimal to none. However, construction of the proposed project will require the replacement of structures; therefore, there may be potential impact for structural asbestos.

The construction activities proposed by Caltrans may disturb NOA-containing soil/rock units, if present at the site. The California Air Resources Board (CARB) has mitigation practices for construction, grading, quarrying and surface mining operations that may disrturb natural occurrences of asbestos as outlined in CCR Title 17, §93105 – Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations (ATCM 93105). NOA potentially poses a health hazard when it becomes an airborne paticulate. Mitigation practices can reduce the risk of exposure to asbestos-containing dust. The primary mitigation practice used for controlling exposure to potentially asbestos-containing dust is the implementation of engineering controls including wetting the materials being disturb. If engineering controls do not adequately control exposure to potentially asbestos-containing dust, the use of personal protective equipment including wearing air purifying repieators with High Efficiency Paticulate Air (HEPA) filters is required during construction activities.

4.1.3 Lead

Lead is normally not an air quality issue for transportation projects unless the project involves disturbance of soils containing high levels of aerially deposited lead (ADL) or painting or modification of structures with lead-based coatings. Any potential ADL issues will be addressed within the Initial Site Assessment.

[12] Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California (source: ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ms/59/MS59_Pamphlet.pdf)

4.2 Long-Term Effects (Operational Emissions)

The purpose of this project is to replace the deck on the American River Bridge (Bridge No. 24-0003) on SR 51. The proposed modifications would not result in changes to the traffic volume, fleet mix, speed, location of existing facility or any other factor that would cause an increase in emissions relative to the no build alternative; therefore, this project would not cause an increase in operational emissions. No minimization measures are recommended for operational emissions.

4.3 Greenhouse Gas Emissions Analysis

4.3.1 Short-Term Effects (Constructional Emissions)

Construction is expected to begin in 2022 and last approximately 1,200 working days. The proposed project would result in generation of short-term construction-related GHG emissions. Construction GHG emissions consist of emissions produced as a result of material processing, emissions produced by on-site construction equipment, and emissions arising from traffic delays and detours due to construction. These emissions would be generated at different levels throughout the construction phase.

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 12 (a, b, c, and d) summarizes estimates of GHG emissions during the proposed construction periods for the project. The carbon dioxide equivalent (CO_2e) produced during construction is approximately estimated to be 4,763 metric tons in the variant A, 4,254 metric tons in the variant A1, 5,781 metric tons in the variant B, and 6,602 metric tons in the variant C.

Table 12. Estimates (US tons) of GHG Emissions during Construction

(a) Variant A

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

(b) Variant A1

Construction Year	CO_2 (US tons)	CH_4 (US tons)	N_2O (US tons)	HFCs (US tons)	CO_2e^* (US tons)
2022	535	0.016	0.032	0.017	796.536
2023	831	0.026	0.040	0.027	1,243.17
2024	501	0.016	0.024	0.023	848.952
2025	462	0.015	0.023	0.021	780.029
2026	507	0.014	0.036	0.034	1,021.278
Total	2835	0.087	0.155	0.122	4,688.965

(c) Variant B

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	3,835	0.126	0.210	0.167	6,372.330

(d) Variant C

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	1,928.076
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). Each GWP of CO_2, CH_4, N_2O, and HFCs is 1, 25, 298, and 14,800, respectively.

4.3.2 Long-Term Effects (Operational Emissions)

This project is to remove and replace existing concrete deck and steel girder strengthening posttensioning systems on the American River Bridge (Bridge No. 24-0003), widening the superstructure of the bridge to accommodate traffic during construction. The project would not increase capacity or change travel demands or traffic patterns when compared to the no-build alternative. Since this project would not increase capacity of the roadway, an increase in operational GHG is not anticipated.

4.4 Cumulative/Regional/Indirect Effects

Under SB 375, SACOG, as the region's Metropolitan Planning Organization (MPO), has been designated by the state to prepare the area's "Sustainable Communities Strategy" (SCS) as an additional element of the MTP. The SCS is the forecasted development pattern for the region, which, when integrated into with the transportation network, and other transportation measures and policies, will meet the passenger vehicle greenhouse gas reduction target for the area. SB 375 prompts regions to reduce GHG emissions from passenger vehicles through the coordinated planning of long-range transportation plans. The legislation requires all MPO in California to develop a SCS as an additional element of their regional transportation plans. SACOG's 2020 MTP/SCS was adopted on November 18, 2019.

In the 2020 plan, SACOG does a better job than before in explaining travel behavior in the region and the importance of VMT reduction and the need for change. SACOG has determined explicit VMT reduction targets to meet California's 2050 climate goals, and has illustrated that the region is not meeting them. What is still lacking is an explanation of how these methodologies would be applied to specific projects, or across the plan cumulatively. To fully exhibit how the plan operates, SACOG should break out the major road and transit investments, with a full per-project performance and cost/benefits analysis. This would go beyond the SB 375 mandate but would illustrate how the major investments of regional import interact and would go a long way to understanding the trade-offs to be considered. This would be a valuable next step for SCS implementation, and SACOG's leadership would be valuable. While the explanation of VMT and the methodologies employed are very informative, the MTP/SCS provides little illustration of how final determinations are made. Specifically, there is little clarity on how a reduction of 6% in VMT per capita translates to a 19% GHG reduction. This determination continues to be a "black box" of modeling to the layperson, which SACOG has the tools to better illuminate.

5. Minimization Measures

5.1 Short-Term (Construction)

Caltrans special provisions and standard specifications include the requirement to minimize or eliminate dust through application of water or dust palliatives. The following construction dust and equipment exhaust emissions measures shall be implemented when practical, during all phases of construction work:

- Control measures will be implemented as specified in Caltrans 2018 Standard Specifications Section 10-5 "Dust Control", Section 14-9 "Air Quality" and Section 18 "Dust Palliatives".
- Adhere to SMAQMD Rule 403 (Fugitive Dust)
- Implement all feasible PM control measures recommended by the SMAQMD Rule 404
- Implement Fugitive Dust Control Plan

The SMAQMD CEQA Guidelines provide the Basic Construction Emissions Control Practices that are considered feasible for controlling fugitive dust from a construction site. The practices also serve as best management practices (BMPs), allowing the use of the non-zero particulate matter significance thresholds. Lead agencies should add these emission control practices as Conditions of Approval (COA) or include in a Mitigation Monitoring and Reporting Program (MMRP).

- Control of fugitive dust is required by District Rule 403 and enforced by District staff.
- Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
- Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.
- Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
- Limit vehicle speeds on unpaved roads to 15 miles per hour (mph).
- All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.

The following practices describe exhaust emission control from diesel powered fleets working at a construction site. California regulations limit idling from both on-road and off-road diesel-powered

equipment. The California Air Resources Board (CARB) enforces idling limitations and compliance with diesel fleet regulations.

- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site.
- Provide current certificate(s) of compliance for CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation [California Code of Regulations, Title 13, sections 2449 and 2449.1].

Although not required by local or state regulation, many construction companies have equipment inspection and maintenance programs to ensure work and fuel efficiencies.

- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.

5.2 Long-Term (Operational)

This project would not change traffic volume, fleet mix, speed, or any other factor that would cause an increase in emissions relative to the no build alternative; therefore, this project would not cause an increase in operational emissions. No minimization measures are recommended for operational emissions.

6. Conclusions

The proposed project anticipates temporary short-term air quality impacts; however, these impacts will be reduced with incorporation of the minimization measures. The purpose of this project is to replace the deck on the American River Bridge (Bridge No. 24-0003) on SR 51 in Sacramento County, and the project would not cause an increase in operational emissions. Consequently, operational air quality impacts would not be substantial, and no cumulatively considerable impacts to criteria pollutants and GHG are anticipated.

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. This project is listed and financially constrained in MTIP and 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.

7. References

California Air Resources Board (2016) Ambient Air Quality Standards. Available at http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.

California Air Resources Board (2018) California State Implementation Plans. Available at http://arb.ca.gov/planning/sip/sip.htm.

California Air Resources Board (2018) iADAM: Air Quality Data Statistics. Available at http://www.arb.ca.gov/adam/topfour/topfour1.php.

California Air Resources Board (2015) Meteorological Files. Available at http://www.arb.ca.gov/toxics/harp/metfiles2.htm.

California Department of Transportation (2018) Standard Specifications. Prepared by the State of California Department of Transportation. Available at http://www.dot.ca.gov/hq/esc/oe/construction_contract_standards/std_specs/2018_StdSpecs/2018_StdSpecs.pdf.

California Department of Conservation, Division of Mines and Gelogy (2000) A General Location Guide for Ultramafic Rocks in California-Areas More Likely to Contain Naturally Occurring Asbestos. Available at http://www.consrv.ca.gov.

California Department of Transportation CAL-CET2018, Version 1.3.

Iowa Environmental Mesonet (2018) Wind Roses in Sacramento/Sacramento County. Available at https://mesonet.agron.iastate.edu/sites/windrose.phtml?network=CA_ASOS&station=SMF.

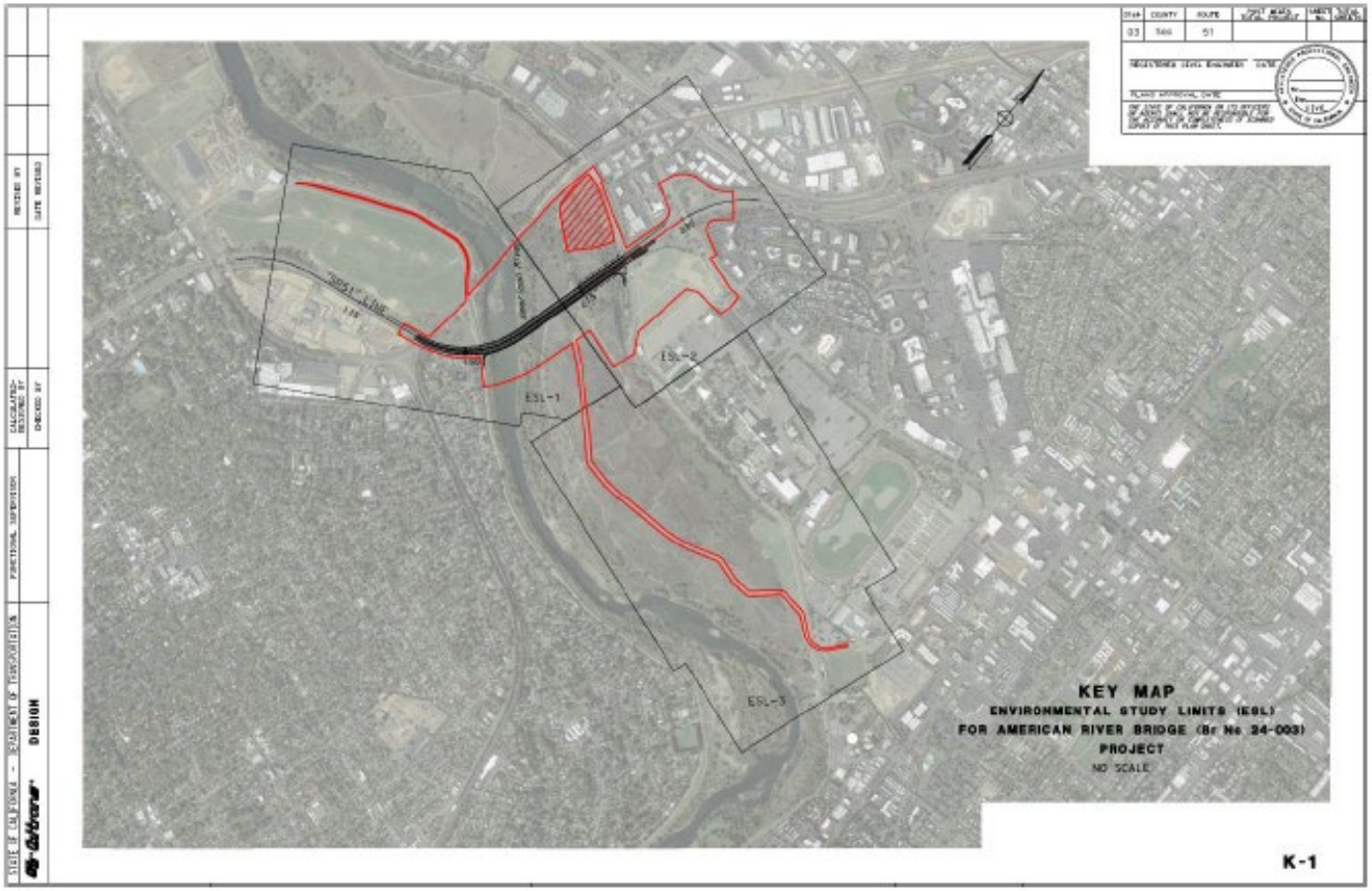
Sacramento Metropolitan Air Quality Management District (SMAQMD) CEQA Guidelines (2019) Construction Generated Emissions of Criteria Air Pollutants. Available at http://www.airquality.org/businesses/ceqa-land-use-planning/ceqa-guidance-tools

U.S. Climate Data (2018) Climate Sacramento, California. Available at https://www.usclimatedata.com/climate/sacramento/california/united-states/usca0967.

U.S. Gological Survey (2011), Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California. Report prepared by Bradley Van Gosen and John Clinkenbeard, Report2011-1188. Available at ftp://ftp.consrv.ca.gov/pub/dmg/pubs/ms/59/MS59_Pamphlet.pdf.

8. Appendices

Appendix A. Environmental Study Limit Maps and Layout


ESL-1
ESL-2
ESL-3
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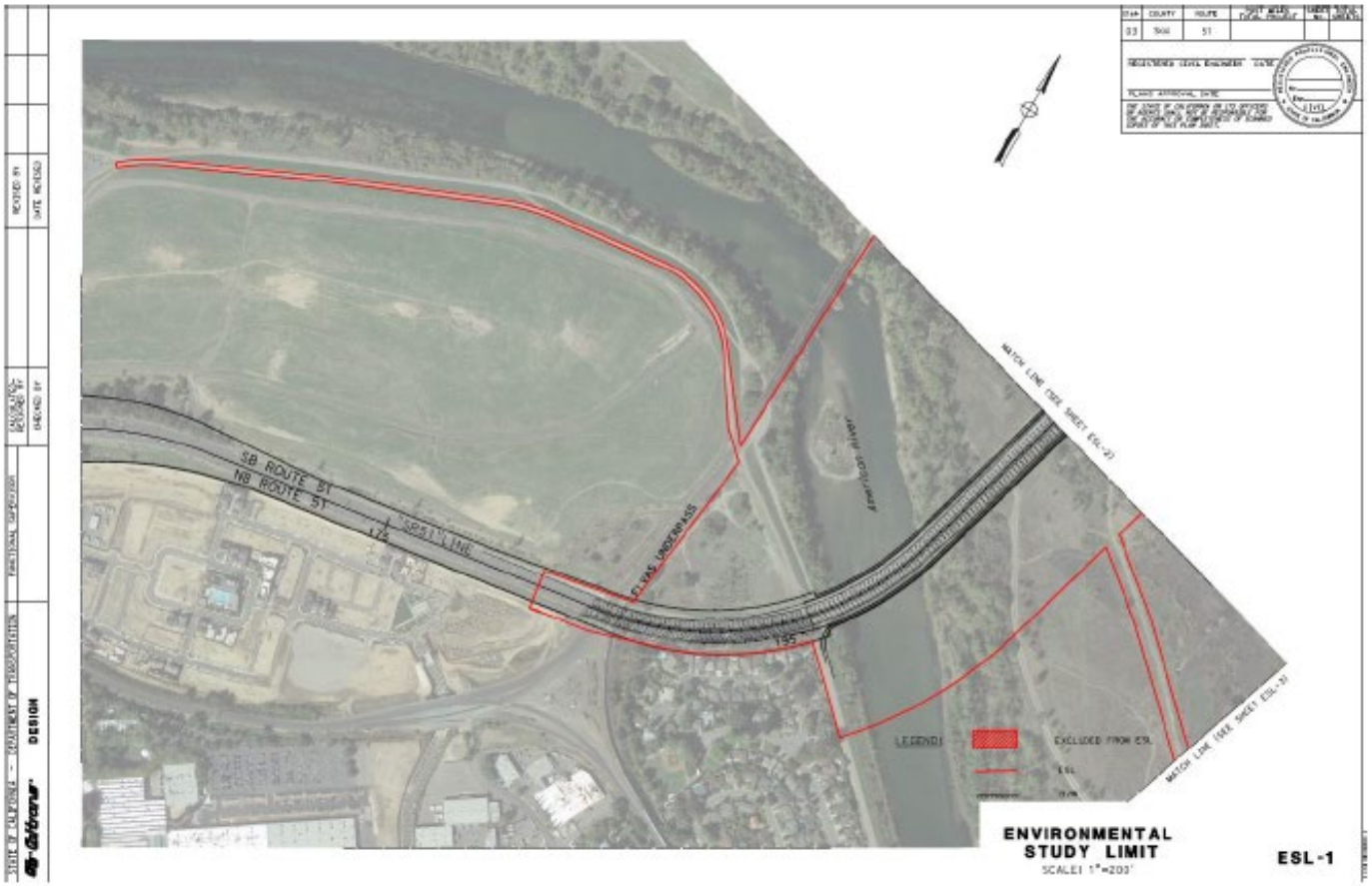
FOR AMERICAN RIVER BRIDGE (Br No 24-003)
PROJECT
NO SCALE
K-1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NB ROUTE 51
SPUR LINE
CLEAR UNDERPASS
JAMES DRIVE
MATCH LINE (SEE SHEET ESL-2)
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ESL
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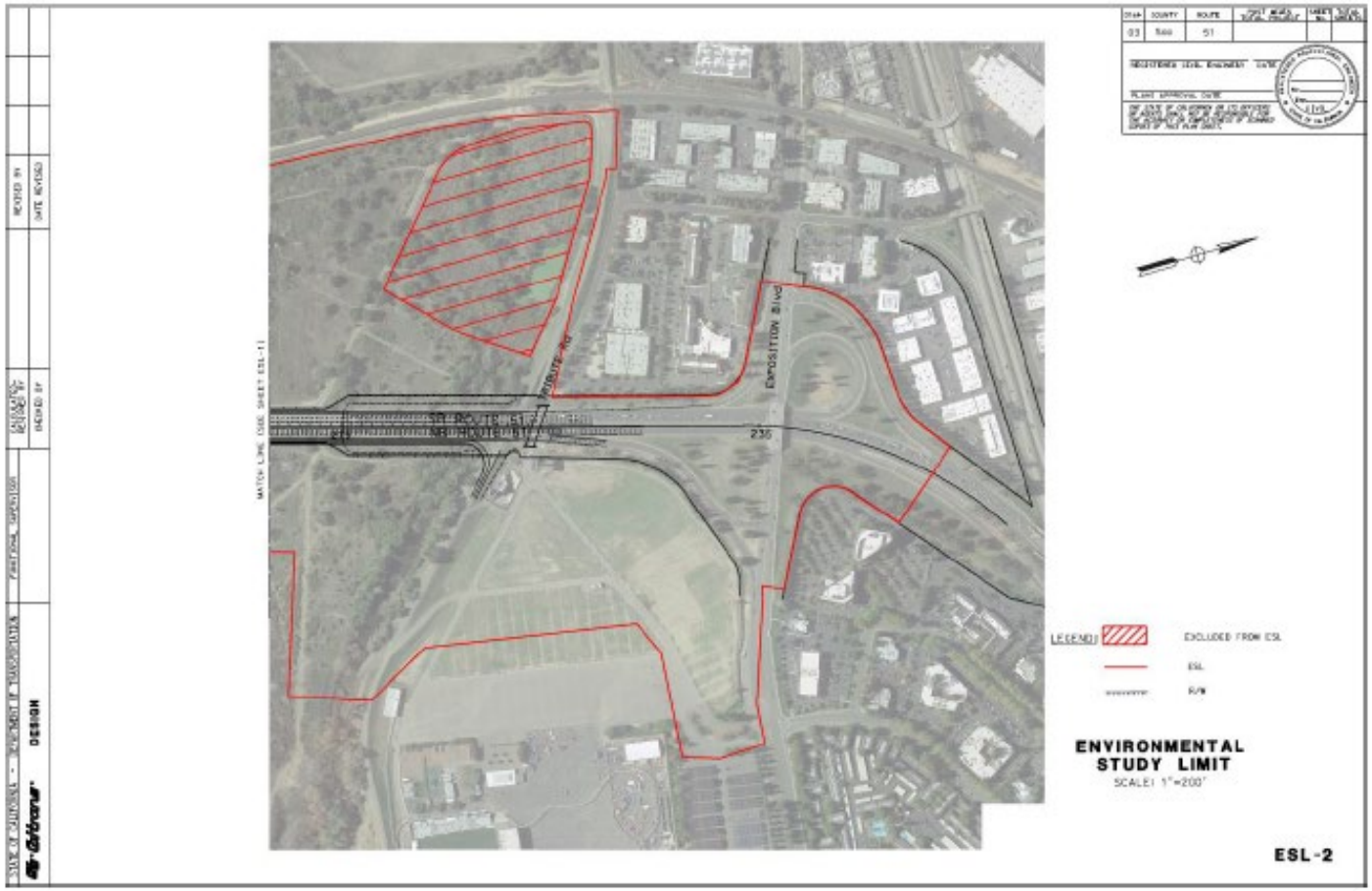
SCALE: 1"=200'
ESL-1
DESIGN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236
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ESL-2
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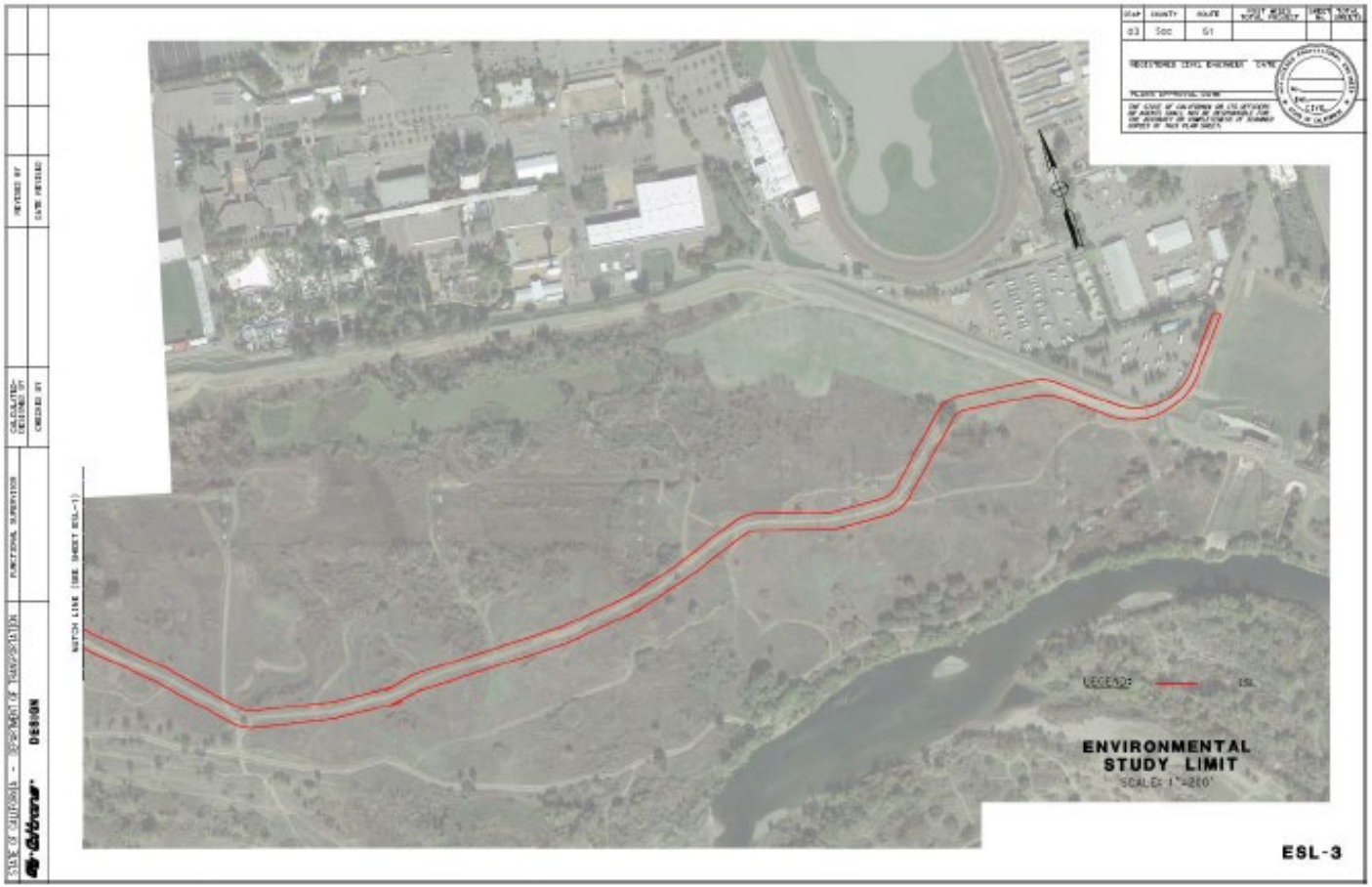
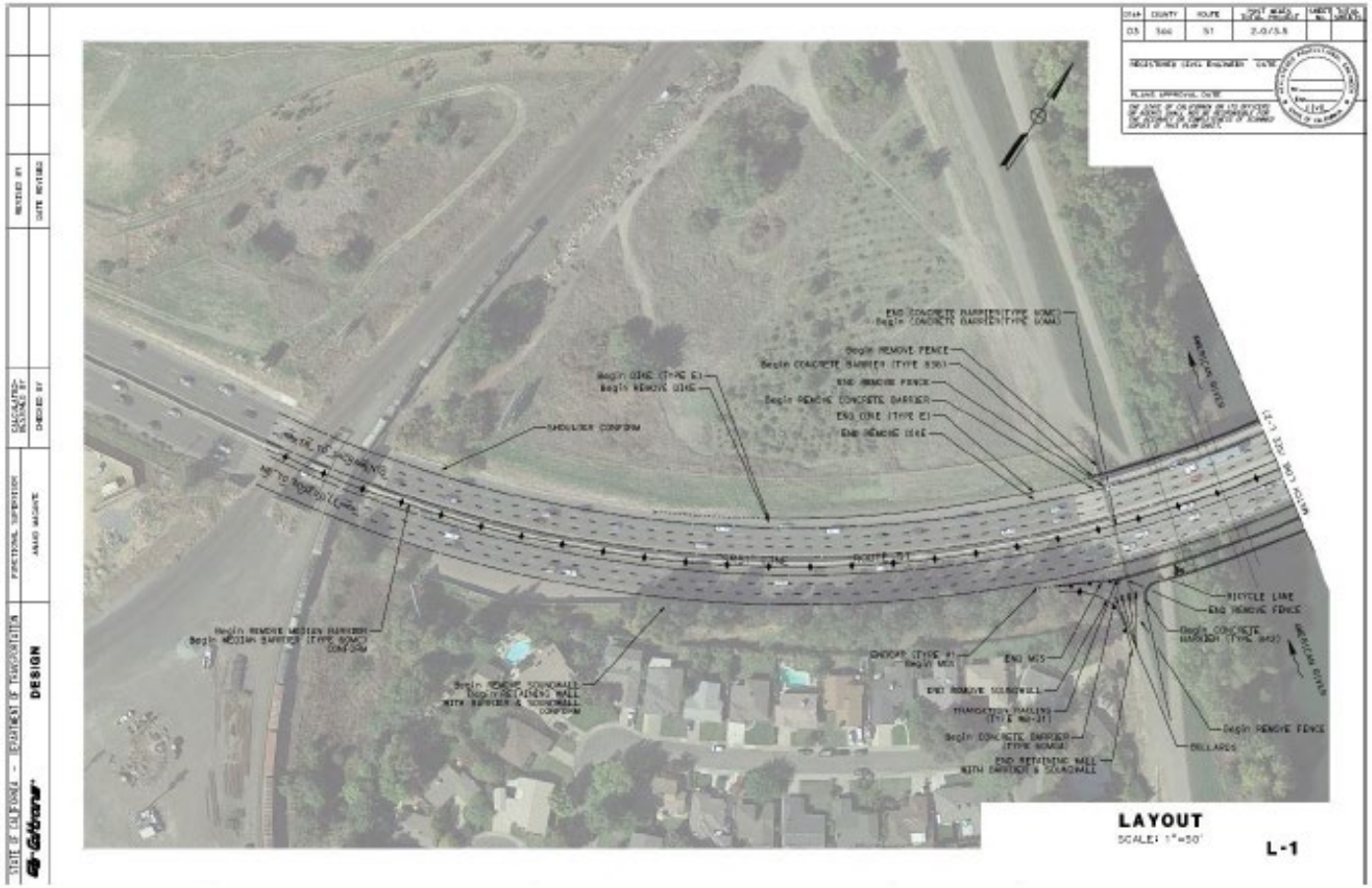
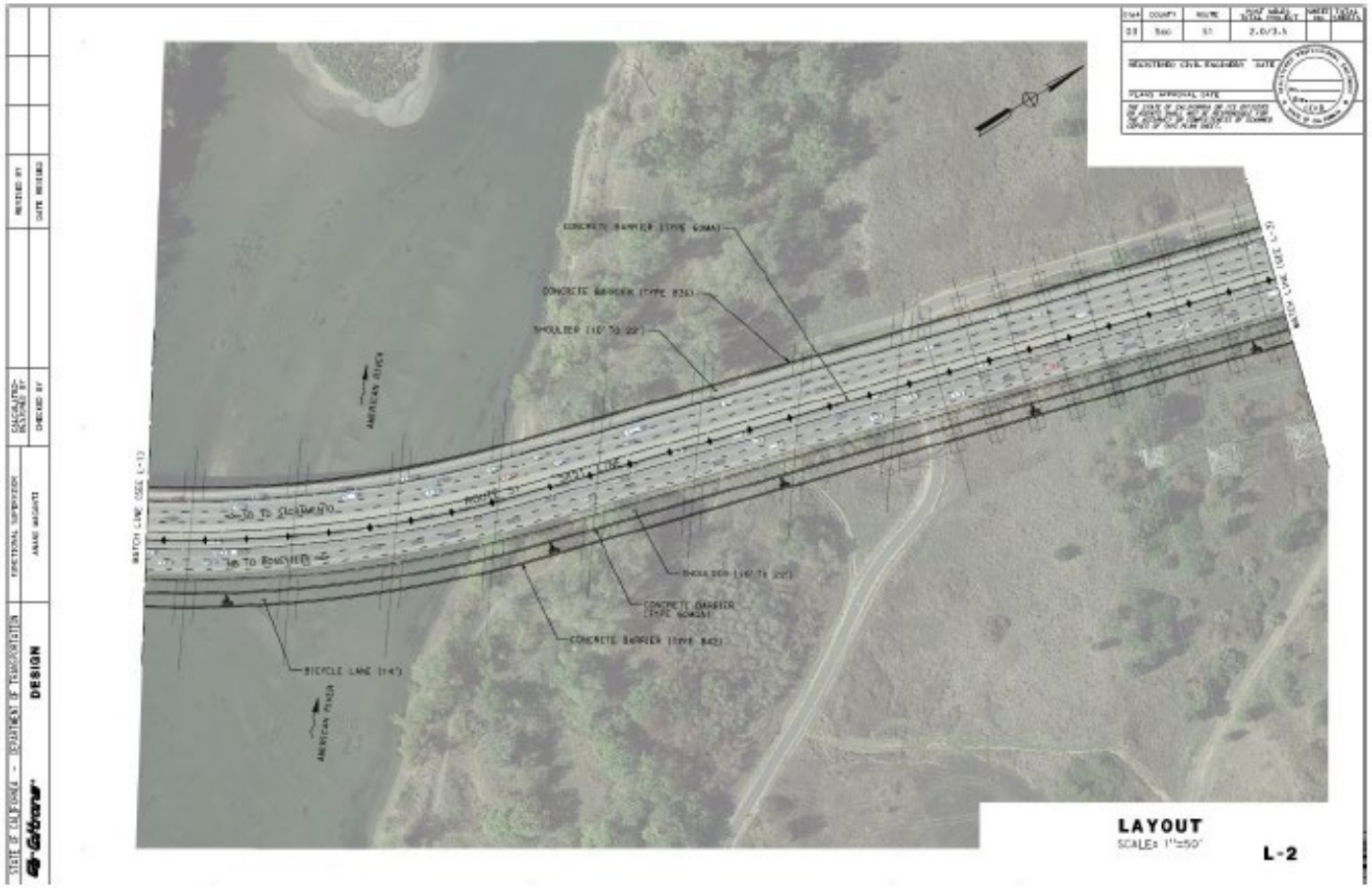
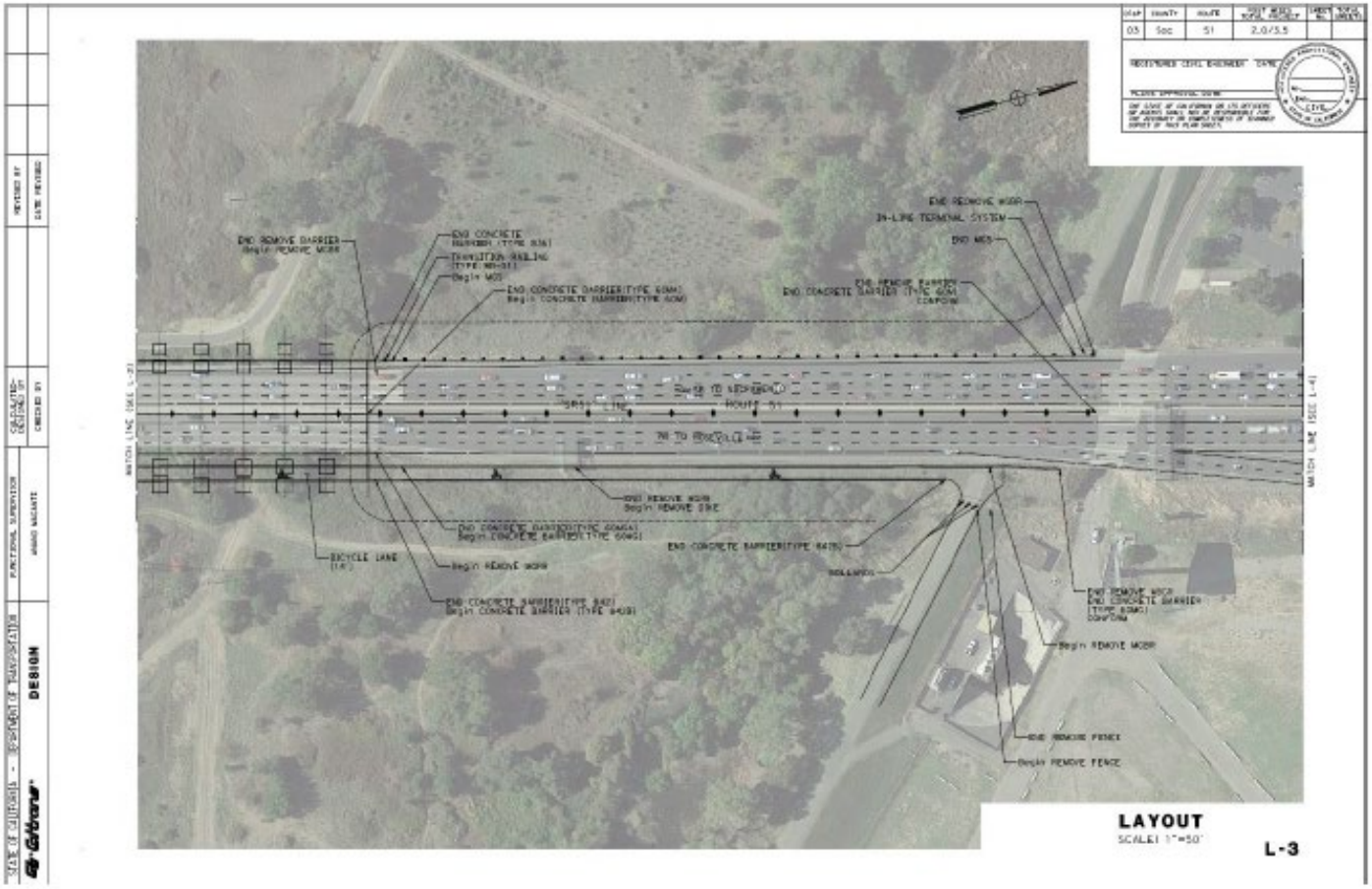

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FUNCTIONAL SUPERVISOR
CALCULATED-DESIGNED BY
CHECKED BY
REVISED BY
DATE REVISED
MATCH LINE (SEE SHEET ESL-1)
LEGEND
ESL
ENVIRONMENTAL STUDY LIMIT
SCALE: 1"=200'
ESL-3


STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FUNCTIONAL SUPERVISOR
ANJAD MASHAYE
CALCULATED-DESIGNED BY
CHECKED BY
REVISED BY
DATE REVISED
DIST
COUNTY
ROUTE
POST MILES
TOTAL PROJECT
SHEETS
NO.
TOTAL
03
Sac
51
2.0/5.8
REGISTERED CIVIL ENGINEER
DATE
PLANS APPROVAL DATE
SHOULDER CONFORM
Begin DIKE (TYPE E)
Begin REMOVE DIKE
End REMOVE DIKE
Begin REMOVE FENCE
Begin CONCRETE BARRIER (TYPE 60B)
End REMOVE FENCE
Begin REMOVE CONCRETE BARRIER
End DIKE (TYPE E)
End CONCRETE BARRIER(TYPE 60B)
Begin CONCRETE BARRIER(TYPE 60B)
AMERICAN RIVER
WESTBOUND
EASTBOUND
BICYCLE LINE
End REMOVE FENCE
Begin CONCRETE BARRIER (TYPE 60B)
Begin REMOVE FENCE
BOLLARDS
End MES
End REMOVE SOUNDWALL
End RETAINING WALL WITH BARRIER & SOUNDWALL
Begin REMOVE MEDIAN BARRIER
Begin MEDIAN BARRIER (TYPE 60B)
Begin REMOVE SOUNDWALL
Begin RETAINING WALL WITH BARRIER & SOUNDWALL CONFORM
LAYOUT
SCALE: 1"=50'
L-1


STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FIELD/FINAL SUPERVISOR
ANAND MAGANTI
CALCULATED-DESIGNED BY
CHECKED BY
REVISED BY
DATE REVISED
DIST
COUNTY
ROUTE
TOTAL PROJECT
SHEET NO.
TOTAL SHEETS
REGISTERED CIVIL ENGINEER
DATE
PLANS APPROVAL DATE
CONCRETE BARRIER (TYPE 60MA)
CONCRETE BARRIER (TYPE 82G)
SHOULDER (10' TO 22')
AMERICAN RIVER
TO SACRAMENTO
TO BONEVILLE
BICYCLE LANE (14')
CONCRETE BARRIER (TYPE 60MGA)
CONCRETE BARRIER (TYPE 84G)
LAYOUT
SCALE: 1"=50'
L-2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END WOS
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MATCH LINE (SEE L-2)
MATCH LINE (SEE L-4)
ROUTE 51
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BICYCLE LANE
Begin REMOVE WORK
END CONCRETE BARRIER(TYPE 60M)
Begin CONCRETE BARRIER (TYPE 60M)
END REMOVE WORK
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(TYPE 60M)
CONFORM
Begin REMOVE WORK
END REMOVE FENCE
Begin REMOVE FENCE
LAYOUT
SCALE: 1"=50'
L-3
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FUNCTIONAL SUPERVISOR
HANNO BACHATE
CHECKED BY
REVISED BY
DATE REVISED

Appendix B. MTIP Listing and Approval for the Project

SACOG

Final

2019-20 **MTIP** METROPOLITAN TRANSPORTATION IMPROVEMENT PROGRAM

Adopted September 20, 2018

48

U.S. Department of Transportation

Federal Highway Administration
California Division
650 Capitol Mall, Suite 4-100
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(916) 498-5001
(916) 498-5008

Federal Transit Administration
Region 9
90 7th Street, Suite 15-300
San Francisco, CA 94103
(415) 734-9490 – Main

December 17, 2018

In Reply Refer To:
HDA-CA

Mr. Bruce de Terra
Chief, Division of Transportation Programming
California Department of Transportation, MS 82
1120 N Street
Sacramento, CA 95814

SUBJECT: APPROVAL OF 2019 FSTIP AND PLANNING FINDING

Dear Mr. De Terra:

The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have determined that the State of California's 2019-22 Federal Statewide Transportation Improvement Program (FSTIP) and incorporated Federal Transportation Improvement Programs (FTIP) for the following metropolitan planning organization (MPO) planning areas are based on a continuing, cooperative and comprehensive transportation planning process in accordance with 23 U.S.C. 134 and 135, and 49 U.S.C. 5303 and 5304. The approval of the FSTIP includes the following metropolitan FTIPs that have been incorporated by reference:

1. Association of Monterey Bay Governments,
2. Butte County Association of Governments,
3. Fresno Council of Governments,
4. Kern Council of Governments,
5. Kings County Association of Governments,
6. Madera County Transportation Commission,
7. Merced County Association of Governments,
8. Metropolitan Transportation Commission,
9. Sacramento Area Council of Governments,
10. San Diego Association of Governments,
11. San Joaquin Council of Governments,
12. San Luis Obispo Council of Governments,
13. Santa Barbara County Association of Governments,
14. Shasta Regional Transportation Agency,
15. Southern California Association of Governments,
16. Stanislaus Council of Governments,
17. Tahoe Regional Planning Agency, and
18. Tulare County Association of Governments.

The following are recommendations for transportation planning process improvements that remain outstanding from the December 16, 2016 or earlier Statewide Planning Findings that warrant continued attention in the statewide and metropolitan planning processes in the State of California:

I. Core MPO Planning Functions: Progress has been made by MPOs in identifying Core Planning Functions within their Overall Work Programs (OWP). However, we encourage Caltrans to continue working closely with the MPOs in their OWP development processes to ensure that the draft and final OWPs include, at a minimum, the following work elements: Overall Work Program, Public Participation Activities, Metropolitan/Regional Transportation Plan, Federal Transportation Improvement Program; Congestion Management Process (required for Transportation Management Areas (TMA) – MPOs over 200,000 in population), Performance-Based Transportation Planning and Programming (Performance Measures), Air Quality Planning and Conformity (in all non-attainment areas for the National Ambient Air Quality Standards as defined by the 1990 Clean Air Act and subsequent changes to those standards) and the Annual Listing of Obligated Projects.

II. Implementation of Performance-Based Transportation Planning and Programming: Sections 1201 and 1202 of MAP-21 require that the metropolitan and statewide transportation planning processes provide for the establishment and use of a performance-based approach to transportation decision making to support the national goals described in 23 U.S.C. 1509(b) and 49 U.S.C. 5301(c). Each State and each MPO is required to establish performance targets that address the Performance Measures described in 23 U.S.C 150(c) [MAP-21 section 1203].

USDOT issued the schedules for compliance with Performance-Based Transportation Planning since the December 16, 2016 Statewide Planning Finding. We find that in the State of California, compliance with the schedules for PM-1, PM-2 and PM-3 is proceeding satisfactorily. We applaud the diligent efforts of Caltrans and the MPOs in establishing master agreements for conducting the process, the training workshops and outreach, establishing targets for the Performance Measures, and submitting all required data and reports in compliance with the established schedules.

FHWA and FTA recognize that the implementation and full integration of Performance-Based Planning and Programming into the planning and programming processes in California will be a complex task likely to consume a number of upcoming FSTIP and Regional Transportation Plan (RTP) cycles. We will continue during this transition period and after full implementation to work closely with the State, MPOs and transit operators in providing technical assistance and best practices.

III. Consultation with Indian Tribal Governments and Federal Land Management Agencies: MPOs are required to develop a documented procedure that outlines the roles, responsibilities, and key decision points for consulting with Indian Tribal governments (ITG) and Federal land management agencies (FLMA) pursuant to 23 C.F.R. 450.316(c). The need for MPOs to develop documented procedures for consulting with Indian Tribal

governments and Federal land management agencies continues to be a Federal emphasis area for the MPOs within California.

Progress has been made since the December 16, 2016 Statewide Planning Finding in this area in California, and FHWA and FTA commend Caltrans and the MPOs in the work that has been done to meet requirements. However, to ensure that progress continues in a positive direction, compliance with the requirement for documented consultation procedures will continue to be evaluated by FHWA and FTA as part of the Quadrennial Planning Certification Reviews that are conducted in the TMA MPOs.

IV. Outstanding Corrective Actions from Quadrennial TMA Planning Certification Reviews: There is one outstanding Corrective Action identified through the MPO/TMA Planning Certification Reviews since the December 16, 2016 Statewide Planning Finding. Specifically, the Planning Certification Review for one TMA MPO cited the need to update and develop an integrated Congestion Management Process (CMP), including: Definition of the CMP network, measures of congestion, collection of data, and the development of a continuous monitoring process to maintain the CMP and to ensure that the output of the CMP is used in the MPO planning and programming processes.

Accordingly, the Federal Highway Administration California Division and the Federal Transit Administration Region IX offices find that California's 2019-22 Statewide Transportation Improvement Program (FSTIP) is based on a transportation planning process that meets the requirements of 23 U.S.C. Sections 134 and 135 and 49 U.S.C. Section 5303-5306.

Sincerely,

Edward Carranza, Jr.
Acting Regional Administrator
Region IX
Federal Transit Administration

For
Vincent P. Mammano
Division Administrator
California Division
Federal Highway Administration

51

cc: (e-mail)
Ted Matley, FTA Region IX
Darin Allan, FTA Region IX
Katrina O'Connor, EPA
Enos Han, FHWA Nevada Division
Morgan Malley, FHWA CFL
Fardad Falakfarsa, Caltrans
Muhaned Aljabiry, Caltrans

cc: (other)
2019 FSTIP I: Drive Folder
I:\Program Development Unit\Planning and Air Quality (2005-Present)\2019 FSTIP Approval
MPO Statewide FTIPs

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

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

Making Conservation a California Way of Life.

November 2, 2018

Mr. Vincent Mammano
Division Administrator
Federal Highway Administration
650 Capitol Mall, Suite 4-100
Sacramento, CA 95814

Attention: Ms. Tashia Clemons

Mr. Edward Carranza, Jr.
Regional Administrator
Federal Transit Administration,
90 Seventh Street, Suite 15-300
San Francisco, CA 94103-6701

Attention: Mr. Ted Matley

Dear Ms. Clemons and Mr. Matley:

In accordance with Section 450.218 of Title 23 Code of Federal Regulations (CFR), the California Department of Transportation (Caltrans) is submitting for your joint approval the State of California's 2019 Federal Statewide Transportation Improvement Program (FSTIP). The 2019 FSTIP covers a four-year period, federal fiscal years 2019 through 2022. It incorporates by reference projects listed in the Metropolitan Planning Organization (MPO) 2019 Federal Transportation Improvement Programs (FTIPs) and includes projects in the rural non-MPO areas of the state.

I certify that the 2019 FSTIP was developed in accordance with the applicable requirements of the federal transportation statutes and in compliance with Title 23 CFR 450. 216. Under the authority delegated to me by the Governor, I approve the inclusion of MPOs' 2019 FTIPs into the 2019 FSTIP. Thank you and your staff for their cooperation and assistance during the development of this FSTIP. I look forward to your approval.

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and liveability"

53

Mr. Vincent Mammano/Mr. Edward Carranza, Jr.
November 2, 2018
Page 2

If you have any questions, please contact my office at (916) 654-6130.

Sincerely,

LAURIE BERMAN
Director

Enclosure
2019 Federal Statewide Transportation Improvement Program

c: MPO Executive Directors
Regional Transportation Planning Agency Executive Directors

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

Appendix 6 List of Individually Listed Projects and Grouped Project Listings

SACOG ID CAL20507 | SAC | Lead Agency Caltrans D3 | Project 124 of 552

Project Title

Sub-Project of Group34 - SR 12 Bridge Rehab Near Rio Vista

EA Number 3F570 | Last Revised 19-00 | Completion Year 2020

PPNO: 5959

Fed FY	Revenue Source	Engineering	Right of Way	Construction	Total Revenue
<19		$1,096,000	$61,000	$35,900,000	$37,057,000
		$1,096,000	$61,000	$35,900,000	$37,057,000

Project Description

In Sacramento and Solano counties, near Rio Vista, at Sacramento River Bridge #23-0024 - Clean and repaint steel surfaces (PM 0.0/0.4) [EFIS ID 0313000139; CTIPS ID 107-0000-0951] [Total Project Cost $22,705,000 in 16/17 FY] (Toll Credits for PE)

Listed for Information Only

Bridge Number: 23-0024

Federal Project | Total Cost $37,057,000 | Exempt Category: Widening narrow pavements or reconstructing bridges (no additional travel lanes)

SACOG ID CAL20691 | SAC | Lead Agency Caltrans D3 | Project 125 of 552

Project Title

Sub-Project of Group34 - SR 51 Bridge Deck Replacement (G13 Contingency Project)

EA Number 3F070 | Last Revised 19-00 | Completion Year 2024

PPNO: 6402

Fed FY	Revenue Source	Engineering	Right of Way	Construction	Total Revenue
<19		$4,340,000			$4,340,000
2020	SHOPP - Bridge Preservation (SHOPP AC)	$12,000,000	$600,000		$12,600,000
2022	SHOPP - Bridge Preservation (SHOPP AC)		$2,000,000		$2,000,000
>22				$145,000,000	$145,000,000
		$16,340,000	$2,600,000	$145,000,000	$163,940,000

Project Description

In the City of Sacramento at the American River Bridge #24-0003, from north of B Street Underpass to north of Exposition Boulevard Overcrossing (PM 2.0/3.5) - Widen and replace bridge deck (G13 Contingency Project) [CTIPS ID 107-0000-1048]. Toll Credits for ENG

Bridge Number: 24-0003

Federal Project | Total Cost $163,940,000 | Exempt Category: Widening narrow pavements or reconstructing bridges (no additional travel lanes)

Appendix C. Transportation Air Quality Conformity Findings Checklist

Rev. April 2019

Transportation Air Quality Conformity Findings Checklist

Project Name:	Bridge Deck Replacement		
Dist-Co-Rte-PM:	03-SAC-51-2.0/3.5	**EA:**	03-3F070
Federal-Aid No.:			
Document Type:	☒ 23 USC 326 CE ☐ 23 USC 327 CE ☐ EA ☐ EIS		

Step 1. Is the project located in a nonattainment or maintenance area for ozone, nitrogen dioxide, carbon monoxide (CO), PM2.5, or PM10 per EPA's Green Book listing of non-attainment areas?

☐ If no, go to Step 17. **Transportation conformity does not apply to the project.**

☒ If yes, go to Step 2.

Step 2. Is the project exempt from conformity per 40 CFR 93.126 or 40 CFR 93.128?

☒ If yes, go to Step 17. **The project is exempt from all project-level conformity requirements (40 CFR 93.126 or 128)** (check one box below and identify the project type, if applicable).

☒ 40 CFR 93.126[1] Project type from Table 2: Safety (Widening narrow pavements or reconstructing bridge (no additional travel lanes)

☐ 40 CFR 93.128

☐ If no, go to Step 3.

Step 3. Is the project exempt from regional conformity per 40 CFR 93.127?

☐ If yes, go to Step 9. **The project is exempt from regional conformity requirements (40 CFR 93.127)** (identify the project type). Project type: _____

☐ If no, go to Step 4.

Step 4. Is the project located in a region with a currently conforming RTP and TIP?

☐ **If yes, the project is included in a currently conforming RTP and TIP per 40 CFR 93.115. The project's design and scope have not changed significantly from what was assumed in RTP conformity analysis (40 CFR 93.115[b])** Go to Step 8.

☐ If no and the project is located in an isolated rural area, go to Step 5.

☐ If no and the project is not located in an isolated rural area, STOP and do not proceed until a conforming RTP and TIP are adopted.

Step 5. For isolated rural areas, is the project regionally significant per 40 CFR 93.101, based on review by Interagency Consultation?

☐ If yes, go to Step 6.

☐ If no, go to Step 8. **The project, located in an isolated rural area, is not regionally significant and does not require a regional emissions analysis (40 CFR 93.101 and 93.109[l]).**

Step 6. Is the project included in another regional conformity analysis that meets the isolated rural area analysis requirements per 40 CFR 93.109, including Interagency Consultation and public involvement?

☐ If yes, go to Step 8. **The project, located in an isolated rural area, has met its regional analysis requirements through inclusion in a previously-approved regional conformity analysis that meets current requirements (40 CFR 93.109[l]).**

☐ If no, go to Step 7.

Step 7. The project, located in an isolated rural area, requires a separate regional emissions analysis.

☐ **Regional emissions analysis for regionally significant project, located in an isolated rural area, is complete. Regional conformity analysis was conducted that includes the project and reasonably foreseeable regionally significant projects for at least 20 years. Interagency Consultation and public participation were conducted. Based on the analysis, the interim or emission budget conformity tests applicable to the area are met (40 CFR 93.109[l] and 95.105).**[2] Go to Step 8.

Step 8. Is the project located in a CO nonattainment or maintenance area? (South Coast Air Basin only)

☐ If no, go to Step 9. **CO conformity analysis is not required.**

☐ If yes, **hot-spot analysis requirements for CO per the** CO Protocol (or per EPA's modeling guidance. CAL3QHCR can be used with EMFAC emission factors[3]) **have been met. Project will not cause or contribute to a new localized CO violation (40 CFR 93.116 and 93.123)**[4]. Go to Step 9.

---

[1] Please refer to Clarifications on Exempt Project Determinations (http://www.dot.ca.gov/ser/downloads/guidance/ep-clarifications-exempt-project-determinations.pdf) to verify exempt project type from Table 2. Road diets, auxiliary lanes less than one-mile, and ramp metering may be exempt under "projects that correct, improve, or eliminate a hazardous location or feature."

[2] The analysis must support this conclusion before going to the next step.

[3] Use of the CO Protocol is strongly recommended due to its use of screening methods to minimize the need for modeling. When modeling is needed, the Protocol simplifies the modeling approach. Use of CAL3QHCR must follow U.S. EPA's latest CO hot spot guidance, using EMFAC instead of MOVES, see: http://www.epa.gov/otaq/stateresources/transconf/projectlevel-hotspot.htm#co-hotspot.

[4] As of October 1, 2007, there are no CO nonattainment areas in California. Therefore, the requirements to not worsen existing violations and to reduce/eliminate existing violations do not apply.

1

Rev. April 2019

Step 9. Is the project located in a PM10 and/or a PM2.5 nonattainment or maintenance area?

☐ If no, go to Step 13. **PM2.5/PM10 conformity analysis is not required.**

☐ If yes, go to Step 10.

Step 10. Is the project considered to be a Project of Air Quality Concern (POAQC), as described in EPA's Transportation Conformity Guidance for PM 10 and PM 2.5?

☐ If no, **the project is not a project of concern for PM10 and/or PM2.5 hot-spot analysis based on 40 CFR 93.116 and 93.123 and EPA's Hot-Spot Analysis Guidance. Interagency Consultation concurred with this determination on** _____. Go to Step 12.

☐ If yes, go to Step 11.

Step 11. The project is a POAQC.

☐ **The project is a project of concern for PM10 and/or PM2.5 hot-spot analysis based on 40 CFR 93.116 and 93.123, and EPA's Hot-Spot Guidance. Interagency Consultation concurred with this determination on** _____. **Detailed PM hot-spot analysis, consistent with 40 CFR 93.116 and 93.123 and EPA's Hot-Spot Guidance, shows that the project would not cause or contribute to, or worsen, any new localized violation of PM10 and/or PM2.5 standards.** Go to Step 12.

Step 12. Does the approved PM SIP include any PM10 and/or PM2.5 control measures that apply to the project, and has a written commitment been made as part of the air quality analysis to implement the identified SIP control measures? [Control measures can be found in the applicable Federal Register notice at: https://www.epa.gov/state-and-local-transportation/conformity-adequacy-review-region-9#ca.]

☐ If yes, **a written commitment is made to implement the identified SIP control measures for PM10 and/or PM2.5 through construction or operation of this project (40 CFR 93.117).** Go to Step 14.

☐ If no, go to Step 13.

Step 13a. Have project-level mitigation or control measures for CO, PM10, and/or PM2.5, included as part of the project's design concept and scope, been identified as a condition of the RTP or TIP conformity determination? AND/OR

Step 13b. Are project-level mitigation or control measures for CO, PM10, and/or PM2.5 included in the project's NEPA document? AND

Step 13c (applies only if Step 13a and/or 13b are answered "yes"). Has a written commitment been made as part of the air quality analysis to implement the identified measures?

☐ If yes to 13a and/or 13b and 13c, **a written commitment is made to implement the identified mitigation or control measures for CO, PM10, and/or PM2.5 through construction or operation of this project. These mitigation or control measures are identified in the project's NEPA document and/or as conditions of the RTP or TIP conformity determination[1] (40 CFR 93.125(a)).** Go to Step 14.

☐ If no, go to Step 14.

Step 14. Does the project qualify for a Categorical Exclusion pursuant to 23 USC 326?

☐ If yes, go to step 15.

☐ If no, go to Step 16.

Step 15. Is any analysis required by steps 1-13 of this form?[5]

☐ If yes, then Caltrans prepares the appropriate analysis and documentation for the project file and makes the conformity determination through its signature on the CE form. No FHWA involvement is required. See the AQCA Annotated Outline. Go to Step 17.

☐ If no, then Caltrans makes the conformity determination through its signature on the CE form. No FHWA involvement is required. Go to Step 17.

Step 16. Does the project require preparation of a Categorical Exclusion, EA, or EIS pursuant to 23 USC 327?

☐ If yes, then Caltrans submits a conformity determination request to FHWA for FHWA's conformity determination letter. **An AQCA is needed.** See the AQCA Annotated Outline.

Date of FHWA air quality conformity determination: _____

Go to Step 17.

Step 17. STOP as all air quality conformity requirements have been met.

Signature:	Choyoungil		
Printed Name:	Youngil Cho	**Date:**	3/3/2020
Title:	Air Quality Specialist		

[5] Please note that not all projects that qualify for a categorical exclusion will be exempt from air quality conformity requirements. Many types of projects that may qualify for a CE (such as the addition of auxiliary lanes less than one-mile, weaving lanes less than one-mile, turning lanes less than one-mile, climbing lanes less than one-mile, parking, road diets, ramp metering, and even many bridge projects) MAY require some level of project level conformity analysis and may even require interagency consultation. Additionally, please note that for ALL projects the project file must include evidence that one of the three following situations apply: 1) Conformity does not apply to the project area; or 2) The project is exempt from all conformity analysis requirements; or 3) The project is subject to project-level conformity analysis (and possibly regional conformity analysis) and meets the criteria for a conformity determination. The project file must include all supporting documentation and this checklist.

2

58

Appendix D. Construction Emission Calculations

Construction Emissions Tool 2018 (CAL-CET2018) v1.3

August 6, 2019

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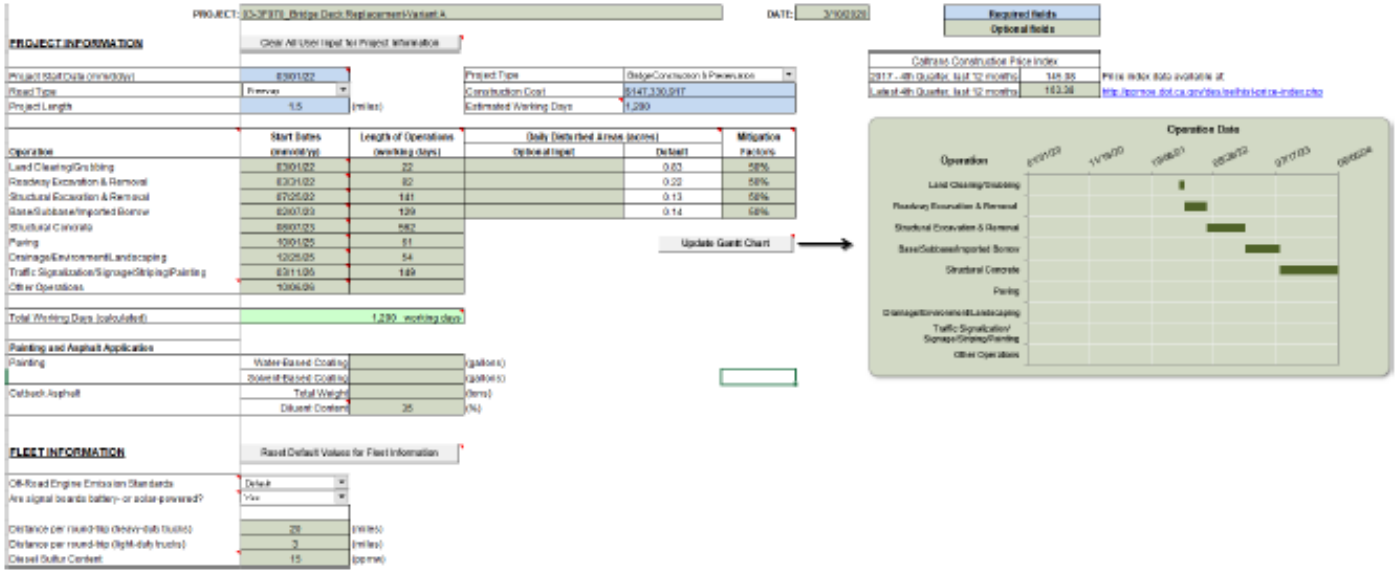

Summary by Operation	Total Emissions and Fuel Consumption by Operation (tons; gal fuel)												
Project Phases	TOG	ROG	CO	NOx	PM10	PM2.5	CO2	CH4	N2O	BC	HFC	Diesel Fuel	Gasoline Fuel
Land Clearing/Grubbing	0.029	0.026	0.14	0.17	0.102	0.020	40	0.001	0.002	0.002	0.001	3,314	1,808
Roadway Excavation & Removal	0.205	0.190	1.15	1.32	0.188	0.165	268	0.009	0.014	0.020	0.007	22,573	11,947
Structural Excavation & Removal	0.250	0.232	0.71	1.48	0.170	0.087	354	0.009	0.025	0.016	0.013	29,519	25,325
Base/Subbase/Imported Borrow	0.485	0.448	3.03	3.15	0.334	0.247	635	0.020	0.029	0.016	0.017	53,502	25,926
Structure Concrete	1.137	1.062	3.27	5.59	0.359	0.349	1201	0.038	0.059	0.063	0.056	109,535	56,073
Paving	0.065	0.060	0.19	0.47	0.032	0.032	92	0.003	0.006	0.007	0.004	7,616	4,922
Drainage/Environment/Landscaping	0.107	0.099	0.26	0.64	0.051	0.050	119	0.004	0.006	0.013	0.005	9,024	5,564
Traffic Signalization/Signage/Striping/Painting	0.167	0.150	0.69	1.31	0.072	0.070	459	0.012	0.034	0.015	0.034	37,048	34,841
Other Operation	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
Total	**2.444**	**2.268**	**9.46**	**14.05**	**1.310**	**0.960**	**3168**	**0.10**	**0.17**	**0.18**	**0.14**	**264,002**	**166,488**

Summary by Year	Total Emissions and Fuel Consumption by Year (tons; gal fuel)												
Year	TOG	ROG	CO	NOx	PM10	PM2.5	CO2	CH4	N2O	BC	HFC	Diesel Fuel	Gasoline Fuel
2015	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2016	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2017	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2018	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2019	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2020	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2021	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2022	0.440	0.408	1.88	2.64	0.430	0.196	508	0.018	0.036	0.035	0.019	50,038	34,523
2023	0.743	0.688	3.78	4.46	0.433	0.329	928	0.029	0.045	0.037	0.030	77,978	41,331
2024	0.530	0.495	1.53	2.61	0.167	0.163	561	0.018	0.027	0.043	0.026	46,937	26,216
2025	0.469	0.437	1.33	2.47	0.152	0.158	517	0.016	0.026	0.041	0.024	43,215	24,623
2026	0.262	0.239	0.94	1.87	0.118	0.115	565	0.015	0.040	0.027	0.028	45,936	39,796
2027	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2028	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2029	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2030	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2031	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2032	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2033	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2034	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2035	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2036	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2037	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2038	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2039	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2040	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2041	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2042	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2043	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2044	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2045	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2046	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2047	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2048	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2049	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2050	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
Total	2.444	2.268	9.46	14.05	1.310	0.960	3168	0.10	0.17	0.18	0.14	264,002	166,488

Construction Emissions Tool 2018 (CAL-CET2018) v1.3

August 6, 2019

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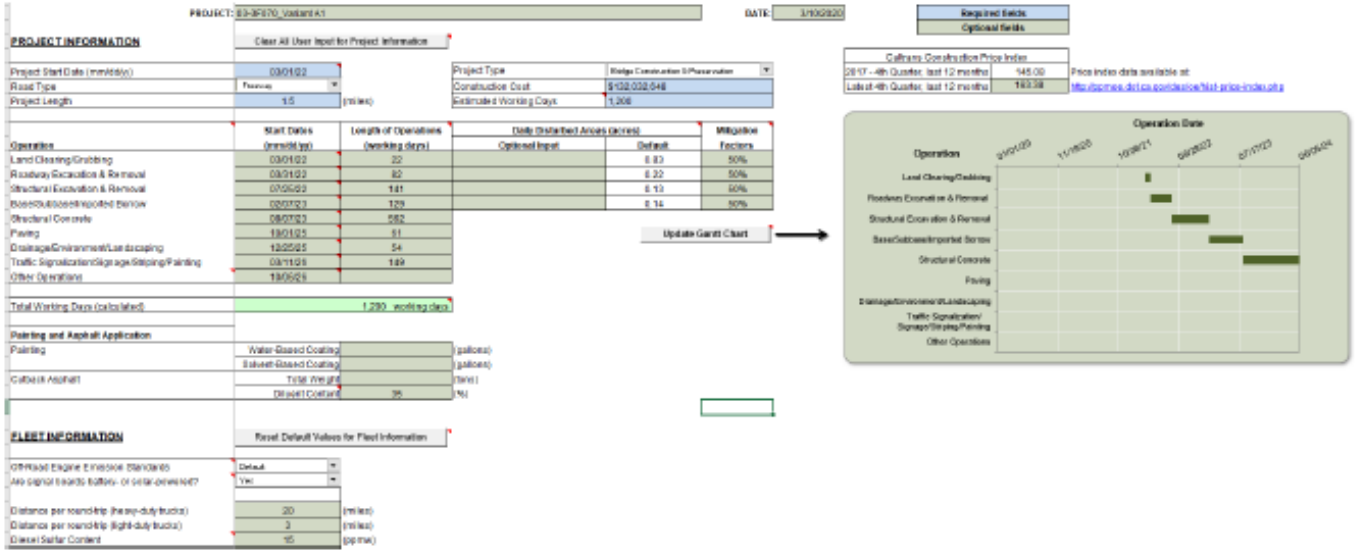

Summary by Operation	Total Emissions and Fuel Consumption by Operation (tons; gal fuel)												
Project Phases	TOG	ROG	CO	NOx	PM10	PM2.5	CO2	CH4	N2O	BC	HFC	Diesel Fuel	Gasoline Fuel
Land Clearing/Grubbing	0.025	0.023	0.13	0.15	0.101	0.019	35	0.001	0.002	0.002	0.001	2,909	1,073
Roadway Excavation & Removal	0.184	0.170	1.03	1.18	0.178	0.095	241	0.008	0.012	0.017	0.006	20,265	10,751
Structural Excavation & Removal	0.224	0.208	0.63	1.25	0.162	0.079	315	0.008	0.022	0.014	0.012	26,327	22,538
Base/Subbase/Imported Borrow	0.435	0.402	2.71	2.83	0.309	0.223	579	0.018	0.026	0.015	0.016	47,991	23,291
Structure Concrete	1.019	0.952	2.93	5.00	0.322	0.313	1073	0.034	0.052	0.083	0.050	89,853	49,940
Paving	0.059	0.054	0.17	0.42	0.029	0.029	82	0.003	0.005	0.006	0.004	6,770	4,340
Drainage/Environment/Landscaping	0.096	0.089	0.25	0.57	0.046	0.045	107	0.003	0.006	0.012	0.004	8,887	5,030
Traffic Signalization/Signage/Striping/Painting	0.149	0.135	0.61	1.17	0.064	0.063	412	0.011	0.031	0.014	0.031	33,229	31,258
Other Operation	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
Total	2.190	2.032	8.47	12.58	1.211	0.864	2835	0.09	0.16	0.16	0.12	236,291	148,822

Summary by Year	Total Emissions and Fuel Consumption by Year (tons; gal fuel)												
Year	TOG	ROG	CO	NOx	PM10	PM2.5	CO2	CH4	N2O	BC	HFC	Diesel Fuel	Gasoline Fuel
2015	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2016	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2017	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2018	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2019	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2020	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2021	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2022	0.394	0.365	1.68	2.37	0.412	0.178	535	0.018	0.032	0.031	0.017	44,773	30,854
2023	0.666	0.618	3.39	4.00	0.399	0.296	831	0.026	0.040	0.033	0.027	69,856	37,067
2024	0.475	0.444	1.37	2.33	0.150	0.146	501	0.016	0.024	0.039	0.023	41,950	23,349
2025	0.420	0.392	1.19	2.21	0.145	0.141	462	0.015	0.023	0.036	0.021	38,591	21,892
2026	0.235	0.214	0.84	1.68	0.105	0.103	507	0.014	0.036	0.024	0.034	41,121	35,721
2027	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2028	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2029	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2030	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2031	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2032	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2033	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2034	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2035	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2036	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2037	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2038	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2039	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2040	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2041	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2042	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2043	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2044	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2045	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2046	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2047	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2048	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2049	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2050	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
Total	2.190	2.032	8.47	12.58	1.211	0.864	2835	0.09	0.16	0.16	0.12	236,291	148,822

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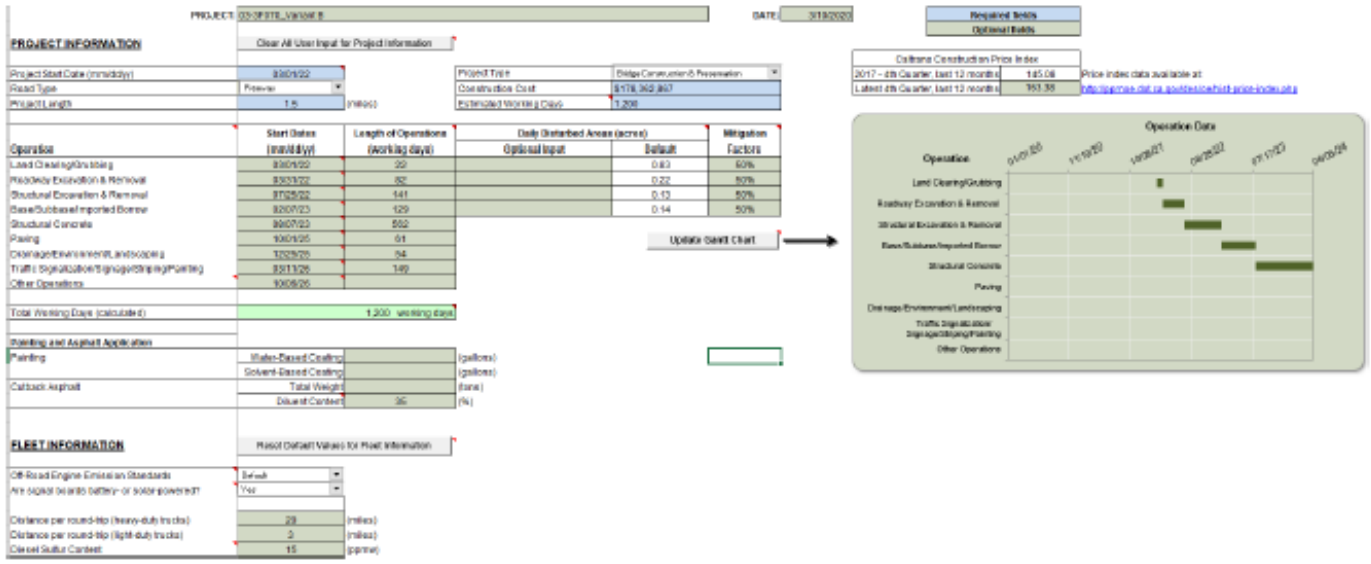

Summary by Operation	Total Emissions and Fuel Consumption by Operation (tons; gal fuel)												
Project Phases	TOG	ROG	CO	NOx	PM10	PM2.5	CO2	CH4	N2O	BC	HFC	Diesel Fuel	Gasoline Fuel
Land Clearing/Grubbing	0.034	0.031	0.17	0.21	0.104	0.022	48	0.002	0.003	0.003	0.001	4,007	2,256
Roadway Excavation & Removal	0.249	0.230	1.39	1.60	0.209	0.125	323	0.010	0.016	0.024	0.008	27,238	14,351
Structural Excavation & Removal	0.302	0.281	0.86	1.69	0.187	0.103	426	0.011	0.030	0.019	0.016	35,515	30,383
Base/Subbase/Imported Borrow	0.587	0.543	3.66	3.81	0.386	0.297	767	0.025	0.035	0.020	0.021	64,629	31,205
Structure Concrete	1.377	1.286	3.97	6.77	0.435	0.423	1459	0.046	0.072	0.113	0.068	122,072	68,343
Paving	0.078	0.073	0.22	0.57	0.039	0.038	112	0.003	0.007	0.008	0.005	9,224	5,964
Drainage/Environment/Landscaping	0.130	0.120	0.34	0.77	0.062	0.061	143	0.005	0.007	0.016	0.006	11,922	6,668
Traffic Signalization/Signage/Striping/Painting	0.202	0.192	0.83	1.58	0.087	0.085	557	0.015	0.042	0.018	0.041	44,851	42,306
Other Operation	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
Total	**2.959**	**2.745**	**11.45**	**17.01**	**1.509**	**1.154**	**3835**	**0.12**	**0.21**	**0.22**	**0.17**	**319,558**	**201,497**

Summary by Year	Total Emissions and Fuel Consumption by Year (tons; gal fuel)												
Year	TOG	ROG	CO	NOx	PM10	PM2.5	CO2	CH4	N2O	BC	HFC	Diesel Fuel	Gasoline Fuel
2015	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2016	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2017	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2018	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2019	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2020	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2021	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2022	0.532	0.493	2.27	3.10	0.466	0.232	720	0.021	0.043	0.042	0.023	60,300	41,451
2023	0.900	0.834	4.58	5.40	0.502	0.399	1122	0.035	0.054	0.045	0.037	94,289	49,891
2024	0.642	0.600	1.85	3.10	0.203	0.197	681	0.021	0.033	0.053	0.032	56,992	31,952
2025	0.557	0.529	1.62	2.99	0.156	0.151	628	0.020	0.032	0.049	0.029	52,438	29,963
2026	0.317	0.289	1.13	2.27	0.142	0.139	684	0.019	0.048	0.033	0.046	55,539	48,240
2027	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2028	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2029	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2030	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2031	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2032	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2033	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2034	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2035	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2036	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2037	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2038	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2039	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2040	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2041	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2042	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2043	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2044	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2045	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2046	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2047	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2048	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2049	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2050	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
Total	**2.959**	**2.745**	**11.45**	**17.01**	**1.509**	**1.154**	**3835**	**0.12**	**0.21**	**0.22**	**0.17**	**319,558**	**201,497**

Construction Emissions Tool 2018 (CAL-CET2018) v1.3

August 6, 2019

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PROJECT: 03-3F070_variant C

DATE: 3/10/2020

Required fields

Optional fields

PROJECT INFORMATION

Clear All User Input for Project Information

Project Start Date (mm/dd/yy)	03/01/22
Road Type	Freeway
Project Length	1.5 (miles)

Project Type	Bridge Construction & Preservation
Construction Cost	$264,621,000
Estimated Working Days	1,209

Caltrans Construction Price Index

2017 - 4th Quarter, last 12 months	145.99
Latest 4th Quarter, last 12 months	153.58

Price index data available at http://dpm.dot.ca.gov/dpm/pavement/price-index.asp

Operation	Start Dates (mm/dd/yy)	Length of Operations (working days)	Daily Disturbed Areas (acres) Optional Input	Daily Disturbed Areas (acres) Default	Mitigation Factors
Land Clearing/Grubbing	03/01/22	33		8.93	50%
Roadway Excavation & Removal	03/01/22	83		8.22	50%
Structural Excavation & Removal	07/25/22	141		8.15	50%
Base/Subbase/Imported Borrow	02/07/23	128		8.14	50%
Structural Concrete	06/07/23	562			
Paving	10/01/25	61			
Drainage/Environment/Landscaping	12/01/26	64			
Traffic Signalization/Signage/Striping/Painting	03/11/28	148			
Other Operations	10/09/28				

Update Gantt Chart

Total Working Days (calculated) 1,209 working days

Painting and Asphalt Application

Painting	Water-Based Coating		(gallons)
	Solvent-Based Coating		(gallons)
Outback Asphalt	Total Weight		(tons)
	Diluent Content	35	(%)

FLEET INFORMATION

Reset Default Values for Fleet Information

Off-Road Engine Emission Standards	Default
Are signal boards battery- or solar-powered?	Yes
Distance per round-trip (heavy-duty trucks)	20 (miles)
Distance per round-trip (light-duty trucks)	3 (miles)
Diesel Sulfur Content	15 (ppmw)

66

Summary by Operation	Total Emissions and Fuel Consumption by Operation (tons; gal fuel)												
Project Phases	TOG	ROG	CO	NOx	PM10	PM2.5	CO2	CH4	N2O	BC	HFC	Diesel Fuel	Gasoline Fuel
Land Clearing/Grubbing	0.038	0.036	0.28	0.24	0.186	0.024	55	0.002	0.003	0.003	0.002	4,598	2,581
Roadway Excavation & Removal	0.285	0.263	1.60	1.83	0.226	0.142	378	0.012	0.019	0.027	0.009	31,286	16,424
Structural Excavation & Removal	0.347	0.322	0.98	1.94	0.281	0.117	468	0.013	0.034	0.022	0.018	48,784	34,914
Base/Subbase/Imported Borrow	0.673	0.622	4.28	4.38	0.429	0.340	888	0.028	0.040	0.023	0.024	74,199	35,899
Structure Concrete	1.579	1.474	4.54	7.76	0.498	0.485	1667	0.053	0.081	0.129	0.078	139,586	77,845
Paving	0.096	0.083	0.26	0.65	0.045	0.044	127	0.004	0.008	0.010	0.006	10,493	6,731
Drainage/Environment/Landscaping	0.149	0.138	0.39	0.89	0.071	0.069	164	0.005	0.008	0.010	0.007	13,655	7,658
Traffic Signalization/Signage/Striping/Painting	0.231	0.209	0.95	1.81	0.108	0.097	637	0.017	0.048	0.021	0.047	51,386	48,318
Other Operation	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
Total	**3.392**	**3.147**	**13.12**	**19.49**	**1.677**	**1.318**	**4398**	**0.13**	**0.24**	**0.25**	**0.19**	**365,080**	**230,353**

Summary by Year	Total Emissions and Fuel Consumption by Year (tons; gal fuel)												
Year	TOG	ROG	CO	NOx	PM10	PM2.5	CO2	CH4	N2O	BC	HFC	Diesel Fuel	Gasoline Fuel
2015	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2016	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2017	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2018	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2019	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2020	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2021	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2022	0.610	0.565	2.68	3.66	0.497	0.262	826	0.024	0.058	0.048	0.026	69,162	47,553
2023	1.031	0.957	5.25	6.19	0.559	0.452	1287	0.040	0.062	0.051	0.042	108,141	57,239
2024	0.736	0.687	2.12	3.62	0.232	0.226	779	0.024	0.038	0.060	0.036	65,159	36,395
2025	0.660	0.607	1.85	3.42	0.235	0.219	717	0.023	0.036	0.056	0.033	59,983	34,070
2026	0.364	0.331	1.30	2.60	0.163	0.159	782	0.021	0.055	0.036	0.053	63,514	55,097
2027	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2028	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2029	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2030	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2031	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2032	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2033	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2034	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2035	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2036	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2037	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2038	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2039	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2040	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2041	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2042	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2043	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2044	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2045	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2046	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2047	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2048	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2049	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
2050	0.000	0.000	0.00	0.00	0.000	0.000	0	0.000	0.000	0.000	0.000	-	-
Total	3.392	3.147	13.12	19.49	1.677	1.318	4398	0.13	0.24	0.25	0.19	365,080	230,353

Appendix C – Public Comments and Responses

1. Marc Fuglar – Senior Project Manager, U.S. Army Corps of Engineers

From: Fugler, Marc A CIV USARMY CESPK (USA)
To: SR51 American River Bridge@DOT
Cc: Meade, Robert@DOT
Subject: 03-3F070 American River Bridge DED (SPK-201900174) (UNCLASSIFIED)
Date: Monday, November 2, 2020 1:39:47 PM

EXTERNAL EMAIL. Links/attachments may not be safe.

CLASSIFICATION: UNCLASSIFIED

Hi Sunny,

My comments are regarding the Wetlands and Other Waters and proposed impacts.

I advise Caltrans to obtain an aquatic resources delineation for the project as soon as you can. At a minimum you must submit one with a pre-construction notification but it may be advisable to get one verified earlier to be sure of your impact acreages.

The project impacts may or may not be accurate. Once you have a verified delineation you can be sure of the proposed impact acreages. At 0.33 acre of permanent wetland impacts and 0.13 acre of permanent other waters impacts, you are close to the 0.5 acre threshold between a Nationwide Permit and an Individual Permit.

Thanks,
marc

Marc Fugler
Senior Project Manager
U.S. Army Corps of Engineers, Sacramento District
Special Projects Branch
Sacramento, California 95814
(916) 557-5255 (Customer Service Hours: 9:00-3:00)
(916) 557-6877 fax
marc.a.fugler@usace.army.mil

In response to COVID-19, Regulatory Division staff are teleworking from home or other approved location. We will do our best to administer the Regulatory Program in an effective and efficient manner. Priority will be given to health and safety activities and essential infrastructure. Action on your permit application or other request may be delayed during this emergency. We appreciate your patience over the next several weeks.

(We do not have "out of office" auto reply. Email not returned in a reasonable amount of time means I am not in the office, however, my voicemail is kept up to date.)

* We want your feedback! Take the survey: at https://urldefense.com/v3/__http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey__;!!LWi6xHDyrA!qkvNyvZlwhNnqlYYTiCBynQLUt0GnWaJ545ckn9DAYB-Nq8XAArfggF0VfvsS0fFd38Eg1Y3nSg2Y6uDVQ$
* Need information on the Regulatory Program? Visit our website:
https://urldefense.com/v3/__http://www.spk.usace.army.mil/missions/regulatory.aspx__;!!LWi6xHDyrA!qkvNyvZlwhNnqlYYTiCBynQLUt0GnWaJ545ckn9DAYB-Nq8XAArfggF0VfvsS0fFd38Eg1Y3nSjKC2Sglw$

CLASSIFICATION: UNCLASSIFIED

Response to Comment 1:

Thank you for your comment. Caltrans is currently working on submitting the Pre-Construction Notification and the Aquatic Resources Delineation Report.

2. Molly Wright – Air Quality Planner, Sacramento Metropolitan Air Quality Management District

From: Molly Wright
To: SR51 American River Bridge@DOT
Subject: State Route 51/Interstate 80 Business/Capital City Freeway Improvements Project
Date: Monday, November 2, 2020 4:11:44 PM

EXTERNAL EMAIL. Links/attachments may not be safe.

Hello, in commenting on the MND for the American River Bridge Deck Replacement project, I looked up the status of the State Route 51/Interstate 80 Business/Capital City Freeway Improvements Project. All email addresses we used when we worked with Caltrans staff and commented on that project NOP are defunct. Further, the project is not listed on the Caltrans website.

I don't know of another email address to use for this request. Could you please tell me the status of the State Route 51/Interstate 80 Business/Capital City Freeway Improvements Project, or refer me to someone who can? The project number I have is EA: 03-0H931.

Thank you,

Molly Wright, AICP | Air Quality Planner / Analyst
Sacramento Metropolitan Air Quality Management District
777 12th Street, 3rd Floor, Sacramento, CA 95814 | (916) 874-4207 | www.airquality.org

Response to Comment 2:

Thank you for your comment. Caltrans is currently working on our technical studies for the State Route 51/Interstate 80 Business/Capital City Freeway Improvements Project (03-0H931). The Draft Environmental Document is scheduled to be completed by November 2021 and Final Environmental Document by May 2022.

3. Adam Randolph – Senior Engineer, City of Sacramento – Public Works

From: Adam Randolph
To: SR51 American River Bridge@DOT
Cc: Peri, Clark A@DOT
Subject: 03-3F070: American River Bridge DED
Date: Thursday, November 5, 2020 10:27:14 AM

EXTERNAL EMAIL. Links/attachments may not be safe.

The following comments pertain the interaction between the bridge project and the City of Sacramento's Two Rivers Trail Project.

1. The location of the trail shown in preliminary plans is different that that shown in the City's plans. The city's trail design ramps up to the top of the levee earlier than the CalTrans plan. This should be coordinated between the two projects to avoid rework.
2. There is a detour indicated for the American River Parkway north of the river, but no detour indicated for the Two Rivers Trail to the south of the river. Will the trail be closed with construction? If so, a detour should be indicated.
3. Figure 5 appears to indicate material haul routes within the ESL. Please confirm that these routes are on top of the levee. We wish to avoid as much wear and tear on trails as possible.

Adam Randolph
Senior Engineer
City of Sacramento- Public Works
916-808-7803

Response to Comment 3:

Thank you for your comment. The trail (on the south side of the bridge) will continue to ramp up to the top of levee from below the structure on both sides of the structure, this connection is not intended to be removed. However, conforming from the edge of deck of the bridge to the top of levee is intended on the southern side of the bridge. Coordination with City Agencies and their consultants have been done and will continue to be done moving forward.

Two Rivers Trail at the south end of the river will be closed during construction of the abutment and any work within the vicinity. Once the work is out of the general vicinity, it can be open for public use again. Keeping impact to the park for public uses will be minimized as much as possible.

Details are still being developed and these plans may change, however this is the intent. Staging vehicle routes are still being studied and considered. The intent of this route is both for ingress and egress onto the construction site. It is intended to go on the trails as opposed to on top of the levee.

4. Matt Smith

From: Matt Smith
To: SR51 American River Bridge@DOT
Subject: American River Bridge Deck Replacement
Date: Friday, November 6, 2020 2:46:27 PM

EXTERNAL EMAIL. Links/attachments may not be safe.

I write to you regarding the American River Bridge Deck Replacement, 03-SAC-51-PM 2.0-3.5, EA: 03-3F070/EFIS: 0312000054, INITIAL STUDY with Proposed Mitigated Negative Declaration.

I wish to express (1) strong support for the addition of a separated bike lane connecting the areas north and south of the American River and (2) strong opposition to any proposed widening of automobile roadways. We know given past experience that additional automobile lanes will only induce additional demand for automobile vehicle-miles-travelled, when we should be doing everything we can to reduce VMT in order to combat climate change, given that personal transportation is among the largest sources of greenhouse gas emissions in California. Every available action should be taken by CalTrans to get people out of their cars and onto bikes and into buses. This includes the construction or installation of safe, separated bike routes and taking lanes away fromcars. Ideally, you would replace car lanes with the bike lane or with a dedicated bus lane.

Matt Smith

Response to Comment 4:

Caltrans proposes to rehabilitate the American River Bridge by removing and replacing the existing concrete deck and steel girder post-tensioning systems in spans 1 and 2. The project would also include modifications to the existing soundwall, install sheet piling around piers for scour mitigation, construct concrete catcher blocks, add a Class I bike/pedestrian path and widen the bridge to accommodate traffic during construction.

The widening is necessary to facilitate construction, provide a safe work area for the contractor, maintain traffic flow during construction and to accommodate bike and pedestrian travel. Alternative 1 is the preferred alternative and would widen the bridge an additional 54’-11” on the northbound side of the bridge. Once complete, the bridge will be 151’-6” wide from outside edge-of-deck to edge-of-deck. No additional lanes will be added with this project. Therefore, the technical studies prepared for the environmental document determined that there are no significant impacts to GHG, air quality, or climate change. This bridge project is not dependent on the corridor project and therefore no segmentation is involved.

Alternative 1 is the preferred alternative. Alternative 2 and 3 were considered but ultimately rejected. Alternative 1 widens the bridge an additional 54’-11” on the northbound side. Once complete, the bridge will be 151’-6” wide from outside edge-of-deck to edge-of-deck. The widening is necessary to facilitate construction, provide a safe work area for the contractor, maintain traffic flow during construction and to accommodate bike and pedestrian travel.

The removal and replacement of the bridge deck requires temporary shifting of traffic lanes. The existing bridge has minimal inside and outside shoulder widths that can be used for shifting traffic, so any shift of traffic within the existing bridge deck width will not allow the contractor sufficient room to work. Therefore, the bridge must be widened to provide space for safe traffic

shifts and allow enough space for the contractor to safely move equipment on and off the bridge and conduct deck removal and replacement operations. Lengthy lane tapers, both on and off the bridge, are also needed to safely shift traffic back to the existing lanes during construction.

5. Keith Hallsten

From: Keith Hallsten
To: SR51 American River Bridge@DOT
Subject: Bad URL for project video
Date: Monday, November 9, 2020 8:00:39 AM

EXTERNAL EMAIL. Links/attachments may not be safe.

Hi there,

The Public Notice on page 4B of the Nov 9 issue of the Sacramento Bee includes a URL for a project video, but attempts at accessing that video result in a 404 error. The published URL (https://bit.ly.2wX4Rfl is apparently incorrect. What's the correct URL?

Thanks,

Keith Hallsten

Response to Comment 5:

Thank you for your comment. We apologize for the inconvenience. We experienced some technical issues uploading the project video. The issue was resolved on 12/6/2020 and the video was posted at the link below.

Link to video: https://youtu.be/MSsAJIfJ-Bo

6. Brianna Moland – Assistant Planner, City of Sacramento – Department of Youth, Parks, and Community Enrichment

From: Brianna Moland
To: SR51 American River Bridge@DOT
Cc: Dana Repan
Subject: American River Bridge Deck Replacement Project - YPCE Comments
Date: Friday, November 13, 2020 4:18:03 PM

EXTERNAL EMAIL. Links/attachments may not be safe.

Dear Caltrans,

City of Sacramento's Department of Youth, Parks, and Community Enrichment has the following comments/questions about the American River Bridge Deck Replacement Project:

- Please confirm that no City of Sacramento parks will be used as construction staging for this project.
- During the construction phase, would any detour routes involve City parks (especially Sutter's Landing Regional Park)?

Thank you,

Brianna Moland
Assistant Planner
City of Sacramento
Department of Youth, Parks, and Community Enrichment
bmoland@cityofsacramento.org
(916) 808-6188

Response to Comment 6:

Thank you for your comment. This project will temporarily use a portion of the Two Rivers Trail. Caltrans will work with the City of Sacramento to minimize/avoid impacts.

7. Molly Wright – Air Quality Planner / Analyst, Sac Metro Air District

SACRAMENTO METROPOLITAN
AIR QUALITY
MANAGEMENT DISTRICT

November 18, 2020

SENT VIA EMAIL

Caltrans, District 3
703 B Street, Marysville, CA 95901
SR51.American.River.Bridge@dot.ca.gov

RE: American River Bridge Deck Replacement (SCH# 2020100388)

To Whom it May Concern:

Please accept Sacramento Metropolitan Air Quality Management District (Sac Metro Air District) comments on the Mitigated Negative Declaration (MND) for the American River Bridge Replacement project, pursuant to the California Environmental Quality Act (CEQA). This project would rehabilitate the American River Bridge along State Route (SR) 51 in Sacramento County from post mile 2.0 to 3.5, including (1) removal and replacement of the existing concrete deck and the steel girder post-tensioning systems in spans 1 and 2, (2) modification of the existing sound wall, (3) installation of sheet piling around piers for scour mitigation, (4) construction of concrete catcher blocks, (5) widening the bridge to accommodate traffic during construction, (6) addition of a Class I bike/pedestrian path, and (7) planning for future transportation needs on SR 51. We offer the following recommendations to ensure adequate air quality analysis, based on Sac Metro Air Districts' Guide to Air Quality Assessment in Sacramento County (CEQA Guide), available on our website, and the California Air Pollution Control Officers Association (CAPCOA) guidance, Air Quality Analysis in CEQA Roadway Project Review, available at www.capcoa.org.

Air Quality Analysis
The MND maintains that operational air quality impacts are less than significant because the project would not result in changes to roadway motor vehicle capacity or traffic volumes and would not increase operational emissions above existing conditions. It maintains that the project is exempt from all air quality conformity analysis pursuant to the Code of Federal Regulations. The MND includes discussion of project consistency with the Sacramento Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) in its climate change analysis.

- The MND should supplement its operational air quality analysis by referencing project consistency with the MTP / SCS, and the Sacramento Regional Ozone Attainment Plan for meeting the Clean Air Act requirements.

The MND maintains that construction air quality impacts are less than significant because the project would comply with Caltrans Standards Specifications. The MND does not include quantified construction emissions projections and compare them against thresholds of significance, and it does not fully describe or provide a specific footnote reference, or a link,

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www.airquality.org

to Caltrans Standards Specifications. Please note that because the project includes demolition, it is does not meet Sac Metro Air District screening thresholds for CEQA review for construction-related air quality impacts.

- The MND should include documentation of "less than significant" findings. The air quality checklist explanation on page 24 references an Air Quality Report prepared on March 26, 2020. This should be included in an MND appendix.

- The MND air quality construction analysis should utilize analysis methods from Sac Metro Air District's CEQA Guide, including but not limited to (1) a discussion of type of construction activities that will occur and the emissions sources (for pollutants regulated by the Clean Air Act, known as criteria pollutants) associated with those activities, (2) the timing, phasing, and duration of construction, (3) a quantification of the maximum daily mass emissions of criteria pollutants that will be emitted by project, and the input parameters and assumptions used to estimate these values, (4) a discussion of whether the maximum daily construction-generated emissions will exceed the Sac Metro Air District's mass emission thresholds, (5) a significance determination about construction-generated criteria pollutant emissions, without mitigation, and (6) a discussion of feasible mitigation necessary to reduce impacts, including construction emission mitigation measures from the CEQA Guide's construction chapter, and whether the reduction is sufficient to reduce impacts to a less than significant level.

- The MND air quality analysis should clearly and fully describe any actions that would reduce construction emissions to less than significant, and quantify associated emissions reductions.

- All projects are subject to Sac Metro Air District rules and regulations at the time of construction, and are required to implement our Basic Construction Emission Control Practices (BCECP). We recommend including the entire BCECP as mitigation in the MND. Please visit our website to find a list of the most common rules that apply at the construction phase of projects, and a copy of our BCECP.

Climate Change Analysis
The MND's climate change analysis indicates that an increase in operational greenhouse gas (GHG) emissions is not anticipated because 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. It maintains that operational GHG emissions are less than significant because (1) an increase in operational GHG emissions is not anticipated, and (2) the project does not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.

- The MND climate change analysis should demonstrate that it does not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. While it includes discussion of project consistence with the MTP / SCS, it

should also address the analysis requirements of Senate Bill 743 (Steinberg, 2013). Caltrans's Transportation Analysis under CEQA (TAC) provides guidance to support Caltrans CEQA practitioners in making CEQA significance determinations for transportation impacts of projects on the State Highway System. If this project screens out of SB 743 requirements for CEQA review, the MND should include a discussion in its transportation analysis of how the project screens out of the requirements, and include a reference to this discussion in its climate change analysis.

The MND's climate change analysis indicates that, with implementation of construction GHG reduction measures, the construction-related climate change impacts would be less than significant. However, it maintains that GHG reduction measures "cannot be quantified at this time." It does not reference a GHG threshold.

- The MND climate change analysis should utilize analysis methods from Sac Metro Air District's CEQA Guide, including but not limited to (1) a discussion of whether project construction GHG emissions will exceed the established significance thresholds, (2) a discussion of all feasible construction mitigation necessary to reduce impacts, including measures in the Sac Metro Air District's guidance for construction GHG emissions reductions, available on our website, and (3) a determination of whether the mitigation will be sufficient to reduce the project's construction GHG contribution to the significant cumulative impact to a less than considerable level, with a rationale provided for this determination.

- The MND should include quantified projections of construction GHG emissions both with and without implementation of GHG reduction measures. Currently the MND does not include both sets of quantified projections for the project alternatives.

- For quantified emissions projections, we recommend using a model that is available to the public, for full disclosure. The MND indicates that CAL-CET2018 version 1.3 was used to project construction emissions, but that model is not readily publicly available. Two publicly available modeling tools are available to conduct emissions analysis, the Roadway Construction Emissions Model, available on Sac Metro Air District's website, and the CalEEMod model, available at www.caleemod.com.

Finally, please consider using renewable diesel fuel for construction equipment, to support GHG reductions.

Bike / Pedestrian Path
For clear disclosure of project benefits to sustainable, non-polluting transportation, and consistence with other Caltrans projects such as the State Route 51/Interstate 80 Business/Capital City Freeway Improvements Project, the MND should provide a more specific description of the project's Class I bike/pedestrian path. The MND should provide graphic depictions of the path in the context of the overall project, and describe how it would link to nearby bike and / or pedestrian paths.

Thank you for your attention to our comments and recommendations. If you have questions about them, please contact me at mwright@airquality.org or 916-874-4207.

Sincerely,

Molly Wright, AICP
Air Quality Planner / Analyst

cc: Paul Philley, AICP, Sac Metro Air District

Response to Comment 7:

Thank you for your comment. The purpose of this project is to replace the deck on the American River Bridge (Bridge No. 24-0003) on SR 51. The proposed modifications would not result in changes to the traffic volume, fleet mix, speed, location of existing facility or any other factor that would cause an increase in emissions relative to the no build alternative; therefore, this project would not cause an increase in operational emissions. No minimization measures are recommended for operational emissions.

This analysis was performed based on the project description in the 2019 MTIP Listing page (See Appendix B in the AQ report). The above statements as a qualitative operational analysis are also included in the air quality report.

Construction emissions were estimated using the Caltrans' Model, CAL-CET2018, (version 1.3). Construction-related emissions for the proposed project are presented in the below Tables (a, b, c, and d). The results of the construction emission calculations are also included in the AQ report (Appendix D). The emissions represent the construction emissions generated by operation.

CAL-CET2018 is a spreadsheet tool for estimating pollutant emissions from transportation project construction activities. The tool performs intermediate emissions calculations based on the input data provided by users (type of construction activities, duration of construction, construction cost, project length, road type, construction starting date, etc.), emission factors from the California Air Resources Board's (CARB) OFFROAD model, California's GHG inventory (for off-road equipment), and emission factors from CARB's EMFAC model (for on-road trucks and water trucks).

Table. Construction Emissions generated by operation.

(a) Variant A

Phases / Emissions	PM_{10} (tons)	$PM_{2.5}$ (tons)	CO (tons)	NO_x (tons)	ROGs (tons)	CO_2 (tons)
Land Clearing/Grubbing	0.102	0.020	0.14	0.17	0.026	40
Roadway Excavation/Removal	0.188	0.105	1.15	1.32	0.190	268
Structural Excavation/Removal	0.170	0.087	0.71	1.40	0.232	354
Base/Subbase/Imported Borrow	0.334	0.247	3.03	3.15	0.448	635
Structure Concrete	0.359	0.349	3.27	5.59	1.062	1,201
Paving	0.032	0.032	0.19	0.47	0.060	92
Drainage/Environment/Landscaping	0.051	0.050	0.28	0.64	0.099	119
Traffic Signalization/Signage/Striping/Painting	0.072	0.070	0.69	1.31	0.150	459

Phases / Emissions	PM_{10} (tons)	$PM_{2.5}$ (tons)	CO (tons)	NO_x (tons)	ROGs (tons)	CO_2 (tons)
Project Total (US tons)	1.310	0.960	9.46	14.05	2.268	3,168

(b) Variant A1

Phases / Emissions	PM_{10} (tons)	$PM_{2.5}$ (tons)	CO (tons)	NO_x (tons)	ROGs (tons)	CO_2 (tons)
Land Clearing/Grubbing	0.101	0.019	0.13	0.15	0.023	35
Roadway Excavation/Removal	0.178	0.095	1.03	1.18	0.170	241
Structural Excavation/Removal	0.162	0.079	0.63	1.25	0.208	316
Base/Subbase/Imported Borrow	0.309	0.223	2.71	2.83	0.402	570
Structure Concrete	0.322	0.313	2.93	5.00	0.952	1,073
Paving	0.029	0.028	0.17	0.42	0.054	82
Drainage/Environment/Landscaping	0.046	0.045	0.25	0.57	0.089	107
Traffic Signalization/Signage/Striping/Painting	0.064	0.063	0.61	1.17	0.135	412
Project Total (US tons)	1.211	0.864	8.47	12.58	2.032	2,835

(c) Variant B

Phases / Emissions	PM_{10} (tons)	$PM_{2.5}$ (tons)	CO (tons)	NO_x (tons)	ROGs (tons)	CO_2 (tons)
Land Clearing/Grubbing	0.104	0.022	0.17	0.21	0.031	48
Roadway Excavation/Removal	0.209	0.125	1.39	1.60	0.230	323
Structural Excavation/Removal	0.187	0.103	0.86	1.69	0.281	426
Base/Subbase/Imported Borrow	0.386	0.297	3.66	3.81	0.543	767
Structure Concrete	0.435	0.423	3.97	6.77	1.286	1,459
Paving	0.039	0.038	0.22	0.57	0.073	112
Drainage/Environment/Landscaping	0.062	0.061	0.34	0.77	0.120	143
Traffic Signalization/Signage/Striping/Painting	0.087	0.085	0.83	1.58	0.182	557
Project Total (US tons)	1.509	1.154	11.45	17.01	2.745	3,835

(d) Variant C

Phases / Emissions	PM_{10} (tons)	$PM_{2.5}$ (tons)	CO (tons)	NO_x (tons)	ROGs (tons)	CO_2 (tons)
Land Clearing/Grubbing	0.106	0.024	0.20	0.24	0.036	55
Roadway Excavation/Removal	0.226	0.142	1.60	1.83	0.263	370
Structural Excavation/Removal	0.201	0.117	0.98	1.94	0.322	490
Base/Subbase/Imported Borrow	0.429	0.340	4.20	4.38	0.622	880
Structure Concrete	0.498	0.485	4.54	7.76	1.474	1,667
Paving	0.045	0.044	0.26	0.65	0.083	127
Drainage/Environment/Landscaping	0.071	0.069	0.39	0.89	0.138	164
Traffic Signalization/Signage/Striping/Painting	0.100	0.097	0.95	1.81	0.209	637
Project Total (US tons)	1.677	1.318	13.12	19.49	3.147	4,390

Daily average (pounds/day) and annual average (tons/year) ROG, CO, NO_x, PM, and CO_2 emitted from construction phase in the proposed project would be lower than SMAQMD thresholds (See the below Tables a, b, c, d and SMAQMD Thresholds of Significance Table). These emissions would be temporary and limited to the immediate area surrounding the construction site during the construction phase. The AQ report describes minimization measures for the construction phase.

Tables. Summary of Project Emissions:

(a) Variant A

	ROG	CO	NO_x	PM_{10}	$PM_{2.5}$	CO_2
Daily Average (lbs/day)	3.779	15.764	23.416	2.183	1.600	5280
Maximum Daily Average (lbs/day)	6.951	46.950	48.888	9.279	3.834	9843
Annual Average (tons/year)	0.454	1.892	2.810	0.262	0.192	634

(b) Variant A1

	ROG	CO	NO_x	PM_{10}	$PM_{2.5}$	CO_2
Daily Average (lbs/day)	3.387	14.123	20.973	2.019	1.440	4726
Maximum Daily Average (lbs/day)	6.230	42.08	48.83	9.172	3.450	8830
Annual Average (tons/year)	0.406	1.695	2.517	0.242	0.173	567

(c) Variant B

	ROG	CO	NO_x	PM_{10}	$PM_{2.5}$	CO_2
Daily Average (lbs/day)	4.575	19.080	28.345	2.515	1.924	6391
Maximum Daily Average (lbs/day)	8.414	56.818	59.136	9.496	4.611	11888

Annual Average (tons/year)	0.549	2.290	3.401	0.302	0.231	767

(d) Variant C

	ROG	CO	NO_x	PM_{10}	$PM_{2.5}$	CO_2
Daily Average (lbs/day)	5.246	21.873	32.482	2.795	2.197	7317
Maximum Daily Average (lbs/day)	9.649	65.160	67.843	9.678	5.267	13650
Annual Average (tons/year)	0.629	2.625	3.898	0.335	0.264	878

SMAQMD Thresholds of Significance Table

All Projects Subject to CEQA		
	Construction Phase	**Operational Phase**
Mass Emission Thresholds		
NO_X (ozone precursor)	85 pounds/day	65 pounds/day
ROG (VOC) (ozone precursor)	NONE	65 pounds/day
PM_{10}	**Zero (0).** If all feasible BACT/BMPs are applied, then 80 pounds/day and 14.6 tons/year	**Zero (0).** If all feasible BACT/BMPs are applied, then 80 pounds/day and 14.6 tons/year
$PM_{2.5}$	**Zero (0).** If all feasible BACT/BMPs are applied, then 82 pounds/day and 15 tons/year	**Zero (0).** If all feasible BACT/BMPs are applied, then 82 pounds/day and 15 tons/year
Land Development and Construction Projects		
	Construction Phase	**Operational Phase**
Greenhouse Gas Emissions (GHG) Thresholds		
GHG as CO2e	1,100 metric tons/year	1,100 metric tons/year

The AQ report describes minimization measures for the construction phase to reduce construction emissions.

Caltrans will implement the following measures listed below, however; they will be listed as minimization measures rather than mitigation measures. Caltrans determined that the air quality impact was less than significant.

- All exposed surfaces shall be watered two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
- Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways shall be covered.
- Use wet power vacuum street sweepers to remove any visible track out mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
- Limit vehicle speeds on unpaved roads to 15 miles per hour.
- All roadways, driveways, sidewalks, parking lots shall be paved as soon as possible. In addition, building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes (as required by the state airborne toxics control measure [Title 13, Section 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site.
- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment shall be checked by a certified mechanic and determine to be running in proper condition before it is operated.

This project does not require a VMT analysis under CEQA as the project does not propose to add additional motor vehicle capacity to the State Highway System. Caltrans proposes to rehabilitate the American River Bridge, perform scour mitigation and construct a Class 1 bike path. No traffic lanes will be added.

Carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), Hydrofluorocarbons (HFCs) emissions from construction activities were estimated. The below Tables (a, b, c, and d) summarizes estimates of GHG emissions during the proposed construction periods for the project. The carbon dioxide equivalent (CO_2e) produced during construction phase is approximately estimated to be 4,763 metric tons in the variant A, 4,254 metric tons in the variant A1, 5,781 metric tons in the variant B, and 6,602 metric tons in the variant C. Construction GHG emissions in Variants A and A1 during 2023 and in Variants B during 2023 and 2026 would exceed the established significance threshold (1100 metric CO_2e tons/year = 1213 US CO_2e tons/year) in SMAQMD. The project with Variant C would exceed the significance threshold of 1100 metric CO_2e tons/year during the construction years (See the below Tables). However, these emissions would be temporary and limited to the immediate area surrounding the construction site and would be mitigated by on-site GHG emission reduction measures during the construction phase

Tables. Estimates (US tons) of GHG Emissions during Construction

(a) Variant A

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

(b) Variant A1

Construction Year	CO_2 (US tons)	CH_4 (US tons)	N_2O (US tons)	HFCs (US tons)	CO_2e^* (US tons)
2022	535	0.016	0.032	0.017	796.536
2023	831	0.026	0.040	0.027	1,243.17
2024	501	0.016	0.024	0.023	848.952
2025	462	0.015	0.023	0.021	780.029
2026	507	0.014	0.036	0.034	1,021.278

Total	2835	0.087	0.155	0.122	4,688.965

(c) Variant B

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	3,835	0.126	0.210	0.167	6,372.330

(d) Variant C

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	1,928.076
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). Each GWP of CO_2, CH_4, N_2O, and HFCs is 1, 25, 298, and 14,800, respectively.

The followings can be considered on-site GHG emission reduction measures for the construction phase in SMAQMD. With implementation of the below reduction measures, construction GHG emissions would be controlled.

- Enforce idling time restrictions for construction vehicles
- Require construction vehicles to operate with the highest tier engines commercially available
- Divert and recycle construction and demolition waste, and use locally-sourced building materials with a high recycled material content to the greatest extent feasible

- Minimize tree removal, and mitigate indirect GHG emissions increases that occur because of vegetation removal, loss of sequestration, and soil disturbance
- Utilize existing grid power for electric energy rather than operating temporary gasoline/diesel powered generators
- Increase use of electric and renewable fuel powered construction equipment and require renewable diesel fuel where commercially available
- Require diesel equipment fleets to be lower emitting than any current emission standard

The AQ report includes quantified projections of construction GHG emissions without implementation of GHG reduction measures *(See the Sections of Short-term impact analyses).* On-site GHG emission reduction measures for the construction phase would reduce construction GHG emissions. However, the AQ report does not have the guidance for quantified projection of construction GHG emissions with implementation of GHG reduction measures
If biodiesel can be used for off-road engine equipment as a reduction measure, construction GHG emissions would be reduced; unfortunately, the tool does not provide quantified projections with implementation of GHG reduction measures (i.e. biodiesel application). CAL-CET2018 is a spreadsheet tool for estimating pollutant emissions from transportation project construction activities. The tool performs intermediate emissions calculations based on the input data provided by users (type of construction activities, duration of construction, construction cost, project length, road type, construction starting date, etc.), emission factors from the California Air Resources Board's (CARB) OFFROAD model, California's GHG inventory (for off-road equipment), and emission factors from CARB's EMFAC model (for on-road trucks and water trucks). Therefore, CAL-CET has been applied for Caltrans' Transportation projects in order to estimate construction emissions.

Caltrans will consider using renewable diesel fuel for construction equipment to support GHG reductions.

8. Harvey Tran – Environmental Scientist, California Department of Fish and Wildlife

From: Tran, Harvey@Wildlife
To: SR51 American River Bridge@DOT
Cc: Wildlife R2 CEQA
Subject: 03-3F070 American River Bridge Deck Replacement Project Draft IS/MND - CDFW CEQA comments
Date: Wednesday, November 18, 2020 10:49:00 AM

EXTERNAL EMAIL. Links/attachments may not be safe.

Good morning Sandeep Sandhu:

The California Department of Fish and Wildlife (CDFW) appreciates the opportunity to comment on the proposed draft Mitigated Negative Declaration (MND) for the American River Bridge Deck Replacement Project (Project). CDFW is responding to the draft MND as a Trustee Agency for fish and wildlife resources (Fish & G. Code, §§ 711.7 & 1802, and CEQA Guidelines, §§ 15386), and as a Responsible Agency regarding any discretionary actions (CEQA Guidelines Section 15381), such as the issuance of a Lake or Streambed Alteration Agreement (California Fish and Game Code Sections 1600 et seq.) and/or a California Endangered Species Act (CESA) Permit for incidental take of Endangered, Threatened, and/or Candidate species (California Fish and Game Code Sections 2080 and 2080.1).

This project would rehabilitate the American River Bridge along State Route (SR) 51 in Sacramento County from post mile 2.0 to 3.5. The project would consist of removing and replacing the existing concrete deck and the steel girder post-tensioning systems in spans 1 and 2, modifying the existing soundwall, installing sheet piling around piers for scour mitigation, constructing concrete catcher blocks, widening the bridge to accommodate traffic during construction, and adding a Class I bike/pedestrian path.

CDFW recommends the following items be addressed in the CEQA document:

1. Page 6 **Construction Sequence of Project**
CDFW recommends that Caltrans considers utilizing a vibratory hammer in place of an impact hammer to conduct pile driving activities as much as possible. The vibratory hammer will reduce the hydroacoustic effects on aquatic species.

2. Pages 25 and 52 **Mitigation for Jurisdictional Waters of the United States and State**
CDFW does not accept in-lieu fee for mitigation to areas subjected to 1602 Notification. CDFW may ask for greater than 1:1 mitigation depending on the quality of the habitat impacted. Mitigation purchase should be done in the American River Parkway and/or a CDFW-approved mitigation bank.

3. Page 48 **Riparian Impacts**
CDFW recommends that Caltrans clarifies how it calculated the 5.21 acre of permanent impact to riparian habitat. Caltrans should state if only the structural components were used to calculate the area of impacts or if the newly shaded areas from the expansion was included as well.
In addition, CDFW recommends that Caltrans specify the exact mitigation ratio for riparian impacts. CDFW also recommends that Caltrans keep any mitigation within the American River Parkway and add additional option of developing agreement with County Parks using the upcoming American River Parkway Natural Resources Management Plan for additional mitigation options.

4. Page 50 **Wetlands and Other Waters**
CDFW recommends that Caltrans assess floodplain impacts and not just focus on riparian and wetland because a majority of the Project area is floodplain. Project impacts on the floodplain may result in debris ending in areas subjected to 1602 Notification.

5. Page 53 **Animal Species**
CDFW recommends that an assessment for potential bat species be included in the MND due to the high likelihood of them utilizing the bridge or nearby riparian trees as potential roosting habitat.

6. Page 53 **Plant Species**
CDFW recommends the plant survey section be expanded to describe the details of the survey including what species were surveyed for, where the surveys were conducted, or if CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* were followed. CDFW is aware that Sanford's arrowhead (1B.2, not listed) can be found in the floodplain wetlands in the American River Parkway.

7. Pages 54 and 55 **Migratory Birds**
CDFW identifies the bird nesting season starting February 1 instead of February 15. CDFW recommends updating this date throughout the MND.

8. Page 54 **Migratory Birds – Environmental Consequences**
Due to potential for nesting birds in the Project area, CDFW recommends that a Bird Management and Monitoring Plan (Plan) measure be included in the MND. The Plan measure should include requirements related to survey results and the implementation of appropriate avoidance measures such as, but not limited to, temporary no-disturbance buffers, sound walls, visual barriers, and/or changes in Project phasing to protect the nest and the birds. The Plan design should be based upon site conditions, Project activities, and species present or likely to be present during all construction activities.
In addition, CDFW believes that there is potential for white-tailed kite within ¼ mile of the Project area. CDFW recommends that this language be included in the MND:
If it is determined during surveys or project implementation that project activities may impact a fully protected raptor (such as white-tailed kite), project personnel shall fully avoid any impacts that may result in take of fully protected bird species if any are observed to be utilizing the project area or adjacent area.
CDFW also recommends the avian preconstruction survey area be increased from the 500 ft stated in the MND. Due to the scale of the Project, CDFW recommends the survey area be at least 600 ft. In addition, CDFW recommends an additional survey be done if Project activities lapse for at least 14 days.

9. Pages 59 **Swainson's hawk - Environmental Consequences**
CDFW recommends that the preconstruction survey for SHWA be completed with a 0.5 mile survey radius in accordance with the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley

10. Page 67 **Noise levels for impact pile driving of the piles, in-water**
CDFW recommends a September 30 end date in order to protect the fall-run Chinook salmon escapement in the American River. Although fall-run Chinook is a species of special concern and is not listed, these salmon begin entering the river in late-August, early-September. By October 15, the numbers are substantially higher. If Caltrans cannot afford to lose 15 days of work, then CDFW recommends a work start date of May 15 instead. CDFW fisheries took a look at the Lower American River screw trap data from 2013-2020 to ascertain the latest dates they have captured spring- and winter-run juveniles. The latest spring-run have been seen in the traps is late-April, and the latest winter-run have been seen is early-April. Thus, CDFW believes a start date of May 15 would be adequate, but only if the work end date is September 30.

11. Page 68 **Project Features: Fish Measures**
CDFW recommends that the Fish Salvage plan be approved by CDFW as well.

12. Page 69 **Project Features: BMPs for Erosion Control**
CDFW recommends that monofilament materials not be used for erosion control.

13. Page 70 **Project Features: In-water Project Activities**
CDFW recommends including text that states all Project activities shall also comply with LSAA and CESA requirements.

14. Pages 71 **Mitigation – Fish species**
CDFW recommends that Caltrans confirms how it calculated the 0.45 acre of permanent impact to habitat of federally listed salmonid, as it does not match the previous pages where the project was stated to have 5.21 acre of permanent riparian impacts and 0.33 acre of permanent Jurisdictional Waters of the United States and State (stream) impacts.

Please note that when acting as a responsible agency, CEQA guidelines section 15096, subdivision (f) requires CDFW to consider the CEQA environmental document prepared by the lead agency prior to reaching a decision on the project. Addressing CDFW's comments and disclosing potential Project impacts on CESA-listed species and any river, lake, or stream, and provide adequate avoidance, minimization, mitigation, monitoring and reporting measures; will assist CDFW with the consideration of the MND.

Thanks.

Harvey Tran
Environmental Scientist
California Department of Fish and Wildlife
Region 2 - North Central Region
Habitat Conservation Program
(916) 358-4035

Response to Comment 8:

Thank you for reviewing the Environmental Document and providing your comments and recommendations. Caltrans will try to implement the recommended measures and consider adjusting the proposed work windows, where applicable.

Caltrans completed many plants and animal surveys which included Sanford's arrowhead, bats, and Swainson's Hawk. Surveys for special status species were completed on May 30, 2018 and July 2, 2018. Sanford's arrowhead was not found. Multiple bat surveys were also completed at various times. On September 16, 2019 bat surveys were completed during the daytime for signs of bat roosting and on October 8 and October 21, 2019 at dusk, to watch for bats exiting bridge. No bats or evidence of bats roosting were found. Surveys for the Swainson's Hawk were conducted on January 6, 2020, January 8, 2020, January 21, 2020, January 30, 2020 and February 7, 2020. No Swainson's Hawk have been found nor any evidence of roosting within the project area. These survey reports have already been sent to CDFW and can be sent again if requested.

During construction, vibratory hammers will be used as much as possible, where feasible, to reduce the hydroacoustic effects on aquatic species. Mitigation purchases for the 1600 Permit will be completed in the American River Parkway and/or a CDFW-approved mitigation bank. The in-lieu fee for mitigation will be completed for the 404 permit per USACE requirements. Caltrans also assessed floodplain impacts and did not just focus on riparian and wetland impacts. A Floodplain study was completed, and this project is expected to have a less than significant impact to the floodplain.

The permanent impact to riparian habitat was calculated using the structural components as well as newly shaded areas. The permanent impact to federally listed salmonid habitat will be different than the riparian and Jurisdictional Water impacts.

9. Cynthia Herzog – Senior Environmental Scientist, California State Lands Commission

STATE OF CALIFORNIA GAVIN NEWSOM, *Governor*

CALIFORNIA STATE LANDS COMMISSION
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

JENNIFER LUCCHESI, *Executive Officer*
(916) 574-1800 *Fax* (916) 574-1810
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from Voice Phone 1-800-735-2922

Contact Phone: **(916) 574-1890**

Established in 1938

November 18, 2020

File Ref: SCH # 2020100388

Mr. Sandeep Sandhu
California Department of Transportation
Environmental Management M5 Branch
703 B Street
Marysville, CA 95901

VIA ELECTRONIC MAIL ONLY (sandeep.sandhu@dot.ca.gov)

Subject: Initial Study/Mitigated Negative Declaration (IS/MND) for the American River Bridge Deck Replacement Project, Sacramento County

Dear Mr. Sandhu:

The California State Lands Commission (Commission) staff has reviewed the subject IS/MND for the American River Bridge Deck Replacement (Project), which is being prepared by the California Department of Transportation (Caltrans). Caltrans, as the public agency proposing to carry out the Project, is the lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq). The Commission is a trustee agency for projects that could directly or indirectly affect State sovereign land and their accompanying Public Trust resources or uses. Additionally, because the Project involves work on State sovereign land, the Commission will act as a responsible agency.

Commission Jurisdiction and Public Trust Lands

The Commission has jurisdiction and management authority over all ungranted tidelands, submerged lands, and the beds of navigable lakes and waterways. The Commission also has certain residual and review authority for tidelands and submerged lands legislatively granted in trust to local jurisdictions (Pub. Resources Code, §§ 6009, subd. (c); 6009.1; 6301; 6306). All tidelands and submerged lands granted or ungranted, as well as navigable lakes and waterways, are subject to the protections of the common law Public Trust Doctrine.

As general background, the State of California acquired sovereign ownership of all tidelands and submerged lands and beds of navigable lakes and waterways upon its admission to the United States in 1850. The state holds these lands for the benefit of all

people of the state for statewide Public Trust purposes, which include but are not limited to waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation, and open space. On tidal waterways, the State's sovereign fee ownership extends landward to the mean high tide line, except for areas of fill or artificial accretion or where the boundary has been fixed by agreement or a court.

After review of the information contained in the IS/MND, the existing bridge crossing the American River is located on State sovereign land under the jurisdiction of the Commission. In 1950, the Commission authorized the issuance of Lease No. PRC 571 with Caltrans for the bridge right-of-way. Based upon the information provided and a review of our in-house records, it appears that the Project may expand the bridge from the existing right-of-way. If the Project extends beyond the existing right-of-way, an application for a new lease or lease amendment will be required. Please contact Ninette Lee (information provided below) for information on the Commission's leasing jurisdiction (reference Inquiry No. 2319).

Project Description

Caltrans proposes to rehabilitate the American River Bridge along State Route (SR) 51 in Sacramento County from post mile 2.0 to 3.5, which includes a section of the American River Parkway and is part of the Interstate 80 Business Loop in the city of Sacramento. 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 State Road 51. The Project would meet Caltrans' objectives and needs as follows:

- Prevent scour around existing piers
- Repair, protect, and extend the service life of the deck
- Provide a multimodal connection between downtown and eastern Sacramento and plan for future transportation needs

From the Project Description, Commission staff understands that the construction activities in and over the water have the potential to affect State sovereign land. Direct impacts would include:

- Placement of a total of 450 supportive 30-inch diameter steel shell piles filled with concrete and rebar for bridge retrofitting.
- Placement of a total of 700 18" steel pipe piles to support the trestle, including installation of 1,650 temporary 20-inch sheet pilings around the piers to act as cofferdams.
- Installation of the seal course (reinforced concrete footers) and pile caps.

Indirect impacts could include the removal and replacement of the existing concrete deck and steel girder post-tensioning systems, and land-based construction adjacent to the riverbank.

Environmental Review

Commission staff requests that Caltrans consider the following comments on the Project's IS/MND to ensure that impacts to State sovereign land are adequately analyzed for the Commission's use of the MND to support a future lease approval for the Project.

General Comments

1. As the public may not be familiar with the location of SR 51, Commission staff suggests that the Project location information include that the Project area is part of the Interstate 80 Business Loop in the city of Sacramento, and also that the Project area includes a section of the American River Parkway.

2. On page 11 of the IS/MND, Commission staff requests that the Commission be identified as a public agency with jurisdiction and discretionary approval over the Project.

Project Description:

3. The Project Description does not specify the daily hours of construction. The Aesthetics section of the Environmental Checklist states that "The proposed project elements will not create a new source of substantial light or glare" (p. 22). Because no impacts would occur, Commission staff requests that the IS/MND clearly state that no night work would be conducted.

4. Page 7 of the IS/MND describes pile driving and states that it "…will be performed behind an aquatic sound attenuation device." Commission staff requests that additional information regarding the device be included in the Project Description to better clarify how the reduction of the transmission of sound through water would be obtained.

5. Commission staff also requests that the Project Description describe the equipment and vessels that will be used to install the trestle piles. If barges would be used for installation, please include the origin of the barges and how many vessels would be on the river at any given time.

6. The Project Description states that the Project would widen the bridge to accommodate traffic during construction; however, the additional width is not specified, and the accompanying plans are not easily read. Commission staff requests that the Project Description clearly state how many feet the bridge would be widened as part of this Project.

7. During the removal of the existing concrete deck and other Project components, Commission staff requests that the IS/MND specify how portions of these materials will be kept from falling to the river, which would create hazards and possibly affect water quality.

Air Quality

8. Page 24 of the IS/MND states "The project would not result in changes to roadway capacity or traffic volumes and would not increase operational emissions above existing conditions." As noted in #5 above, the bridge would be widened. Commission staff requests that a statement be added under Air Quality affirming that the additional width of the bridge would not be used to support additional traffic (which likely would increase emissions) until the separate environmental document for Caltrans EA 03-0H931, SR 51 Corridor Improvements project, noted on page 1 of the IS/MND, has been adopted/certified.

Cultural Resources

9. The IS/MND should mention that the title to all abandoned shipwrecks, archaeological sites, and historic or cultural resources on or in the tide and submerged lands of California is vested in the state and under the jurisdiction of the Commission (Pub. Resources Code, § 6313). Commission staff requests that Caltrans consult with Staff Attorney Jamie Garrett should any cultural resources on state lands be discovered during construction of the proposed Project. In addition, Commission staff requests that the following statement be included in the MND's Mitigation and Monitoring Plan: "The final disposition of archaeological, historical, and paleontological resources recovered on state lands under the jurisdiction of the California State Lands Commission must be approved by the Commission."

10. Although it is understood that archaeological surveys were conducted within the Project area, there is always the possibility of unanticipated discoveries. Therefore, Commission staff requests that mitigation for unknown cultural resources be included in the IS/MND.

Hydrology and Water Quality

11. In-water work would undoubtedly result in increased turbidity, which can negatively affect fish and other aquatic species. Commission staff requests that the IS/MND address impacts associated with increased turbidity during construction activities and include mitigation measures to address such impacts should they be found to be significant.

Noise

12. Impacts due to underwater noise and vibration are not discussed in either the Biological or Noise sections of the IS/MND. The Project Description does briefly mention an aquatic sound attenuation device (see Comment #3). However, due to the potential for significant impacts resulting from pile driving, Commission staff suggest that a discussion of this impact be included in the analysis to clarify how Caltrans would avoid barotrauma effects to fish and other species if the underwater sound pressure levels caused by pile-driving activities exceed known injury thresholds. The IS/MND should discuss the type of piles and methods proposed for

pile installation and analyze the potential for these activities to disturb, injure, or kill sensitive fish (including eggs and larvae) or other organisms.

Recreation

13. Attachment A - Section 4(f) Study, of the MND states that "The Cal Expo portion of the Parkway is popular for nature viewing, bicycling, equestrian use, hiking, picnicking, and informal access to the river." The study addresses temporary detours for the bike trail, but does not discuss the Project's impact to other recreational uses, in particular, access to the American River and navigation. Commission staff request that additional detail be provided to clarify all impacts to recreation within the Project area.

Thank you for the opportunity to comment on the IS/MND for the Project. As a possible responsible and trustee agency, the Commission may need to rely on the adopted MND for the issuance of a new or amended lease as specified above and, therefore, we request that you consider our comments prior to adoption of the MND.

Please send copies of future Project-related documents, including electronic copies of the adopted MND, Mitigation Monitoring and Reporting Program, and Notice of Determination when they become available. Please refer questions concerning environmental review to Cynthia Herzog, Senior Environmental Scientist, at (916) 574-1310 or cynthia.herzog@slc.ca.gov. For questions concerning archaeological or historic resources under Commission jurisdiction, please contact Staff Attorney Jamie Garrett, at (916) 574-0398 or jamie.garrett@slc.ca.gov. For questions concerning Commission leasing jurisdiction, please contact Ninette Lee, Public Land Manager, at (916) 574-1869 or ninette.lee@slc.ca.gov.

Sincerely,

Nicole Dobroski, Chief
Division of Environmental Planning
and Management

cc: Office of Planning and Research
N. Lee, Commission
J. Garrett, Commission
C. Herzog, Commission

Response to Comment 9:

Thank you for your comment. Night work will be needed in order to reduce overall construction time and make traffic staging shifts as needed to replace the bridge deck. Exact dates and times will be determined during final design.

The reduction of the transmission of sound through water would be achieved by placing cofferdams via vibratory method, dewater the cofferdam, and pile the piles thereafter. The

trestle installation is typically done with 18” piles driven with a large crane holding the pile leads and the impact hammer. They start on land and drive the first trestle bent piles, install the bent cap, then stringers are laid out to the bent and crane mats laid on the stringers. Then the crane is moved on to the first span on the trestle. Then the next bent is constructed and the process repeated until the trestle is completed.

A more detailed project description can be found in the Alternatives section of the document. The project description section is used to generally describe the project and the alternative section is used to further detail the expected work. During the removal of the existing concrete deck and other project components, the use of space frame platforms to make sure debris does not fall into the river will be utilized.

Air Quality:

The American River Bridge Deck Replacement project will not increase vehicular capacity because no additional lanes will be striped for the project. In order to provide any increased lane capacity, lanes would need to be constructed much longer than the 3000’ indicated in the current project limits. As no additional lanes will be striped for this project, no significant impacts to VMT, air quality, GHG, or climate change are anticipated.

Alternative 1 proposes to widen the bridge an additional 54’-11” on the northbound side of the bridge. Once complete, the bridge will be 151’-6” wide from outside edge-of-deck to edge-of-deck. The planned width of 151’-6” does not provide sufficient width for a corridor project to be constructed. The bridge widening is being done to allow all existing lanes to be operational during construction.

Cultural:

The statement request was included in the Environmental Document. Caltrans determined that work would not occur within the jurisdiction of the State Lands Commission. If unanticipated discoveries are made, Caltrans will handle them using the Section 106 Programmatic Agreement.

Water Quality:

Turbidity was discussed in the biology section of the environmental document. Caltrans will implement a Stormwater Pollution Prevention Plan (SWPPP) to ensure all BMPs for water quality are performed during construction activities. In addition, restricting in-channel activities to the low flow period between June 1 and October 15 would minimize sediment inputs and avoid the period of peak abundance of (salmonid species) juveniles. These proposed measures would minimize potential impacts as a result of temporary increases in sedimentation and turbidity.

Noise:

The impacts due to underwater noise and vibrations were discussed in the environmental document. See page 65 section *Temporary Increase in Underwater Noise and Vibrations from Pile Driving* for underwater noise and vibration discussion.

The number and size of piles shall be limited to the minimum necessary to meet the engineering and design requirements. The reduction of the transmission of sound through water would be achieved by placing cofferdams via vibratory method, dewater the cofferdam, and pile the piles thereafter. 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 in. piles for the temporary trestle will be

performed behind an aquatic sound attenuation device that reduces transmission of sound through the water.

Recreation:

Caltrans cannot maintain continual public access to some features of the park, such as portions of the bike trail underneath the American River Bridge and dirt road from the Ethan Way entrance to the American River Bridge. The bike trail underneath the American River Bridge will be impacted due to construction and the trail form Ethan Way may potentially be used as staging and access to the construction site. Other features of the Parkway, that are not directly impacted due to construction, will remain open to the public. This includes Bushy Lake, nature viewing, and access to the American River. There will not be any adverse effects to the park features, attributes, or activities.

10. Luther Johnson

From:	Luther Johnson
To:	SR51 American River Bridge@DOT
Cc:	sacramentorpna@gmail.com; csperri@comcast.net; Suzi Gorsuch
Subject:	What will the noise/percussion impact be on children/newborns
Date:	Wednesday, November 18, 2020 9:42:53 PM

EXTERNAL EMAIL. Links/attachments may not be safe.

Hello and to whom it may concern,
What is the impact radius of the pile driving and at what distance are children safe from percussion impacts? I ask because I have a newborn on Erlewine Circle in River Park. I do know there is a safe distance but don't know what that distance is and whether the impact is age dependent.
My understanding is this work is scheduled to commence in the fall of 2022?

Thank you,
Lute Johnson
(408) 529-1499

Response to Comment 10:

Thank you for your comment. Caltrans is working with our Headquarters Safety Office and a certified industrial hygienist since this is directly related to health and safety, to determining minimum safe distance.

11. Rick Carter – Principal Civil Engineer, Sacramento County Department of Transportation

From: Carter. Rick <CarterR@saccounty.net>
Sent: Thursday, November 19, 2020 9:06 AM
To: Peri, Clark A@DOT <clark.peri@dot.ca.gov>
Cc: McDaniel. Mikki <mcdanielm@saccounty.net>; Irving. Bill <irvingb@SacCounty.NET>
Subject: RE: American River Bridge DED - Capital City Freeway

EXTERNAL EMAIL. Links/attachments may not be safe.

Clark,
Thanks for forwarding this. Comments from my staff are below. Let me know if you have any questions.

- Alternative 1 provides the best access for bike/peds and is especially beneficial for residents in the West Arden environmental justice community. Lighting is very helpful, particularly for shift workers. Can the Class I path on the bridge connect down to the American River trail for the benefit of commuters? Where will the bike/ped path begin and terminate in the City of Sacramento on the north and south side of the American River Parkway?

Fig 10 (page 24/107) shows a typ cross section of SR 51 on the NB (right hand) side I assume the intention is to provide a cross slope of the entire bike/ped path will not exceed 2% (1;48). So, obviously if the super-elevation on the bridge deck is in excess of 2%, the final buildup on the bridge deck for the Peds will limited to a cross slope (super-elevation) of 1:48.

Obviously Caltrans should know that, in general, all bike/ped accessible routes, and any construction detours and temporary construction routes must be accessible and clearly be marked with signage.

Thanks,

Rick Carter, PE, TE

Response to Comment 11:

Thank you for your comments. The current intent of the project design is to provide a connection for bike and pedestrians down to the American River Trail to benefit the commuters both on the North and South side of the levees. The bike trail is anticipated to conform to the top of levees on the East side of the bridge. Cross slopes will be designed per standard and are ADA Compliant. This will be achieved by HMA overlay to achieve proper cross grades.

Regarding signage, please see planned detours routes for bike path in the Section 4(f) study.

12. Rob Ferrera – Environmental Services Specialist, SMUD

Powering forward. Together.

SMUD®

Sent Via E-Mail

November 19, 2020

Sandeep Sandhu
California Department of Transportation
Environmental Management M5 Branch
703 B Street
Marysville, CA 95901
SR51.American.River.Bridge@dot.ca.gov

Subject: **SAC-51 American River Bridge Deck Replacement | MND | 2020100388**

Dear Mr. Sandhu:

The Sacramento Municipal Utility District (SMUD) appreciates the opportunity to provide comments on the Mitigated Negative Declaration (MND) for the SAC-51 American River Bridge Deck Replacement (Project, SCH 2020100388). SMUD is the primary energy provider for Sacramento County and the proposed Project area. SMUD's vision is to empower our customers with solutions and options that increase energy efficiency, protect the environment, reduce global warming, and lower the cost to serve our region. As a Responsible Agency, SMUD aims to ensure that the proposed Project limits the potential for significant environmental effects on SMUD facilities, employees, and customers.

It is our desire that the Project will acknowledge any impacts related to the following:

- Overhead and or underground transmission and distribution line easements. Please view the following links on smud.org for more information regarding transmission encroachment:
  - https://www.smud.org/en/Business-Solutions-and-Rebates/Design-and-Construction-Services
  - https://www.smud.org/en/Corporate/Do-Business-with-SMUD/Land-Use/Transmission-Right-of-Way
- Utility line routing
- Electrical load needs/requirements
- Energy Efficiency
- Climate Change
- Cumulative impacts related to the need for increased electrical delivery

SMUD HQ | 6201 S Street | P.O. Box 15830 | Sacramento, CA 95852-1830 | 1.888.742.7683 | smud.org

More specifically, SMUD would like to offer the following project specific comments:

If the potential need to relocate and or remove any SMUD infrastructure that may be affected in or around the project area is a consideration, then this should be considered a part of the project and the analysis of these impacts should be included. SMUD has extensive overhead and underground utility lines in or adjacent to the project footprint:

- 12kV lines passing underground from Tribute Rd to Cal Expo
- 12kV underground lines along Bus 80 interstate
- 12kV underground lines along Exposition Blvd
- 21kV overhead crossing west side of SPRR tracks (east end of McKinley Village
- 21kV overhead (1 span) parallel to south side of Bus 80 (east end of McKinley Village)
- 21kV overhead crossing approximately 1250 ft. north-east of McKinley Village Way
- 21kV overhead feeder crossing "south" side of McKinley Village Way

SMUD would like to be involved with discussing the above areas of interest as well as discussing any other potential issues. We aim to be partners in the efficient and sustainable delivery of the proposed Project. Please ensure that the information included in this response is conveyed to the Project planners and the appropriate Project proponents.

Environmental leadership is a core value of SMUD, and we look forward to collaborating with you on this Project. Again, we appreciate the opportunity to provide input on this MND. If you have any questions regarding this letter, please do not hesitate to contact me at 916.732.6676, or by email at rob.ferrera@smud.org.

Sincerely,

Rob Ferrera
Environmental Services Specialist
Sacramento Municipal Utility District
6201 S Street
Sacramento, CA 95817

cc: Entitlements

Response to Comment 12:

Thank you for your comment. Caltrans' Utility Coordinator (UC) is in contact with the SMUD's Utility Owner environmental representative. The Utility Owner's (UO) concerns for relocation are mitigated or addressed throughout the progress of the project and are not typically reported in a public comment format. The UO representative confirmed with SMUD that there are no utility conflicts.

The UC reported to SMUD that currently there are no conflicts with SMUD's facility. Caltrans will continue to maintain communication with SMUD throughout the design and construction phases of the project.

13. Angela Nguyen-Tan – Environmental Scientist, Central Valley Regional Water Quality Control Board

CALIFORNIA Water Boards

GAVIN NEWSOM GOVERNOR

JARED BLUMENFELD SECRETARY FOR ENVIRONMENTAL PROTECTION

Central Valley Regional Water Quality Control Board

19 November 2020

Sandeep Sandhu
California Department of Transportation
703 B Street
Marysville,CA 95901

COMMENTS TO REQUEST FOR REVIEW FOR THE MITIGATED NEGATIVE DECLARATION, SAC-51 AMERICAN RIVER BRIDGE DECK REPLACEMENT, SCH#2020100388, SACRAMENTO

Pursuant to the State Clearinghouse's 21 October 2020 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Mitigated Negative Declaration* for the SAC-51 American River Bridge Deck Replacement, located in Sacramento County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

I. Regulatory Setting

Basin Plan

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has adopted a Basin Plan amendment in noticed public hearings, it must be approved by the State Water Resources Control Board (State Water Board), Office of

KARL E. LONGLEY ScD, P.E., CHAIR | PATRICK PULUPA, ESQ., EXECUTIVE OFFICER

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Administrative Law (OAL) and in some cases, the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues. For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website:
http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/

Total Maximum Daily Load – Planning and Assessment

To minimize sediment movement that could trigger algal blooms, the Central Valley Water Board recommends the project activities occur outside of the timeframe of June through September.

Portions of the Lower American River (Nimbus Dam to confluence with Sacramento River) are within the project area and are currently on the Clean Water Act Section 303(d) List of Impaired Waters due to chlordane, chlorpyrifos, DDT (dichlorodiphenyltrichloroethane), diazinon, dieldrin, electrical conductivity, Group A pesticides, invasive species, mercury, PCBs (polychlorinated biphenyls), and toxicity. Central Valley Water Board staff recommends referencing the most current 303(d) list and requirements contained in existing TMDLs for the Lower American River within the Mitigated Negative Declaration, discussing any potential short- and long-term effects of these pollutants from project activities or program level impacts, and discussing mitigation measures and/or best management practices to reduce potential effects.

Antidegradation Considerations

All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Implementation Policy is available on page 74 at:
https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr_201805.pdf

In part it states:

Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.

This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.

II. Permitting Requirements

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit), Construction General Permit Order No. 2009-0009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). For more information on the Construction General Permit, visit the State Water Resources Control Board website at: http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits[1]

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at: http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at: http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 2014-0057-DWQ. For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:

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[1] Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACE). If a Section 404 permit is required by the USACE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements. If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications. For more information on the Water Quality Certification, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/water_issues/water_quality_certification/

Waste Discharge Requirements – Discharges to Waters of the State

If USACE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation. For more information on the Waste Discharges to Surface Water NPDES Program and WDR processes, visit the Central Valley Water Board website at:https://www.waterboards.ca.gov/centralvalley/water_issues/waste_to_surface_water/

Projects involving excavation or fill activities impacting less than 0.2 acre or 400 linear feet of non-jurisdictional waters of the state and projects involving dredging activities impacting less than 50 cubic yards of non-jurisdictional waters of the state may be eligible for coverage under the State Water Resources Control Board Water Quality Order No. 2004-0004-DWQ (General Order 2004-0004). For more information on the General Order 2004-0004, visit the State Water Resources Control Board website at:

https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2004/wqo/wqo2004-0004.pdf

Dewatering Permit

If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Threat General Order) 2003-0003 or the Central Valley Water Board's Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Threat Waiver) R5-2018-0085. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at: http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf

For more information regarding the Low Threat Waiver and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2018-0085.pdf

Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Limited Threat Discharges to Surface Water* (Limited Threat General Order). A complete Notice of Intent must be submitted to the Central Valley Water Board to obtain coverage under the Limited Threat General Order. For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2016-0076-01.pdf

NPDES Permit

If the proposed project discharges waste that could affect the quality of surface waters of the State, other than into a community sewer system, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit. For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/help/permit/

SAC-51 American River Bridge Deck Replacement- 6 - Sacramento 19 November 2020

If you have questions regarding these comments, please contact me at (916) 464-0335 or Angela.Nguyen-Tan@waterboards.ca.gov.

Angela Nguyen-Tan
Environmental Scientist

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento

Response to Comment 13:

Thank you for your comment. Caltrans will adhere to the measures outlined above.

14. F. Thomas Biglione

From: ftbiglione@gmail.com
To: SR51 American River Bridge@DOT
Cc: "flweiland"; "JoEllen Arnold"; "Dale Steele"; "Save the American River Association"; "Kelly Cohen"; "Dan Meier"; Mark Robinson; Jill Van Houten
Subject: Upload of 03-3F070: American River Bridge Deck Replacement Workshop Video
Date: Saturday, November 21, 2020 12:00:24 PM

EXTERNAL EMAIL. Links/attachments may not be safe.

Were you successful in uploading the 03-3F070: American River Bridge Deck Replacement Workshop Video?

I am not able to locate it with the bit.ly link or a search by name on the channel.

Below is the link to the Caltrans District 3 YouTube Channel for the Public Meeting Video.
https://bit.ly/2wX4Rfl

Thank you,

Tom

F. Thomas Biglione
500 25th Street
Sacramento, CA 95816
Mobile 209-601-2724

"The health of our waters is the principal measure of how we live on the land."
~ Luna Leopold

Response to Comment 14:

Thank you for your comment. We apologize for the inconvenience. We experienced some technical issues uploading the virtual public meeting video. The issue was resolved on 12/6/2020 and the video was posted at the link below.

Link to video: https://youtu.be/MSsAJIfJ-Bo

15. Carla DuCray and Phyllis Houston

> On Tue, Nov 17, 2020 at 1:34 PM Carla DuCray <carladucray@gmail.com> wrote:
>
> > Hi Clark ~
> >
> > We have been reviewing the American River Bridge Deck Replacement Initial Study with Proposed Mitigated Negative Declaration document. The document states:
> >
> > *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*
> >
> > We have a few questions that we would appreciate a response to ASAP:
> >
> > When did the video presentation occur?
> >
> > What avenues were used to inform the public about this presentation?
> >
> > It does not appear that the video has been posted to the website and the final date for comments on the project is fast approaching. Will this comment date be extended?
> >
> > Thank you ~
> >
> > Carla DuCray and Phyllis Houston
> > Residents at 3759 and 3754 Erlewine Circle

Response to Comment 15:

Thank you for your comment. We apologize for the inconvenience. We experienced some technical issues uploading the virtual public meeting video. The issue was resolved on 12/6/2020 and the video was posted at the link below.

Link to video: https://youtu.be/MSsAJIfJ-Bo

Given the delay of the video, we have extended the public comment period to December 18, 2020.

The link to the video was provided in the Draft Environmental Document (DED). The DED was emailed to regulatory agencies, the Riverpark Neighborhood Association President, and Vice President. There was also a notice posted in the Sacramento Bee shortly after the document went public on 10/22/20.

After reviewing the document and the video, if you would like, we can set up a phone call, WebEx or Zoom meeting to discuss specific concerns or provide additional information on the project. Please make any requests for this through the project email address: SR51.American.River.Bridge@dot.ca.gov

16. Carla DuCray and Phyllis Houston

From: Carla DuCray <carladucray@gmail.com>
Sent: Tuesday, November 24, 2020 7:22 AM
To: Peri, Clark A@DOT <clark.peri@dot.ca.gov>
Cc: Phyllis <P.houston1@yahoo.com>; Tony Gmail <tonymader@gmail.com>; SR51 American River Bridge@DOT <SR51.American.River.Bridge@dot.ca.gov>
Subject: Re: American River Bridge Deck Replacement Project

EXTERNAL EMAIL. Links/attachments may not be safe.

Thank you for your email.

I didn't realize there was an article in the Bee as I don't get my news from that source. Tony is very good about keeping us informed and he did post notifications via social media on both Facebook and NextDoor in early November. At that time the due date for response was November 18th (which felt to be a very short comment period). I was expecting that maybe CalTrans would provide notification to those immediately affected (at least on Erlewine) by direct mail. There are folks here in the neighborhood that do not use social media, but who will be affected by the construction.

In any event, I look forward to viewing the video when it is uploaded. Will it address why the bike trail cannot be placed on the other side of the freeway (southbound side). I think that is the biggest concern to the neighbors on Erlewine.

Thank you ~
Carla

Response to Comment 16:

Thank you for your comment. The Sacramento Bee only posted the notice that the draft environmental document was available for viewing, it was not an article.

The video only discusses the need, purpose, scope of work, and project features. It does not discuss the reasons for the bike trail on the northbound side.

We did look at the placing the bike trail on the southbound side of the bridge. The roadway curves toward the south end of the bridge, which creates a cross slope on the bridge itself. When we widen the bridge, that cross slope needs to remain constant to the edge of the bridge deck. On the southbound side, the further we widen the bridge, the lower the edge of the

bridge will go to maintain that cross slope. As that edge of the bridge goes lower, the closer the bridge girders will be to the water in the river. We need to leave sufficient clearance between the high-water level in the river and the bottom of the bridge girders.

If/when we receive funding for the corridor project, the bridge will be widened on the southbound side. Widening it even further to add a bike lane will not meet the clearance needed between the river and the bottom of the girders.

Also, the bike path will be separated from traffic by a concrete barrier with fence on top. As southbound drivers travel through the curve, they need a certain sight distance to see traffic or objects in the roadway. The concrete barrier along the southbound lanes will block the drivers view as they approach and negotiate the curve.

17. Carla DuCray and Phyllis Houston

From: Carla DuCray
To: Peri, Clark A@DOT
Cc: Phyllis; Tony Gmail; SR51 American River Bridge@DOT
Subject: Re: American River Bridge Deck Replacement Project
Date: Tuesday, November 24, 2020 10:51:45 AM

EXTERNAL EMAIL. Links/attachments may not be safe.

Hi Clark ~

Thank you for providing the additional information about the project. It is helpful.

Can you tell me how far in distance the required modification to the existing soundwall will be?

Thanks ~
Carla

Response to Comment 17:

Thank you for your comment. The proposed new location of the soundwall, from the existing Caltrans right-of-way line, will vary from 33 feet near the river levee to 12 feet near the existing billboard.

18. Mary Maret – Senior Natural Resource Specialist, Sac. County Depart. of Regional Parks

From: Maret. Mary <maretm@SacCounty.NET>
Sent: Monday, December 7, 2020 1:22 PM
To: Peri, Clark A@DOT <clark.peri@dot.ca.gov>
Subject: Re: American River Bridge Virtual Public Meeting Video

EXTERNAL EMAIL. Links/attachments may not be safe.

Hi Clark,

Thanks for the video. The video did a good job explaining the importance of the bridge, but no so much on disclosing impacts.

Also: A bit of mis-information? It said a portion of the Cal Expo area would be closed, and showed a map with the entire area shaded blue (closed to the public). A bit of disconnect between "a portion being closed" in the audio, and no portion AT ALL being open on the map. It also said construction would start in Fall of 2020, which would be this month, because fall season ends in late December.

But I have questions - I did read the MND and there was quite a bit in it about bridge pilings and coffer dams: Will boating be permitted under the bridge during construction? If yes, Will there be an impact to boating?

Thank you,

Mary Maret

Response to Comment 18:

Thank you for your comment. Caltrans will be working with the US Coast Guard to discuss any impact to boating. We assume there will be some impacts, but we will minimize those as much as possible. We believe we will still need to allow for boat traffic, but they can be routed around sections of the in-water construction.

To clarify the Cal Expo location, there are sections of the parking lot that could potentially be used as a staging area for the construction contractor. This would require an agreement with Cal Expo. The environmental document cleared these areas in case the contractor chooses to use them.

Regarding the area within the American River Parkway, between the north levee and the river (area shaded in blue), this area will have limited access to the public during construction. Most of the paved bike trail will remain open. Only the portion that runs underneath the American River Bridge would temporarily be closed during construction. This is a safety concern as Caltrans does not want bicycle or pedestrian traffic crossing under the bridge while it is under construction. Even though that portion of the bike trail will be closed, signs will be placed directing the bikers and pedestrians to the top of the levee. There is also a dirt road that runs from the Ethan Way entrance to the American River Bridge, south of Bushy Lake, and the paved path in this area, that will be closed to bike and pedestrian traffic. Construction is scheduled to begin in Fall 2022.

19. Debby Reath & Linda Guadagno

From: Debby Reath
To: SR51 American River Bridge@DOT
Subject: Cal Trans Public Input
Date: Monday, December 14, 2020 2:35:48 PM

EXTERNAL EMAIL. Links/attachments may not be safe.

We vehemently oppose the bicycle bridge to be constructed underneath the new I-80 construction over the American River. We are bicyclists and we live in River Park. There are adequate bicycle routes from Arden way to the bicycle trails on the American River Parkway and bicycle routes on M Street to access the City. The planned bicycle bridge under I-80 is a waste of taxpayer money, money that is precious at this time during this pandemic and the increased homeless crisis.

Debby Reath & Linda Guadagno
4100 Moddison Ave
Sacramento, CA 95819
Email: Sierralindeb@yahoo.com
cell: (916) 240-2980

Sent from my iPhone

Response to Comment 19:

Thank you for your comment. Early outreach efforts identified the need for an additional bicycle and pedestrian path across the American River. The City of Sacramento confirmed the City's 2014 Programming Guide and August 2016 Bicycle Master Plan identifies the need for an additional north-south bike/pedestrian river crossing between the existing Sacramento Northern Bike Trail and the J Street Bridge.

20. Dr. Jolie Terrazas

From: Jolie Terrazas
To: SR51 American River Bridge@DOT
Subject: Comment
Date: Tuesday, December 15, 2020 8:49:39 PM

EXTERNAL EMAIL. Links/attachments may not be safe.

Hello,

I strongly urge CalTrans to adopt the build plan which includes the least amount of widening and is the least expensive (alternative 1 as shown in your public video):

| Alternative 1: Minimum Widening | $176,300,000
| Alternative 2 | $195,800,000
| Alternative 3 | $210,700,000

Given the climate crisis, we should not plan for increased vehicle miles traveled and greenhouse gas emissions.

Best,

Jolie M.B. Terrazas, Ph.D.
Industrial and Organizational Psychology

My community is located on the ancestral land of the Nisenan, Southern Maidu, Valley Miwok, and Me-wuk First Nations.

Learn more about the call to acknowledge and honor Native American members of your community and their land, and important issues such as #MMIWG2S.

Response to Comment 20:

Thank you for your comment. Alternative 1 has been selected as the preferred alternative. The widening is necessary to facilitate construction, provide a safe work area for the contractor, maintain traffic flow during construction and to accommodate bike and pedestrian travel. No additional lanes will be added with this project. Therefore, the technical studies prepared for the environmental document determined that there are no significant impacts to GHG, VMT, or climate change.

21. Liz Bellas – Director, Sacramento County Department of Regional Parks

Regional Parks
Liz Bellas, Director

Divisions
Administration
Golf
Maintenance
Rangers
Recreation Services

County of Sacramento

Acting County Executive
Ann Edwards

December 16, 2020

CalTrans
Email: SR51.American.River.Bridge@dot.ca.gov

RE: County of Sacramento Department of Regional Parks Comments on the Initial Study with Proposed Mitigated Negative Declaration for the American River Bridge Deck Replacement

To Whom It May Concern:

Thank you for providing Sacramento County Department of Regional Parks (Regional Parks) the opportunity to provide comments on the proposed project's Initial Study with Proposed Mitigated Negative Declaration. Our comments pertain to public outreach, our preference for on-site mitigation, and our disagreement and suggestions on the "de minimis" impact on the American River Parkway, in Appendix A, section 4(f).

Public Outreach:

- The public should be adequately informed about project impacts and have the opportunity to ask questions about this project. The YouTube video, intended as a substitute for a public meeting, should be a supplement, and not a substitute for a public meeting.

- The project should provide public outreach to the Parkway users, stakeholders, and to the surrounding community through press releases, public meetings, social media, and other public outreach.

- Regional Parks policies dictate that trail closures require a 14 day advance notice to trail users, via signage at the detour locations.

- During construction, the project should provide signage describing the project, alongside the signage for closure and detours, to communicate

10361 Rockingham Drive, Suite 100, Sacramento, CA 95827
916-875-6961 | www.RegionalParks.SacCounty.net

to Parkway users, what is happening in the area. This signage should include contact information for the public.

- Regional Parks appreciates the coordination with the US Army Corps of Engineers' river bank project to mitigate cumulative project impacts to the community and to community services.

Mitigation:

- Regional Parks requests that damage and loss to the natural resources be mitigated on the American River Parkway and that the use of purchased credits and in lieu fees be minimized. The American River Parkway Plan's Policy 3.1 states that any bridge developments within the Parkway, shall be designed and located such that any impact upon native vegetation is minimized and appropriate mitigation measures are incorporated into the project to provide mitigation and enhancements to the parkway's natural, recreational, or interpretive resources. The goal is to replace, repair, or restore adversely impacted resources as close as feasible in time and place to the impact. Thus "in lieu" and mitigation bank fees do not meet these standards.

- Regional Parks appreciates that Caltrans will be working to create a cooperative agreement with the Sacramento Water Forum to fund the ongoing Salmonid Habitat Restoration Project to mitigate Project-related loss of riparian habitat and impacts to steelhead, Chinook salmon, and green sturgeon habitats.

- Regional Parks requests that impacts to jurisdictional waters and wetlands, and riparian impacts, be mitigated through cooperative agreements with the CSUS Bushy Lake Restoration Project and the Steelhead Creek Restoration Project Plan, in partnership with the Valley Foothill Watershed Collaborative. Both the Bushy Lake project and the Steelhead Creek Restoration Project are located close to CalTrans' project impacts.

- Regional Parks requests that Caltrans coordinate project impacts and mitigation with our Natural Resource Management Planning efforts. Contact for coordination is Mary Maret, at (916) 875-4918 or maretm@saccounty.net.

Section 4(f) Study:

The Document states that the public will have from June 10, 2020 to July 9, 2020 to comment on Caltrans' intent to make a de minimis impact finding. Clearly the public has not been made aware of the 4(f) study over the summer, and we think the dates listed were in error. Regional Parks has not

yet commented on this document, before it was made available to us in November 2020, but we wish to comment with this letter.

A "de minimus" impact finding would mean the project would use the least amount of park property for the proposed project. The map in the draft 4f has the entire 408 acre Cal Expo portion of the Parkway closed to the public (blue shading is "Area to be closed to the public during public construction activities.") As your document indicates, this area of the Parkway is popular for nature viewing, bicycling, equestrian use, picnicking, and informal access to the river, all of which would be unnecessarily closed for this project.

In the spirit of a "de minimis imact", we request the following changes to the Section 4(f) Study:

- Paved trails, equestrian/hiking trails and/or maintenance roads be made available to the public during times when it is safe and feasible to do so.

- Signage, detours and flagpersons should all be used as necessary to allow for the public to use non-construction areas.

- At maximum, trail closures be limited to the areas outlined in the Environmental Study Limits Map (Figure 5), and not to the entire 408 acre Cal Expo portion of the Parkway.

- Detour signage should be messaged so that the public is aware that the trail will be closed at the bridge but are still able to enter the park. For example: "Trail Closed Ahead for Bridge Project. Detour to Levee." This signage would warn "through traffic" that there is a closure ahead, but would allow park users to travel into the area to fish on the river, bird watch, visit Bushy Lake, etc. in the non-construction area of the Cal Expo portion of the Parkway.

We appreciate the opportunity to comment. If you have any questions please contact Mary Maret at (916) 875-4918 or maretm@saccounty.net.

Cordially,

Liz Bellas

Liz Bellas

cc: Rick Pickering, CEO Cal Expo

Response to Comment 21:

Thank you for your comment.

Public Outreach:
Caltrans takes safety and public health seriously and adheres to the CDC guidelines with regard to Covid. Accordingly, we are not conducting in-person public meetings and have fully utilized alternate methods to provide project information. As project design progresses, Caltrans intends to keep the public informed and up to date on the project, including impacts to the parkway during construction. Appropriate methods of communications to the public will also be used during construction and have been included in the Section 4(f) Study. The project will provide signage describing the project, alongside the signage for closure and detours, to communicate to Parkway users, what is happening in the area. This signage will include contact information for the public. This signage will warn “through traffic” that there is a closure ahead, but allow park users to access the non-construction areas of the Parkway.

Mitigation:
Caltrans is working with the appropriate resource agencies to determine appropriate mitigation.

Section 4(f):
The public comment period was from October 20, 2020 through December 18, 2020 regarding Caltrans’ intent to make a *de minimis* impact finding. The June 10, 2020 through July 9, 2020 dates were incorrect. Your recommendations have been incorporated into the 4(f) study.

22. William Shunk – Senior Engineer, City of Sacramento Department of Public Works

City of SACRAMENTO
Department of Public Works

Engineering Services Division
915 I Street, RM 2000
Sacramento, CA 95814
Phone: 916-808-8300

December 17th, 2020

Sandeep (Sunny) Sandhu
Associate Environmental Coordinator
Caltrans, North Region
703 B Street
Marysville, CA 95901

American River Bridge Draft Environmental Document Comments

Dear Mr. Sandhu,

Thank you for the opportunity to comment on the American River Bridge Draft Environmental Document (EA 03-3F070, EFIS 0312000054). After reviewing the document, the City of Sacramento has the following comments:

1) There is an existing flood gate on State Route 51 at PM 1.86 that will be impacted with Caltrans' Capitol City Corridor Project. The City's Department of Utilities has evaluated two alternatives to replace the gate if it is removed as part of the project. Alternative 1 would relocate the floodgate to the Elvas Underpass (Bridge 24-0031). Alternative 2 would place embankment between the American River levee and the secondary levee to contain the flood inundation if the American River primary levee failed. Both alternatives are shown in the attached excerpt from the levee evaluation. It is imperative that the American River Bridge Deck Replacement project not preclude the construction of either alternative. Furthermore, the City of Sacramento is interested in executing a cooperative agreement with Caltrans to coordinate this effort with both the American River Bridge Deck Replacement project and Capitol City Corridor project.

2) The City of Sacramento is currently designing the second phase of the Two Rivers Trail project which runs underneath State Route 51. The following comments are specific to the interaction between the bridge project and the City's Two Rivers Trail project:

    a. The location of the trail shown in preliminary plans is different than that shown in the City's plans. The City's trail design ramps up to the top of the levee earlier than the Caltrans plan. This should be coordinated between the two projects to avoid rework.

    b. There is a detour indicated for the American River Parkway north of the river, but no detour indicated for the Two Rivers Trail to the south of the river. Will the trail be closed with construction? If so, a detour should be indicated.

    c. Figure 5 appears to indicate material haul routes within the environmental study limits. Please confirm that these routes are on top of the levee to avoid as much wear and tear on the trail as possible.

The City of Sacramento is looking forward to a continued partnership with Caltrans to ensure the successful implementation of our collective projects on the State Route 51 corridor. Please feel free to contact me if you need any clarification on the comments provided above.

Sincerely,

William Shunk
Senior Engineer
City of Sacramento Department of Public Works
wshunk@cityofsacramento.org
(916) 808-2986

Attachments: Proposed Alternatives from the Secondary Levee Evaluation

CC: Clark Peri, Caltrans District 3 Project Manager
Ryan Moore, City of Sacramento Public Works Director
Adam Randolph, City of Sacramento Senior Engineer
Greg Smith, City of Sacramento Senior Engineer

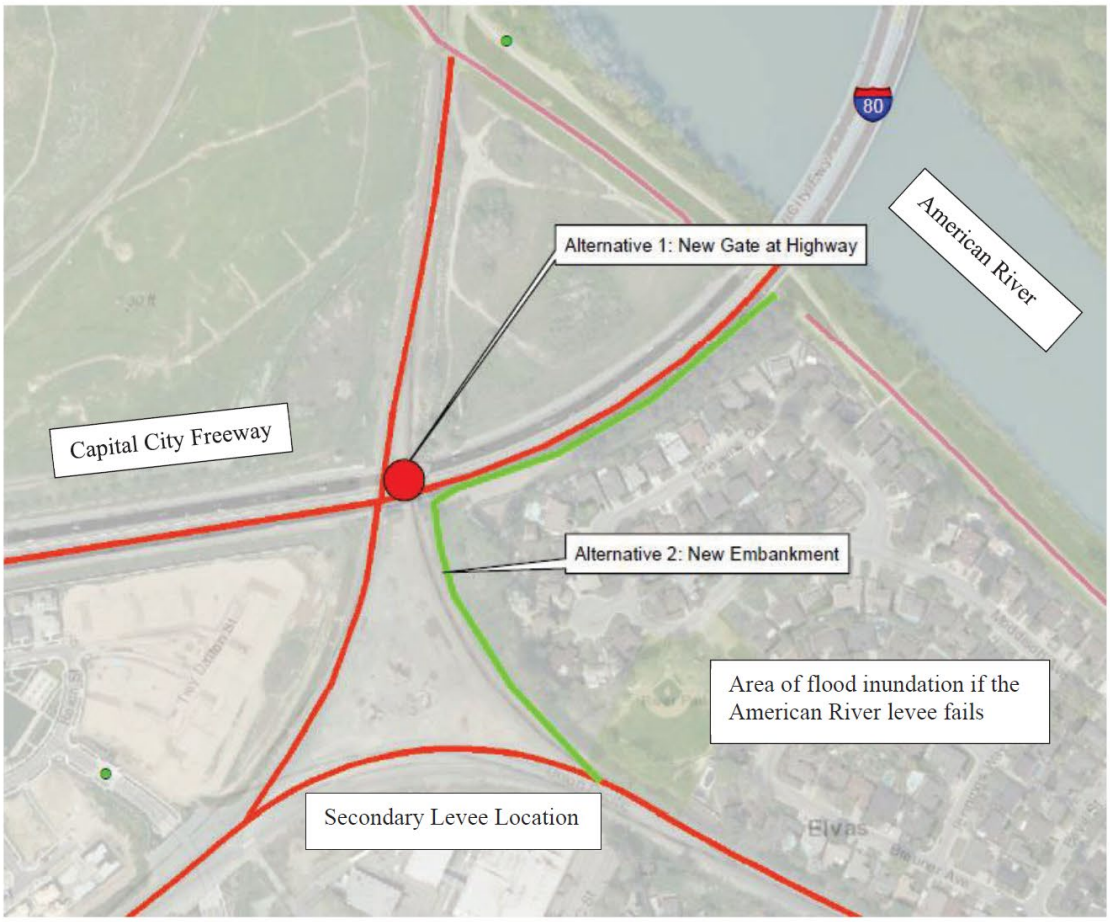

Figure 5.1: Proposed Cal-Trans Alternatives

Response to Comment 22:

Thank you for your comment. Caltrans is currently in communication and discussion with the City of Sacramento to discuss floodgate options. Caltrans will continue to communicate with the City as we move forward with this project.

The trail (on the south side of the bridge) will continue to ramp up to the top of levee from below the structure on both sides of the structure, this connection is not intended to be removed. However, conforming from the edge of deck of the bridge to the top of levee is intended on the southern side of the bridge. Coordination with City Agencies and their consultants have been done and will continue to be done moving forward.

Two Rivers Trail at the south end of the river will be closed during construction of the abutment and any work within the vicinity. Once the work is out of the general vicinity, it can be open for public use again. Keeping impact to the park for public uses will be minimized as much as possible.

Staging vehicle routes are still being studied and considered. The intent of this route is both for ingress and egress onto the construction site. It is intended to go on the trails as opposed to on top of the levee.

23. Stephen Green – President, Save the American River Association

Save the American River Association

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December 18, 2020 **Email transmittal**: Sandeep.sandhu@dot.ca.gov

Sandeep Sandhu, Project Coordinator and Document Preparer
Environmental Management M5 Branch
California Department of Transportation (Caltrans)
703 B Street
Marysville, CA 95901

Subject: American River Bridge Deck Replacement Project, 03-Sac-51, PM 2.0-3.5 Comments on the IS-Draft MND

Dear Mr. Sandhu:

Save the American River Association (SARA) appreciates the opportunity to comment on the above subject. SARA was founded in 1961 to establish the American River Parkway and has remained since that time as lead advocate for the preservation and conservation of the lower American River and Parkway.

The *American River Parkway Plan 2008* (Plan) is the document guiding any land use decisions affecting the American River Parkway. The Plan is state law, California Public Resources Code 5842, and also acts as the management plan for the federal and state *Wild and Scenic Rivers Acts*, as described in Chapter 4 of the Plan. Any actions regarding land use in the American River Parkway must also be consistent with Assembly Bill No. 889, *The Bushy Lake Preservation Act*, as applicable.

Comments for consistency with the *American River Parkway Plan 2008* and *The Bushy Lake Preservation Act*:

"BRIDGE CROSSINGS OF THE AMERICAN RIVER PARKWAY
…The policies of the Plan are intended to provide guidance for careful and thorough consideration of the Parkway's natural and aesthetic resources when evaluating proposed expansions to existing crossings or new crossings of the river." (*Plan, Chapter 8, page 133*)

"AUTOMOBILE BRIDGES
...Each automobile crossing degrades the aesthetic and cultural values of the Parkway, and adversely impacts the recreational user who experiences the effects

of the bridge for some distance on either side. Adverse impacts include noise, visual and light intrusion, pollution, removal and damage of vegetation, degradation of wildlife habitat, and indiscriminate access…" (*Plan, Chapter 8, page 134*)

"**Bridges**
8.19 Bridge crossings should incorporate river themes and the Parkway context into its design and use muted, earth tone colors." (*Plan, Chapter 2, page 34*)

The proposed modifications to the bridge do not relate well to the American River and Parkway. Consideration should be given to enhancing the aesthetics and views of the bridge, to the extent feasible, from both the highway (vehicular/bicyclist/pedestrian) and the river (paddler/hiker/fisherman/bicyclist). This consideration should extend to signage. Please see attachment, "*Making Concrete Bridges Beautiful*".

The Plan is emphatic in the value placed on the many and varied aesthetics of the lower American River and Parkway. The IS/MND inaccurately describes this bridge deck replacement, and future bridge widening across the American River as only an element of a highway corridor that is not even listed as a state scenic highway. This comment, and like ones, dismiss the importance of "the unique intrinsic qualities that define the Parkway experience and stimulate the senses of those who use the Parkway…" (*Plan, Chapter 3, page 77*)

Of note, is the fact that, although the current project does not increase capacity, "There is another proposed project (*Caltrans EA 03-OH931, 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." (*Project Location and History, page 1*)

The Project Location/History goes on to state that should the above be funded in the future, "additional environmental studies will be conducted, and a separate environmental document will be prepared." The bridge should not be built for future widening that would increase capacity without an analysis of how an increase in visual intrusion, noise and emissions from more vehicle traffic would further impact the aesthetics of the River and Parkway. Noise impacts, for instance, from the SR 51 bridge and adjacent roadways already degrade, to a large extent, the public's peaceful enjoyment of the River and Parkway.

Construction impacts from the American River Bridge Deck Replacement project will be mitigated with re-vegetation of, where feasible, appropriate native plants. Without knowing the construction impacts from a future bridge widening, how can we determine the potential of previously re-vegetated Parkway land being re-impacted?

Alternative 2 involves widening the substructure on the west side (SB) of the bridge as well as on the east side (NB) without building the deck on the west side. Alternative 3 would construct a new deck over the entire 190 width. While Caltrans may legitimately make the claim that widening the bridge in Alternative 1 would make the deck replacement "easier", it cannot claim the same for further widenings in Alternatives 2 and 3. The deck replacement project will have both temporary and

permanent significant impacts to the lower American River and Parkway. The least impactful alternative must be the preferred alternative.

"3.0 RESOURCES OF THE PARKWAY

Terrestrial Resource Policies

3.1 Any development of facilities within the Parkway, including but not limited to buildings, roads, turfed areas, trails, bridges, tunnels, pipelines, overhead electrical lines, levees and parking areas, shall be designed and located such that any impact upon native vegetation is minimized and appropriate mitigation measures are incorporated into the project.

3.1.2 Development of non-Parkway facilities must have a compelling regional need, meet all applicable statutory requirements and provide mitigation and enhancements to the Parkway's natural, recreational, or interperative resources." (*Plan, Chapter 2, page 16*)

The Biological Resources evaluation is missing the mention of bats. There is no discussion regarding the history of bats at or near the bridge, even living, potentially, in crevices beneath the bridge. Is there a potential to improve or create bat habitat with the deck replacement improvement project? Caltrans' bridges across the state are important habitats for bats.

The Biological Resources evaluation did not mention the Western Pond Turtle. Based on a look at Google Earth images of the project's sphere of impacts, there are logs and woody material near the NW and SW river banks. It is reasonable to assume that the Western Pond Turtle is present, and appropriate avoidance steps must be taken. As this turtle is a sensitive species, its presence may result in specific permit requirements by way of a 1602 Lake and Streambed Alteration Agreement and 404 permit.

Surveys may need to be done at sunrise and sunset for river otters, beavers and muskrats to determine IF they occur, and if so, where they den in the area during their inactive periods and reproduction, to determine proximity to the project site, and whether they would be disturbed by the pile-driving work and in-river work. Multiple surveys will determine no presence and/or denning sites. Based on these surveys, the Streambed Alteration Agreement and 404 permit may direct further requirements.

The bicycle and pedestrian path lighting needs to be described and evaluated for potential impacts to the natural resources. Intrusive light in the urban environment disrupts the natural behaviors of fish and wildlife. Just as noise disrupts the ability of fish and wildlife to carry out necessary activities, so too can light. Please refer to attachment: *International Dark Sky Association, Light Pollution Effects on Wildlife and Ecosystems*, as a reference.

The proposal to consider an access road over top of the levee leading to a temporary road consisting of fill, SPANNING A FRESHWATER EMERGENT WETLAND, must not be considered until a

specific study of the freshwater emergent wetland is completed. Potential impacts from a temporary road might include the following: Compacted soil that no longer drains well and, depending on the soil type, could possibly turn to hard pan. If tire ruts from construction equipment happen, then, depending on how deep they go, the flow of water through and in the wetland could be changed. Erosion and siltation from breaking down the banks can occur. Road dirt, construction equipment emissions, and toxic tire chemicals will pollute the water. Its possible non-native seeds could be introduced to the wetland and areas along the route. Plants will be crushed. Wildlife living in and around the wetland will be evicted and forced to find, if possible, a substitute habitat, including food sources. Do we even know what species occur here? Caltrans needs to find out or disclose what species of organisms, plants, and wildlife use this freshwater emergent wetland. Also, please confirm the size of the wetland. Pictures show a larger and more substantial wetland than the project depiction, we think.

Section 4 ***Affected Environment, Environmental Consequences, and Mitigation Measures***

"THE PARKWAY GOALS AND CONCEPT

CONCEPT POLICIES

The first set of policies sets forth the guiding concepts for management within the Parkway and the relationship of the surrounding region to the Parkway. These concept policies include:

1.3 ***Resource Protection***

Limitation on use of the Parkway through design and management tools to prevent overuse of the Parkway and preserve the environmental quality, thereby insuring the integrity of the Parkway for future users.

1.5 ***Cooperation***

Coordination and cooperation in Parkway planning and management is essential, especially recognizing the many important roles of jurisdictions and agencies with regulatory responsibilities within the Parkway." (*Plan, Chapter 1, page 10-11*)

To preserve the environmental quality of the Parkway, insuring the integrity of the Parkway for future users, and in recognition of the importance of coordination and cooperation in Parkway planning and management between the jurisdictions and agencies with regulatory responsibilities within the Parkway to achieve this preservation and integrity, the proposed mitigation for biological impacts, to the maximum extent possible, must be planned within the Parkway. The Sacramento County Regional Parks Department has identified appropriate mitigation areas within the Parkway as part of the *Natural Resources Management Plan* currently underway.

SECTION 4, *Page 48.*

" 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 under the auspices of the Water Forum. If this is

infeasible, Caltrans will pursue purchasing mitigation credits at an approved mitigation bank."

COMMENT:
The *Salmonid Habitat Restoration Project* implemented by the Water Forum augments gravel on the lower American River to address fisheries' impacts. Consequently it would be more appropriate to establish an agreement with the Water Forum to fund a riparian restoration project creating 5.21 acres in the Parkway. The Water Forum has experience designing, installing, managing and monitoring a restoration project within the Parkway (*Cordova Creek Restoration Project*). If this partnership is infeasible, then Caltrans should coordinate with Sacramento County to implement a habitat restoration project on the Parkway to restore 5.21 acres of riparian habitat.

DIRECT EFFECTS TO VELB, *Page 61*
"Exit holes were identified in approximately 8% of elderberry shrubs within the project area."

COMMENT:
What is typical? The reason for including this statistic is unclear.

SECTION 4, *Page 64-65*
"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."

COMMENT:
There needs to be a plan for post-restoration monitoring for survival of the VELB and their habitat, as well as a replacement plan.

"Erosion Control and Re-vegetation – Erosion control will be implemented and the affected area will be re-vegetated where feasible with appropriate native plants."

"Any damage done to the buffered area will be restored, including re-vegetation with appropriate native plants."

COMMENT:
Who will determine what "appropriate native plants" are planted? Hopefully the native plants are selected with a goal in mind such as improving the ecological lift of a wildlife corridor, etc. What is the plan for replacement and weed management until the native plants are established? If re-vegetating with appropriate native plants is not feasible, what erosion control remedy is anticipated?

To help account for visual estimation error during work where accidental damage might occur to the 500' buffered area, it might be advisable to consider enlarging the fenced area by 5% (25 feet). Workers will, of course, see the boundary area and make every effort to avoid it, but more importantly, miscalculations would have 25 feet of "play".

"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."

COMMENT:
It is unclear how this VELB mitigation relates to the proposal (Page 71) to mitigate for VELB impacts through purchase of mitigation credits. Transplanting of any elderberry shrubs must occur within the Parkway. The Parkway includes Critical Habitat for VELB that should be augmented and expanded. The U.S. Army Corps of Engineers is proposing to mitigate for VELB impacts on the Parkway as part of the *American River Watershed Common Features Project* (Contract 1) with implementation in 2021. The Army Corps of Engineers mitigation includes transplanting of elderberry shrubs within the Parkway.

SECTION 4, *Page 71*
"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 as 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."

COMMENT:
VELB impacts must be mitigated within the Parkway. It is not appropriate to address local VELB impacts in another region, when there are appropriate mitigation sites within the Parkway. The Parkway already includes Critical Habitat for VELB that should be augmented and expanded. The U.S. Army Corps of Engineers is proposing to mitigate VELB impacts on the Parkway as part of the *American River Watershed Common Features Project* (Contract 1) with implementation in 2021.

Using the U.S. Fish and Wildlife Service's 2017 Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (*Section 4, page 64*) as a guide, the mitigation planting and transplanting of Elderberry shrubs must include the palette of trees, shrubs, perennials and forbs growing with the Valley Elderberry Longhorn Beetle's host plant. Re-establishing VELB habitat in the American River Parkway is not about planting elderberry forests. Potential mitigation sites for the impacts to VELB habitat might be to take a look at existing VELB habitat sites and determining if they could benefit from expanded habitat plantings and/or weed management. If this is not already happening at Critical Habitat for VELB sites in the Parkway, could the required mitigation for VELB impacts fund ongoing scientific studies of existing VELB habitat in the Parkway for determinants leading to the success or failure of beetle populations and ancillary benefits to other wildlife, plants, and their habitats?

Impact Minimization, *Page 68*

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

COMMENT:
What immediate steps would be taken should a spill occur?

DISCUSSION OF ESSENTIAL FISH HABITAT, *Pages 72-76*

COMMENT:
As stated in the conclusion of the discussion, the IS-Draft MND has not satisfactorily resolved the mitigation for the permanent loss of 0.33 acres of habitat for federally listed salmonids, and the permanent removal of 3.83 acres of riparian vegetation as it directly relates to Chinook salmon found in the mainstream of the American River during migration to upper reaches.

The impacts to EFH were not similarly presented as the "credits" for the VELB (pages 60-63). The IS-Draft MND should analyze in more detail the permanent removal of 3.83 acres of riparian vegetation, including the approximately 1 acre of shaded riverine aquatic cover, in order to better determine the amount of compensation and/or mitigation credits. For instance, according to the USFWS, the approximately 1 acre of shaded riverine aquatic cover is considered a Resource Category 1 (irreplaceable), and cannot be referred to or valued as a "small" amount. It would reasonably be given a much higher value than for 1 acre of a lesser category. A mitigation credit of 2.5:1 should at least be considered for 3.83 of lost riparian vegetation, including the 1 acre of shaded riverine aquatic cover within the project impact area.

Does the Water Forum's *Salmonid Habitat Restoration Project* have anything planned for the area of the river affected by the Caltrans construction project? Is it particularly important to mitigate for these permanent losses in as close to the same area as possible where they occurred? How critical is it for the migrating Chinook salmon to find suitable in stream conditions as well as riparian vegetation all along their migration? In other words, the equivalent of an intact wildlife corridor?

Before Caltrans pursues mitigation credits at an approved NMFS mitigation bank, the agency must exhaust every option on the lower American River to compensate for the permanent losses of habitat for federally listed salmoninds and the permanent removal of 3.83 acres of riparian vegetation as it directly relates to Chinook salmon found in the mainstream of the American River during migration to upper reaches. The Army Corps of Engineers is currently planning and implementing levee projects on the lower American River (*Watershed Common Features Project*). In the interest of agency cooperation, as outlined in the previously cited Plan's Concept Policy 1.5, can Caltrans find an opportunity to consult and collaborate with the Corps to improve instream conditions for the Chinook salmon in all of their life stages?

SARA greatly appreciates the time and effort that went into preparing the subject IS-Draft MND. We look forward to working with Caltrans to ensure an American River Bridge Deck Replacement Project that will bring positive benefits to the lower American River and Parkway.

Sincerely,

Stephen Green, President
Save the American River Association

Cc: SARA Board of Directors
Dan Meier, *CNPS, Sacramento Chapter*
Dale Steele, *Friends of Sutter's Landing*
Ralph Propper, President, *Environmental Council of Sacramento*
John Deeter, Transportation Chair, *Environmental Council of Sacramento*
Liz Bellas, Director, *Sacramento County Regional Parks*

Attachment:
SUPPLEMENTAL COMMENTS, *The American River Bridge Deck Replacement Project IS-Draft MND*

Attachment:
SUPPLEMENTAL COMMENTS
The American River Bridge Deck Replacement Project IS-Draft MND

Caltrans include several alternatives that are more than bridge deck replacement and linked to a possible future capacity increasing project that isn't funded. By widening this project now they increase the likelihood the future project will be funded. They also trigger impacts beyond what would be required by bridge deck replacement. When the two linked projects are considered the appropriate environmental document is an EIR/EIS, not an MND.

"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 O3 and PM2.5 standards and a maintenance area for a national PM10 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."

Widening the project permanently will increase the likelihood that funding will be provided for the ultimate expansion of the freeway within the project limits. As such, both project should be addressed now which changes air quality impacts in this nonattainment area. When the two linked projects are considered the appropriate environmental document is an EIR/EIS, not an MND.

"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."

The project only includes standard boilerplate measures for addressing climate change. Widening the project permanently will increase the likelihood that funding will be provided for the ultimate expansion of the freeway within the project limits. As such, both project should be addressed now which changes VMT volume and GHG emission. When the two linked projects are considered the appropriate environmental document is an EIR/EIS, not an MND.

"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."

The American River Parkway is a major natural and recreation resource in the region. There are millions of public visits to the Parkway annually. Eliminating access to a large area of these resources during the life of the project is a considerable impact. Simply providing a detour around the area is not mitigation and this project should not be considered "de minimis". It is unclear how the Section 4(F) Study was able to reach this finding.

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), Western 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.

All impacts to fish and wildlife habitat and species must be mitigated within the American River Parkway in suitable locations as identified in the NRMP. Was temporary or permanent water temperature change as a result of this project considered? Caltrans determined that despite avoidance and minimization measures incorporated into the project, the proposed action is likely to adversely affect Essential Fish Habitat for Chinook salmon. Was this impact broken down by alternative and was an alternative identified that did not result in adverse affect?

SWHA are known to have nested in the immediate Woodlake area of the Parkway in the last decade. This species regularly forages in the open areas along the Parkway in this vicinity. This has been documented by local Audubon, ARNHA and FORB surveys. This project would impact suitable foraging and nesting habitat for a state listed species. Other listed species including Bank Swallow, Yellow-billed Cuckoo should have been addressed in the biological survey for this project.

Attachment 1:

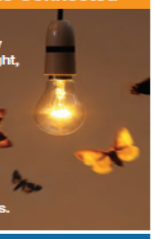
Life on Earth Needs the Natural Rhythm of Light and Dark

For billions of years, life has evolved with Earth's predictable rhythm of light and dark controlled by the length of the day. In fact, it's encoded in the DNA of all plants and animals. Unfortunately, humans have radically disrupted this cycle by lighting up the night.

It used to be that when the sun went down, celestial sources like the moon, stars, planets and Milky Way lit the sky. Life learned to operate under the glow of the night sky. For many animals, a natural night sky signals when to eat, sleep, hunt, migrate and even when to reproduce. It is estimated that half of all life on earth start their "daily" activities at sundown.

"Near cities, cloudy skies are now hundreds, or even thousands of times brighter than they were 200 years ago. We are only beginning to learn what a drastic effect this has had on nocturnal ecology."
— Christopher Kyba, light pollution research scientist

Ecosystems: Everything is Connected



Light pollution can affect entire ecosystems. For example, many insects are naturally drawn to light, but artificial light can create a fatal attraction. Declining insect populations negatively impact all species that rely on insects for food or pollination. Some predators exploit this attraction to their advantage, affecting food webs in unanticipated ways.

About IDA

The International Dark Sky Association, a 501(c)(3) nonprofit organization based in Tucson, Ariz., is dedicated to preserving the natural nighttime environment by educating policymakers and the public about night sky conservation and promoting eco-friendly outdoor lighting.

Our Mission
To preserve and protect the nightime environment and our heritage of dark skies through environmentally responsible outdoor lighting.

Our Goals
- Advocate for the protection of the night sky
- Educate the public and policymakers about night sky conservation
- Promote environmentally responsible outdoor lighting
- Empower the public with tools and resources to help bring back the night

International Dark-Sky Association
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Light Pollution Can Harm Wildlife

ida INTERNATIONAL DARK-SKY ASSOCIATION
www.darksky.org

Artificial Lights Disrupt the World's Ecosystems

Plants and animals depend on Earth's daily cycle of light and dark to govern life-sustaining behaviors such as reproduction, nourishment, sleep and protection from predators. Scientific evidence suggests that artificial light at night has negative and deadly effects on many creatures, including amphibians, birds, mammals, invertebrates and plants.

Coral

More than 130 different species of coral on the Great Barrier Reef spawn new life by moonlight. Bright urban lights can mask the moon's phases, throwing the corals' biological clocks out of sync.

Frogs and Toads

Glare from artificial lights can impact wetland habitats that are home to amphibians, such as frogs and toads, whose nighttime croaking is part of the breeding ritual. Artificial lights disrupt this nocturnal activity, interfering with reproduction, which reduces populations.

Sea Turtles

Sea turtles live in the ocean but hatch at night on the beach. Hatchlings find the sea by detecting the bright horizon over the ocean. Artificial lights draw them away from the ocean. In Florida alone, millions of hatchlings die this way every year.

Birds

Birds that migrate or hunt at night navigate by moonlight and starlight. Artificial lights can cause them to wander off course towards dangerous nighttime landscapes of cities. Every year millions of birds die colliding with needlessly illuminated buildings and towers.

Other Wildlife Harmed by Light Pollution

We are only just beginning to understand the negative effects of artificial light at night on wildlife. Every year new research adds even more wildlife to the list of animals affected by too much light, including:

- Hummingbirds
- Wallabies
- "Little" penguins
- Zebrafish
- Sweat bees
- Seabirds
- Monarch butterflies
- Atlantic salmon
- Zooplankton
- European perch
- Songbirds
- Peahens
- Bats
- Owls
- Mice
- Insects
- Geckos
- Fireflies

Solutions

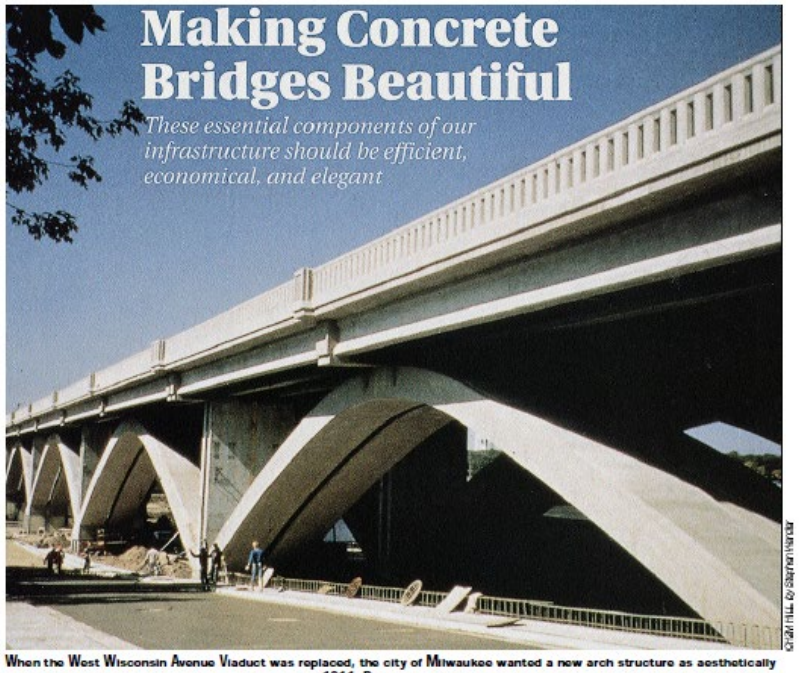
- Use only fully shielded, dark sky friendly fixtures for all outdoor lighting, so lights shine down, not up.
- Use only the right amount of light needed. Too much light is wasteful, harms wildlife and creates glare.
- Install timers and dimmer switches and turn off lights when not in use. If you must have security lighting, use motion sensors.
- Turn off lights in office buildings and homes when not in use.
- Use only lighting with a color temperature of 3000K and below. This means that there is less blue (cool) light that is more harmful to many animal species.
- Work with your neighbors and local governments to ensure outdoor lighting isn't harming the wildlife in your area.

Visit darksky.org and join IDA for resources and more information.

Attachment 2:

Making Concrete Bridges Beautiful

These essential components of our infrastructure should be efficient, economical, and elegant



Milwaukee Bridge & Trusses

When the West Wisconsin Avenue Viaduct was replaced, the city of Milwaukee wanted a new arch structure as aesthetically impressive as the one that had been in place since 1911. Designers used both precast and cast-in-place concrete with post-tensioning to produce an 11-span, low-maintenance structure that economically met the aesthetic criteria.

By M. K. Hurd

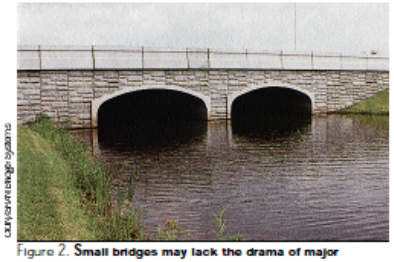
"A weak bridge is admittedly more dangerous than an ugly one, but to seek strength at the lowest cost with no regard for appearance is only one degree worse than it would be to attempt a beautiful design without thought of stability."

This concern voiced by the late C. S. Whitney, a distinguished engineer and designer of concrete structures, expresses the sentiment of leading engineers throughout the world (Ref. 1). The problem is all the more immediate, perhaps, because engineering education focuses on technical and functional aspects of design with little attention to the visual impact of structures on the people who live with them day to day.

"Bridges, those necessary connections designed to carry people, vehicles, and material over both man-made and natural barriers, exist by the hundreds of thousands in the United States. Most of us transverse them many times a day. Few take notice—but perhaps we should look a little closer," wrote Richard Weingardt in *Concrete Construction* a few years ago (Ref. 2). "Bridges are among the most visible and important pieces of engineered construction in our environment," he continues. "They are essential components of our public works foundations, our infrastructure."

Are There Rules for Bridge Aesthetics?

Although many architects and engineers reject the notion of rules for aesthetics, Fritz Leonhardt, after



Duty/Spirit Bridge Systems

Figure 2. Small bridges may lack the drama of major structures, but they can make an important aesthetic statement when carefully detailed. The precast arch boxes of this bridge in Jacksonville, Fla., have a span of 24 feet and a rise of 10 feet. The crisp line of the arch is complemented by the ashlar stone pattern of precast headwall sections that are tied back into earth fill over the arches. Precast safety railings supported atop the headwall are proportioned to further enhance the overall effect.

al findings tell us how people tend to view bridges:

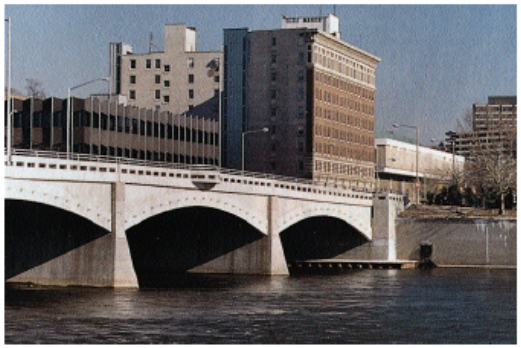
- The ability to evoke visual pleasure is the main desirable aesthetic attribute of a bridge, but a pleasing site improves overall appearance. Familiarity with a bridge tends to make it seem more attractive.
- For proper evaluation, a bridge should be viewed from several different angles and distances, with most attention given to the views generally seen.
- Standards of beauty change with time, but the arch is generally considered the most pleasing of bridge forms, while the truss is considered least pleasing.
- Men tend to like bridges with simple forms and slender members. Women tend to like sturdy looking bridges with some ornamentation. Older people tend to like traditional kinds of bridges and bridges of historic interest.

Concrete Arch: Best-liked Bridge Form

Long before prestressed concrete technology developed and segmental construction methods became available, concrete arches were used for long bridge spans. Concrete's strength in compression was admirably suited to resist stress induced by gravitational forces in a curved member. Even those untrained in engineering seem to intuitively appreciate that the form of an arch bridge expresses this load-carrying ability. Perhaps this is the reason Zuk found the arch to be the best-liked bridge form.

For economic reasons, arch bridges, whether of reinforced concrete or steel, have become rare for small and medium spans. However, when public preference for arches prevails, arch structures can be built economically using precast segments and post-tensioning. A unique concrete strutted-arch bridge was selected for Milwaukee's new West Wisconsin Avenue Viaduct to maintain the aesthetic appearance of the 1911 ten-span arch viaduct that it replaced. Use of precast concrete components for the main arch and deck girders reduced construction time and the cost of a cast-in-place alternative. All the precast components were joined by cast-in-place concrete closures and post-tensioning.

For smaller bridges, the earth-filled precast arch-box form is available (Figure 2). Other alternatives to satisfy the desire for the arch shape have emerged in the course of restoration or replacement of older earth-filled arches. Post-tensioned, cast-in-place concrete girders were used in Columbus, Ohio, to replace a 70-year-old bridge over the Scioto River. The designers exaggerated the girder haunches to make them resemble the earth-filled arches of the 1921 structure. The 16th Avenue Bridge, Cedar Rapids, Iowa, and the Bridge Street Bridge, Grand Rapids, Mich., (Figure 3) were both recently replaced with structures made of prestressed, precast girders. But in both cases, the appearance of an arch structure was maintained by adding precast concrete fascia panels.



Wilson & Company

Figure 3. Standard precast, prestressed I-beams support the Bridge Street Bridge in Grand Rapids, Mich. By incorporating precast arch-shaped fascia panels, they maintain a semblance of the old arch bridge that was replaced and harmonize with other bridges in the downtown area.

60 years of analyzing structures and studying old books, is convinced that standards for aesthetic qualities of bridges and other structures exist. Internationally known and respected as a distinguished engineer, professor, and bridge designer, Leonhardt lists guidelines for aesthetic qualities (Ref. 3) particularly applicable to bridges. Harbeson, Murray, Gloyd, and others echo Leonhardt's sentiments and advocate many of the same principles as guidelines for bridge designers. Some ideas common among these experts include:

- **Proportion.** Choosing proper proportions establishes harmony and balance among the relative sizes of the various parts of a structure. Consider height, width, and breadth as well as visible voids among the masses. Light and darkness caused by sunlight and shadow must be anticipated because they can profoundly affect a viewer's sense of proportion.
- **Refinement of form.** Taper structural members to avoid the stiff, static look produced by parallel straight lines. Camber long horizontal members slightly to avoid the optical illusion of sagging. Verify the appearance from all possible vantage points. Modern computer graphics techniques enable the designer to do this rapidly and to remove details that cause aesthetic discord.
- **Integration into the environment.** Dimensional relationships and scale must enable a bridge to fit into its environment, whether urban or rural. For example, planners of the Torridge Bridge (Figure 1) rejected the conventional long main span with multiple short approach spans for a river crossing, in favor of a solution that enhanced the lovely landscape.
- **Color and surface texture.** Construction technology today offers designers variety in both color and surface texture of concrete. Surface textures, economical to produce with reusable form liners, should suit the environment and be easy to maintain. Color can be integral to the concrete or applied to the surface. Pigmented sealers, for example, can cover blemishes, brighten dark areas, and protect bridges from graffiti.

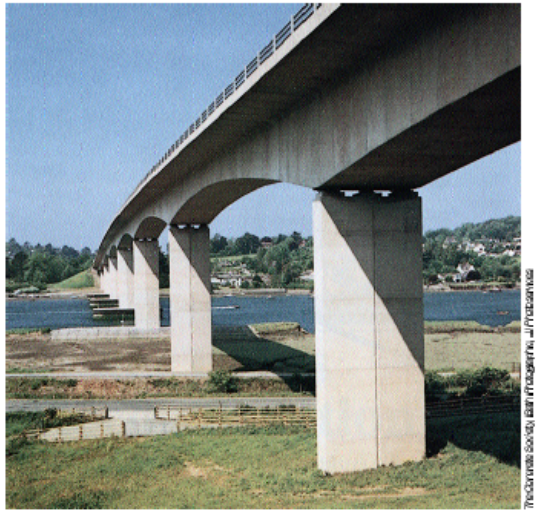
Other important bridge design elements cited include craftsmanship, character, fulfillment of purpose or function, and a sturdy, safe appearance. Several authorities list order and simplicity as desirable attributes.

Arthur Elliott (Ref. 4) describes another building block for creating a beautiful bridge—*future acceptance*, warning against succumbing to temporary fads rather than choosing the most appropriate bridge form. "If you bear in mind that your structure may serve for a hundred or more years, and that aesthetic tastes of those future critics of your work may be markedly different from your own, then you must be certain that you do not use design concepts that are temporary or transient. Make your structure basically pleasing so that its true character will shine through, like the arches of an old abbey."

Quantifying Bridge Aesthetics

William Zuk has taken a more quantitative approach to bridge aesthetics (Ref. 5). After compiling a set of 177 statements, criteria, or rules applicable to girder bridges, he proposed a computer-based system that will use these "rules" to assign an aesthetic rating to a bridge, on a scale of 1 to 10. His rules consider the bridge as a whole, the details of the bridge, and the bridge in relation to its site.

Zuk's study of how people react to bridges and how to measure that reaction goes back to 1970, when he compiled graphical ratings diagrams to survey individual opinion (Ref. 6). Some of Zuk's more gener-



The Concrete Society, Slough (Photographer: W. J. Proctor and Partners)

Figure 1. **To enhance a scenic tidal estuary and flood plain near Bideford in England, designers chose eight approximately equal spans for this 2,132-foot-long structure. Torridge Bridge emerged as an award-winning structure following a design evolution process that lasted more than six years.**

Figure 4. **Will the Sunshine Skyway Bridge become a signature structure for the Tampa Bay area, as predicted by the *St. Petersburg Times*? This cable-stayed concrete box girder bridge is a prime example of the newest technology for long-span bridges, offering economy of construction that frequently supplants older bridge types. The great variety of possible cable and pylon tower configurations offers designers broad scope for imaginative aesthetic solutions.**

California Applies Bridge Rules

The California Department of Transportation (Caltrans) uses guidelines like those discussed here to achieve aesthetic excellence in bridge design with the prestressed concrete box girder. California started using concrete box girders as a result of the steel shortage during World War II. Under the leadership of Arthur Elliott, Caltrans began in the 1950s to refine box girders aesthetically. Elliott brought architects into the design teams and fostered the development of design guidelines; a steady evolution in box-girder design followed.

The "California Bridge" box girder is typically cast in place on falsework, then post-tensioned longitudinally. Spans of up to 200 feet are usual, with multiple spans used for long bridges. This prestressed concrete box girder type is so fundamental in California practice that other bridge types must follow its form to be aesthetically acceptable. When precast concrete or steel-girder bridges are used, they are made to simulate the cast-in-place concrete box girder.

A central organization controls design and requires designers to use prescribed proportions and typical details for the basic bridge. While recognizing the need for unique bridges at a few special sites, Caltrans has managed to design most of its ordinary bridges—grade separation or overpass structures—with aesthetically desirable elements at essentially no cost penalty. Repetitive details for these bridges help contractors work economically. If a designer wants an unusual or special type of column or other element, it must be repeated enough on the project so the contractor can write off costs on that project alone. The contractor is not forced to count on another successful low bid to help pay for the special forms.

Simplicity of the girder form and standardization of detail have kept the prices of concrete box girders reasonable. Innovation and specialization by local bridge builders and a high volume of work also have contributed to economical construction. This highly successful design policy has resulted in overall aesthetic excellence. On the down side, according to Gloyd (Ref. 9), it discourages presentation of new ideas and has resulted in a decline in local availability of other bridge types at competitive costs.

Public Sentiment: The Current Scene

There is a growing perception that unsightly bridges are actually a form of pollution. Building a major structure, such as a bridge, changes the surrounding environment for 75 to 100 years or more. People's awareness of this change is causing public works directors and transportation agencies to seek community input when major bridges are planned. Local communities in California, for example, are given the option of paying for aesthetic effects they desire when the cost exceeds Caltrans guidelines.

After all, a bridge is more than just a bridge. It can become part of a neighborhood or community. Bridges, such as the Golden Gate Bridge and the Brooklyn Bridge, have become symbols of the communities they serve. When the Sunshine Skyway Bridge (Figure 4) opened in 1987, the *St. Petersburg (Fla.) Times* predicted: "For decades to come the new Skyway will bring tourists out of their way to see it, ride on it. Tampa Bay will be

Bridge Aesthetics: The World View

The two books listed below provided much background information for this article. Abundantly illustrated, they gather the opinions of more than 40 of the world's leading bridge designers, and provide valuable reference information on how to deal with everyday aesthetics problems in bridge design and construction.

Esthetics in Concrete Bridge Design, published by the American Concrete Institute, P.O. Box 19150, Detroit, MI 49219 (phone: 313-532-2600)

Bridge Aesthetics Around the World, published by the Transportation Research Board, 2101 Constitution Ave., N.W., Washington, D.C. 20418 (phone: 202-334-2934)

known by it."

As the general public and engineers themselves become increasingly aware that art and structure can be one, ordinary bridges of the future, as well as monumental ones, will be more efficient, economical, and elegant.

References

1. E. Cohen, "In the Eye of the Beholder," *Esthetics in Concrete Bridge Design*, MP-1, American Concrete Institute, Detroit, 1990, pp. 1-11.

2. Richard Weingardt, "Bridges and Our Environment," *Concrete Construction*, November 1990, pp. 942-946.

3. Fritz Leonhardt, "Developing Guidelines for Aesthetic Design," *Bridge Aesthetics Around the World*, Transportation Research Board, National Research Council, Washington, D.C., 1991, pp. 32-57.

4. Arthur Elliott, "Creating a Beautiful Bridge," *Bridge Aesthetics Around the World*, Transportation Research Board, 1991, pp. 215-229.

5. William Zuk, "An Expert System for the Esthetic Rating of Bridges," Virginia Transportation Research Council, Charlottesville, Va., 1990.

6. William Zuk, "Bridge Aesthetics Rating Diagrams," Virginia Highway Research Council, 1971.

7. Paul Harbeson, "Architecture in Bridge Design," *Bridge Aesthetics Around the World*, Transportation Research Board, 1991, pp. 105-121.

8. J. Murray, "Visual Aspects of Short- and Medium-span Bridges," *Bridge Aesthetics Around the World*, Transportation Research Board, 1991, pp. 156-166.

9. Stewart Gloyd, "California—A Quantified Bridge Esthetics Case Study," *Concrete International*, February 1994, pp. 44-49.

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Attachment 3:

Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle
(*Desmocerus californicus dimorphus*)

May 2017

Service Contact
The Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*) (Framework) was prepared by the U.S. Fish and Wildlife Service's Sacramento Fish and Wildlife Office. If you have questions regarding the Framework, please call (916) 414-6600. To download a copy of the Framework please visit:
https://www.fws.gov/sacramento/documents/VELB_Framework.pdf

Suggested Citation
U.S. Fish and Wildlife Service. 2017. Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*). U.S. Fish and Wildlife Service; Sacramento, California. 28 pp.

2

1.0 Introduction

The U.S. Fish and Wildlife Service (Service) is issuing this Framework to assist Federal agencies and non-federal parties in evaluating the potential effects of their projects on the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) (VELB), listed as threatened under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (Act). This framework can be consulted during the development of any project that may affect VELB or its habitat. It is intended to help project applicants assess potential effects to the VELB and develop measures to avoid, minimize, and compensate for adverse effects to the species or its habitat. It may also help determine whether those projects will require incidental take authorization through a section 7 consultation or a section 10(a)(1)(B) permit. Proposed projects that will have large landscape level impacts, are likely to provide a net conservation benefit, or will involve riparian restoration may need a different or more detailed analysis than what is provided here. Applicants and agencies proposing these, or similar types of projects, should discuss the project with the Service early in the planning process. The Framework may still provide guidance for an effects analysis, but these projects may exercise more flexibility when implementing conservation measures and compensation.

The primary goal of this document is to articulate a conceptual ecological model for the species. This framework represents the Sacramento Fish and Wildlife Office's current analytical approach for evaluating and assessing adverse effects to the VELB. It will be updated as new information becomes available. As always, the Service welcomes dialog and discussion with our partners in assessing impacts for particular projects and encourages project proponents to consult with the Service early in project development whenever possible.

The VELB is protected under the Act wherever it is found. Visual surveys for the VELB, which includes looking for adults and/or exit holes, are currently the only approved method of surveying for the species and are not entirely reliable for determining presence or absence (see below). Visual surveys, habitat assessments, and mitigation site monitoring do not require a section 10(a)(1)(A) recovery permit. Inquiries about other survey methods, recovery permits, and research should be directed to the Listing and Recovery Division at (916) 414-6600.

1.1 Previous Federal Actions

The VELB was listed as a threatened species under the Act on August 8, 1980 (Federal Register 45: 52803-52807). Concurrent with the final listing rule, two areas in Sacramento County were designated as critical habitat for the VELB (Appendix A). The first area, referred to as the "Sacramento Zone", is enclosed by California State Route 160 to the north, the Western Pacific railroad tracks to the west/southwest, and by Commerce Circle to the east. The second area, referred to as the "American River Parkway Zone", is actually two separate areas along the south bank of the American River in Rancho Cordova. A recovery plan for VELB was completed on June 28, 1984; however, due to a lack of information regarding VELB life history, distribution, and habitat requirements, the recovery plan

only described interim actions and not precise recommendations (Service 1984). For more information about VELB, its designated critical habitat, and the VELB recovery plan, please visit: https://ecos.fws.gov/ecp0/profile/speciesProfile?sId=7850.

On September 10, 2010, the Service was petitioned to delist the VELB and on August 19, 2011, the Service responded with a 90-day finding that determined the petition contained substantial information indicating that delisting VELB may be warranted (Federal Register 76: 51929-51931). On October 2, 2012, the Service published a proposed rule to delist VELB and to remove the species' critical habitat designation (Federal Register 77: 60238-60276). However, after receiving additional information regarding VELB, the Service did not delist the species and published the September 17, 2014, Withdrawal of the Proposed Rule to Remove the Valley Elderberry Longhorn Beetle From the Federal List of Endangered and Threatened Wildlife (Federal Register 79: 55874-55917) (Withdrawal Rule). The August 8, 1980, final listing rule and the Withdrawal Rule both described habitat loss as the primary threat to the species.

2.0 Life History

The VELB is a small (0.5 - 0.8 in.) wood-boring beetle in the *Cerambycid* family. It is sexually dimorphic and the females are indistinguishable from the more widespread California elderberry longhorn beetle (*Desmocerus californicus californicus*). Elderberry shrubs (*Sambucus* spp.) are the obligate larval host plants for the VELB (Collinge et al. 2001, Holyoak 2010) and their larvae go through several developmental stages (instars) within the elderberry shrub (Greenberg 2009). Eggs are laid individually on leaves or at the junctions of the leaf stalk and main stem (Barr 1991). Upon hatching, the larvae bore into the elderberry stem (Halstead and Oldham 1990) and create feeding galleries in the pith (Burke 1921, Barr 1991). Prior to pupation, the larvae creates an exit hole, plugs the hole with wood shavings, and returns to the gallery where it pupates (Halstead and Oldham 1990). Approximately 1 month later, the adult beetle emerges from the stem through the previously created exit hole (Burke 1921). Adult emergence, mating, and egg-laying, occurs in the spring and summer (March to July), typically coinciding with the elderberry flowering period (Burke 1921, Halstead and Oldham 1990). Under laboratory conditions, adult males typically live 4 to 5 days, while females can live up to 3 weeks (Arnold 1984). The only identifiable exterior evidence of elderberry use by VELB is the exit hole created by the larvae.

3.0 Range and Habitat Description

The VELB is protected wherever found. The current presumed range extends throughout the Central Valley (https://ecos.fws.gov/ecp0/profile/speciesProfile?sId=7850). The range extends from approximately Shasta County in the north to Fresno County in the south including the valley floor and lower foothills. The majority of VELB have been documented below 152 meters (500 feet) in elevation. Areas above 152 meters (500 feet) with suitable habitat and known VELB occurrences in that drainage may contain VELB populations in certain circumstances. The Service can assist in determining the likelihood of occupancy above 500 feet.

3.1 Habitat

Historically, the Central Valley had large (3.2-8.0 km wide), undisturbed expanses of riparian vegetation associated with the watersheds that drained the west side of the Sierra Nevada Mountains and the east side of the Coast Mountain Range. These watershed systems were highly dynamic and their floodplains supported a wide corridor of riparian vegetation (Katibah 1984) in a diverse mosaic of structures and species assemblages from early successional to mature gallery forest (Gilbart 2009).

During the last 150 years California's Central Valley riparian forests have experienced extensive vegetation loss due to expansive agricultural and urban development (Katibah 1984), and in many places, have dwindled to discontinuous, narrow corridors. Natural areas bordering the rivers, which once supported vast tracts of riparian vegetation, became prime agricultural land (Thompson 1961). As agriculture and urbanization expanded in the Central Valley, needs for increased water supply and flood protection spurred water development and reclamation projects. Artificial levees, river channelization, dam building, water diversion, and heavy groundwater pumping have further reduced riparian vegetation to small, isolated fragments (Katibah 1984). In many places, flood control levees have been installed adjacent to and parallel with the river, effectively sectioning the riparian forest habitat into discrete communities on either side of the levee. In recent decades, riparian areas in the Central Valley have continued to decline as a result of ongoing agricultural conversion, urban development, stream channelization and channel hardening.

Elderberry shrubs are common in the Central Valley where they grow naturally in a variety of riparian and non-riparian vegetative communities (Vaghti and Greco 2007). Most elderberry presence within the Central Valley is determined by broad scale hydrologic regimes such as the relative elevation of floodplain and floodplain width, and secondarily by sediment texture and topography (Fremier and Talley 2009). Elderberry shrubs are most common on higher and older riparian terraces, where the roots of the plant are able to reach the water table and where the plants are not inundated for long periods (Talley 2005; Vaghti et al. 2009). Elderberry shrubs can be found on historic floodplain terraces above the river, on levees (both on the river and land sides), and along canals, ditches, and areas where subsurface flow provides water to elderberry roots. Elderberry shrubs typically occur in most vegetation communities that occupy historic and current floodplains and terraces, to the top of channel walls in deeply incised rivers (i.e., the Tuolumne and Stanislaus Rivers), and to the top of and on the land-side of levees where woody plants create savannas or patchy woodlands. Elderberry can be a canopy or subcanopy species depending on the hydrology, vegetation composition, or disturbance at a particular site and it can occur as individual shrubs, clumps, clusters, and groves. In non-riparian settings, elderberries occur either singly or in groups in valley oak and blue oak woodland and annual grasslands. It is not known whether elderberries in this setting are also associated with a shallow water table or other shallow water sources. In natural areas, elderberry shrubs have also been shown to grow best with little canopy cover from associated vegetation (Talley 2005).

The historic distribution of the VELB closely matched the distribution of the elderberry host plant, which was patchily found throughout the Central Valley riparian forests and occasionally adjacent uplands (non-riparian). The Service recognizes habitat for VELB as including both riparian and non-riparian areas where elderberry shrubs are present. Riparian habitat includes all areas that are either influenced by surface or subsurface water flows along streams, rivers, and canals (including the landside of levees) and areas that have the vegetation communities similar to those defined below.

Riparian vegetation communities within the California Central Valley can be described as valley-foothill forest habitat, which includes many different forest associations. Non-riparian habitat includes valley oak and blue oak woodland and annual grassland. The following habitat descriptions have been adapted from Mayer and Laudenslayer (1988) (https://www.wildlife.ca.gov/Data/CWHR/Wildlife-Habitats).

Within California, valley-foothill riparian habitats occur in the Central Valley and the lower foothills of the Cascade, Sierra Nevada, and Coast mountain ranges. Riparian habitats show a wide range of both species and structural diversity. The valley-foothill riparian habitat is found in association with riverine, grassland, oak woodland, and agricultural habitats. Canopy height is about 30 meters in a mature riparian forest, with a canopy cover of 20 to 80 percent. Most trees are winter deciduous. There is a subcanopy tree layer and an understory shrub layer. Wild grapes (*Vitis californica*) frequently provide up to 50 percent of the ground cover and festoon trees to heights of 20-30 meters. Herbaceous vegetation constitutes about one percent of the cover, except in open areas where tall forbs and shade-tolerant grasses occur. Many non-native invasive species can also be found, and are sometimes common, in riparian habitat. Oak woodland, oak savanna, and elderberry savanna can occur as both riparian and non-riparian communities.

Dominant riparian canopy layer species include cottonwood (*Populus* sp.), California sycamore (*Platanus racemosa*), willow (*Salix* spp.) black walnut (*Juglans* spp.) and valley oak (*Quercus lobata*). Subcanopy trees include boxelder (*Acer negundo*) and Oregon ash (*Fraxinus latifolia*), and typical understory shrub layer plants include wild grape, wild rose (*Rosa* sp.), blackberry (*Rubus* sp.), poison oak (*Toxicodendron diversilobum*), and buttonbush (*Cephalanthus occidentalis*), and willows. The herbaceous layer consists of sedges (*Carex* sp.), rushes, grasses, miner's lettuce (*Claytonia* sp.), mugwort (*Artemisia* sp.), poison-hemlock (*Conium maculatum*), and hoary nettle (*Urtica dioica*). Many non-native woody species occur with elderberry including tree-of-heaven (*Ailanthus altissima*) and black locust (*Robinia pseudoacacia*)

Elderberry shrubs can be a common understory plant in both non-riparian valley oak and blue oak woodland habitats. Valley oak woodland is generally found at lower elevations than blue oak woodlands, but the two habitat types transition into each other in the lower foothill regions. Annual grasses and forbs dominate the herbaceous layer in both woodland habitat types (Mayer and Laudenslayer 1998) and both intergrade with annual grassland. Valley oak woodland can occur from savanna-like conditions to denser forest-like conditions, with tree density tending to increase along

natural drainages. Valley oak woodlands are almost exclusively dominated by valley oak, but may also contain sycamore, black walnut, blue oak (*Quercus douglasii*), interior live oak (*Quercus wislizeni*), and boxelder. Understory shrubs may include species such as, wild grape, toyon (*Heteromeles arbutifolia*), and California coffeeberry (*Frangula californica*). Blue oak woodlands can also occur from savanna-like conditions to denser forest-like conditions with a nearly closed canopy. Blue oak woodland is comprised of 85 to 100 percent blue oak trees, but may contain interior live oak and valley oak.

Common shrub associates include poison-oak, California coffeeberry, buckbrush (*Ceanothus cuneatus*), California buckeye (*Aesculus californica*), and manzanita (*Arctostaphylos* sp.). Within both of these habitats, elderberry may be found in the understory as well as in small clumps within the upland savanna. Elderberry shrubs are also often found away from riparian areas where ditches, irrigation, groundwater, or other features allow the plant to receive enough moisture and as ornamental plantings in regularly maintained landscaped areas.

3.1.1 Use of Riparian Habitat

Research suggests that the VELB occurs throughout the Central Valley in metapopulations (Collinge et al. 2001). Metapopulations are defined as a system of discrete subpopulations that may exchange individuals through dispersal or migration (Breininger et al. 2012, Nagelkerke et al. 2002). The VELB metapopulation occurs throughout contiguous intact riparian habitat as subpopulations that shift spatially and temporally within drainages, resulting in a patchwork of occupied and unoccupied habitat. Removal of suitable habitat (whether occupied or unoccupied) can increase the distance between occupied and unoccupied patches. Because its physical dispersal capability is limited, this fragmentation decreases the likelihood of successful colonization of unoccupied habitat (Collinge et al. 2001). As a consequence, the subpopulations are more vulnerable to stochastic events that may reduce or eliminate the subpopulation. The loss of multiple subpopulations can have an adverse impact on the long-term persistence and health of the metapopulation. Therefore, maintaining contiguous areas of suitable habitat is critical for maintaining the VELB.

At the local level, it appears that much of the variation in VELB occupancy of elderberry shrubs results from variables such as elderberry condition, water availability, elderberry density, and the health of the riparian habitat (Talley et al. 2007). This research indicates that healthy riparian systems supporting dense elderberry clumps are the primary habitat of VELB (Barr 1991, Collinge et al. 2001, Talley et al. 2006, Talley et al. 2007). Elderberry shrubs typically have a clumped distribution across the landscape (Figure 1) although they can occur singly. Upon emergence, VELB typically stay within the local clump (Talley et al 2007). Talley et al. (2007) found that much of the time, distances between stems with exit holes averaged 25-50 meters (65-165 feet) apart. At larger scales, average distances between these occupied clumps ranged from 200 meters (656 feet) up to 800 meters (2,625 feet) (Figure 1).

Because the elderberry is the sole host plant of the VELB, any activities that adversely impact the elderberry shrub may also adversely impact the VELB. Adverse impacts to elderberry shrubs can occur

either at a habitat scale or at an individual shrub scale. Activities that reduce the suitability of an area for elderberry plants or elderberry recruitment and increase fragmentation may have adverse impacts to mating, foraging, and dispersal of VELB. The patchy nature of VELB habitat and habitat use makes the species particularly susceptible to adverse impacts from habitat fragmentation.

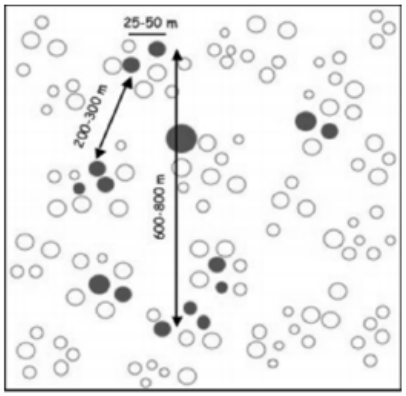


Figure 1. Schematic diagram of the spatial population structure of the valley elderberry longhorn beetle. Open circles represent unoccupied elderberry shrubs, closed circles are occupied by the valley elderberry longhorn beetle. Aggregation sizes and distances used are those found on the American River Parkway, where occupied clumps are approximately 25-50 meters apart, distances between aggregations of occupied clumps are approximately 200-300 meters, and the extent of the cluster of aggregations is 600-800 meters (Talley et al. 2006).

Determining whether an individual plant or clump is occupied by VELB can be challenging. Often the only external evidence that a VELB is present is the small exit hole made by the larva as it leaves the stem. Traditional exit hole surveys can help identify the past use of a particular shrub by VELB, but not its current occupancy. This difficulty makes assessing the likelihood of presence of individual VELB difficult. However, Talley et al. (2007) found that 73% of shrubs with old exit holes also had new exit holes, indicating that presence of an exit hole in the shrub increases the likelihood that that shrub or nearby shrubs are occupied. Therefore, impacts to individual shrubs with exit holes are reasonably likely to result in impacts to individual VELB, but the likelihood of adverse effects may not always be ascertained simply by the presence of exit holes (or the lack of). A more thorough analysis of nearby occurrences, surrounding habitat, and elderberry density is needed to fully address adverse impacts. In general, because of the difficulty in detecting VELB, the patchy nature of its distribution, and the importance of unoccupied habitat to maintain connectivity between VELB metapopulations, any

impacts to riparian habitat with elderberry shrubs present are likely to result in adverse effects to VELB.

3.1.2 Use of Non-Riparian Habitat

Much of the existing research has focused on the VELB's use of riparian habitat. In non-riparian habitats, a patchwork of individual shrubs provides opportunity for VELB occupancy, but it is unknown if the movement and distribution patterns remain consistent with the patterns found in riparian areas. In non-riparian areas, adverse effects to of VELB are likely to occur as a result of impacts to any elderberry shrub with exit holes, and adverse effects may result from disturbance to elderberry shrubs reasonably close to riparian areas or known VELB populations.

4.0 Occupancy Determination in Non-Riparian Habitat and Appropriate Surveys

The decision tree shown in Figure 2 is used by the Sacramento Fish and Wildlife Office to assess the effect of any proposed project on the VELB. It is recommended that proposed project sites within the range of the VELB be surveyed by a qualified biologist for the presence of elderberry shrubs. If elderberry shrubs are found on or within 50 meters (165 feet) of the project site, we recommend that the habitat be assessed to determine if the project area is in riparian or non-riparian habitat. Depending on the size, duration and/or type of proposed project, the larger area surrounding the project site may also be surveyed for the presence and number of elderberry shrubs.

If the project site is non-riparian and contains elderberry shrubs, we use exit hole surveys to evaluate the site for potential occupancy. Exit hole surveys are not essential in riparian areas, but may be conducted in order to assess the level and significance of adverse effects. The presence of exit holes in a shrub increases the likelihood that the shrub is occupied by VELB; however, a lack of exit holes does not preclude occupancy by the VELB. In the absence of exit holes we recommend that a biologist evaluate the project area using the following criteria (also shown in Figure 2):

1. Is there a riparian area, elderberry shrubs, or known VELB records within 800 meters (2,526 feet) of the proposed project?

   Isolated, non-riparian elderberry clumps are less likely to be occupied or become colonized by VELB and those beyond 800 meters (2,526 feet) from the nearest elderberry clump become increasingly less likely to be occupied. Therefore, a qualified biologist can assess the distance of the elderberry shrub from the nearest riparian area, elderberry shrub, and known occupied elderberry location.

2. Was the site continuous with a historical riparian corridor?

   Fragmentation of riparian corridors in the Central Valley has resulted in the isolation of elderberry shrubs or clusters that may provide important linkages between or within riparian corridors. A qualified biologist can evaluate the project location in the context of the historical riparian system. Isolated elderberry clumps that were part of a historic riparian vegetative community may still support VELB.

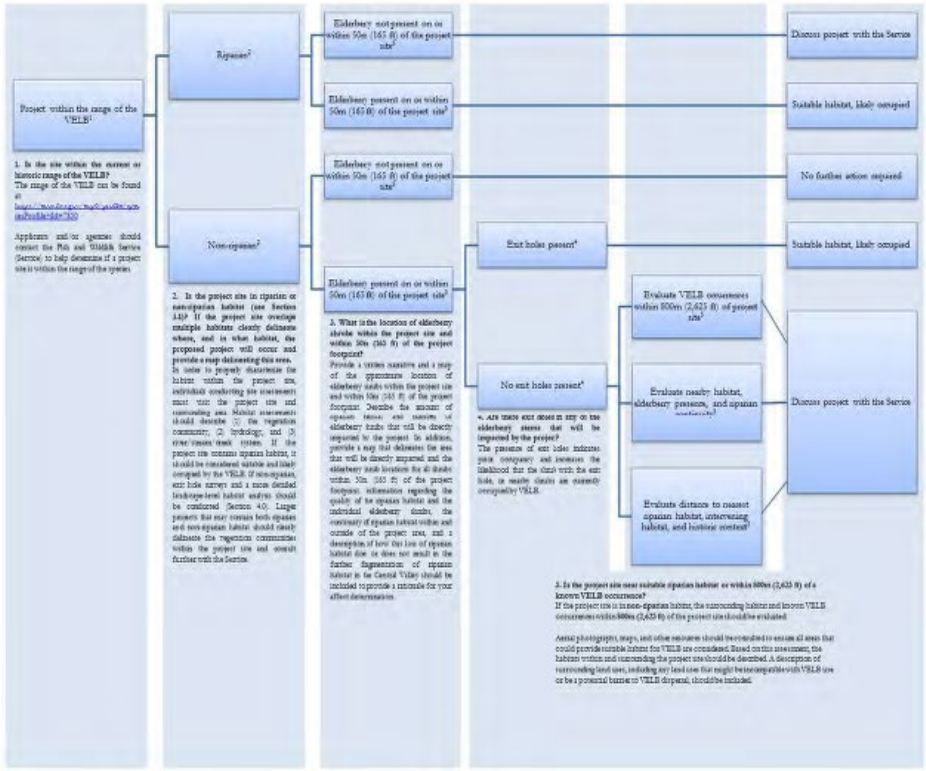


Figure 2. Decision tree to determine the likelihood of a particular elderberry shrub being occupied by valley elderberry longhorn beetle.

5.0 Conservation Measures

We encourage the development of proposed project designs that avoid riparian habitat and/or elderberry shrubs whenever possible. If elderberry shrubs occur on or within 50 meters (165 feet) of the project area, adverse effects to VELB may occur as a result of project implementation. If the project may affect VELB or its habitat, appropriate avoidance and minimization measures are recommended.

5.1 Avoidance and Minimization Measures

The following measures are recommended for incorporation into a proposed project to avoid and minimize effects to VELB and/or its habitat. Not all measures may be appropriate for every project, and agencies/applicants should coordinate with the Service to determine which measures may be needed. The text in this section and Section 5.2 is intended to provide language that may be used by agencies/applicants to describe avoidance and minimization measures for their proposed project.

Fencing. All areas to be avoided during construction activities will be fenced and/or flagged as close to construction limits as feasible.

Avoidance area. Activities that may damage or kill an elderberry shrub (e.g., trenching, paving, etc.) may need an avoidance area of at least 6 meters (20 feet) from the drip-line, depending on the type of activity.

Worker education. A 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 non-compliance.

Construction monitoring. A qualified biologist will monitor the work area at project-appropriate intervals to assure that all avoidance and minimization measures are implemented. The amount and duration of monitoring will depend on the project specifics and should be discussed with the Service biologist.

Timing. As much as feasible, all activities that could occur within 50 meters (165 feet) of an elderberry shrub, will be conducted outside of the flight season of the VELB (March - July).

Trimming (See 5.3). Trimming may remove or destroy VELB eggs and/or larvae and may reduce the health and vigor of the elderberry shrub. In order 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 or stems that are ≥ 1 inch in diameter. Measures to address regular and/or large scale maintenance (trimming) should be established in consultation with the Service.

Chemical Usage. Herbicides will not be used within the drip-line of the shrub. Insecticides will not be used within 30 meters (98 feet) of an elderberry shrub. All chemicals will be applied using a backpack sprayer or similar direct application method.

Mowing. Mechanical weed removal within the drip-line of the shrub will be limited to the season when adults are not active (August - February) and will avoid damaging the elderberry.

Erosion Control and Re-vegetation. Erosion control will be implemented and the affected area will be re-vegetated with appropriate native plants.

5.2 Transplanting

In order to protect VELB larvae to the greatest extent possible, we recommend that all elderberry shrubs with stems greater than 1 inch in diameter be transplanted under the following conditions:

1. If the elderberry shrub cannot be avoided.
2. If indirect effects will result in the death of stems or the entire shrub.

Removal of entire elderberry plants without disturbance to the surrounding habitat is uncommon, but may occur on certain projects. The removal may either include the roots or just the removal of the aboveground portion of the plant. We encourage project applicants to attempt to remove the entire root ball and transplant the shrub, if possible. In order to minimize the fragmentation of VELB habitat, the Service encourages applicants to relocate elderberry shrubs as close as possible to their original location. Elderberry shrubs may be relocated adjacent to the project footprint if: 1) the planting location is suitable for elderberry growth and reproduction; and 2) the project proponent is able to protect the shrub and ensure that the shrub becomes reestablished. If these criteria cannot be met, the shrub may be transplanted to an appropriate Service-approved mitigation site. Any elderberry shrub that is unlikely to survive transplanting because of poor condition or location, or a shrub that would be extremely difficult to move because of access problems, may not be appropriate for transplanting. The following transplanting guidelines may be used by agencies/applicants in developing their VELB conservation measures:

Monitor. A qualified biologist will be on-site for the duration of transplanting activities to assure compliance with avoidance and minimization measures and other conservation measures.

Exit Holes. Exit-hole surveys will be completed immediately before transplanting. The number of exit holes found, GPS location of the plant to be relocated, and the GPS location of where the plant is transplanted will be reported to the Service and to the California Natural Diversity Database (CNDDB).

Timing. Elderberry shrubs will be transplanted when the shrubs are dormant (November through the first two weeks in February) and after they have lost their leaves. Transplanting during the non-growing season will reduce shock to the shrub and increase transplantation success.

Transplanting Procedure. Transplanting will follow the most current version of the ANSI A300 (Part 6) guidelines for transplanting (http://www.tcia.org/).

Trimming Procedure. Trimming will occur between November and February and should minimize the removal of branches or stems that exceed 1 inch in diameter.

5.3 Impacts to Individual Shrubs

In certain instances, impacts to elderberry shrubs, but not the surrounding habitat may occur. This could take the form of trimming or complete removal of the plant. Trimming elderberry shrubs may result in injury or death of eggs, larva, or adults depending on the timing and extent of the trimming. Since the larva feed on the elderberry pith while they are developing, any trimming that could affect the health of the plant and cause the loss of stems may kill any larva in those stems. No adverse impacts to the VELB will occur if trimming does not remove stems/branches that are ≥1 inch in diameter and is conducted between November and February. Trimming that occurs outside of this window or removes branches ≥ 1 inch in diameter may result in adverse effects to VELB. In order to assess the risk of take from trimming activities, we recommend the following be evaluated:

1. Conduct an exit hole survey on the plant
2. Evaluate the surrounding habitat (riparian vs. non-riparian).
3. Evaluate the potential suitability of the plant to provide VELB habitat.
    a. Riparian plants are much more likely to be occupied or colonized by VELB.
    b. Plants in non-riparian locations should be evaluated using the criteria in Figure 2.

6.0 Compensatory Mitigation

For all unavoidable adverse impacts to VELB or its habitat, we recommend that lead agencies and project applicants coordinate with the Service to determine the appropriate type and amount of compensatory mitigation. For plants in riparian areas, compensation may be appropriate for any impacts to VELB habitat. In non-riparian areas, compensation is typically appropriate for occupied shrubs (Figure 2). Appropriate compensatory mitigation can include purchasing credits at a Service-approved conservation bank, providing on-site mitigation, or establishing and/or protecting habitat for VELB.

It is recommended that the permanent loss of VELB habitat be replaced with habitat that is commensurate with the type (riparian or non-riparian) and amount of habitat lost. Suitable riparian habitat may be replaced, at a minimum of 3:1 for all acres that will be permanently impacted by the project (Table 1). Suitable non-riparian habitat may be replaced, at a minimum of 1:1 for all acres that will be permanently impacted by the project (Table 1). We typically recommend that any shrub that will be adversely impacted by the project be transplanted to a Service-approved location.

We encourage agencies and/or applicants to propose appropriate compensation for all individual shrubs that will be impacted by the project. Strong compensation proposals consider the location of the plant (riparian or non-riparian) and the potential for the plant to be occupied by VELB (exit

holes present, likely occupied). Projects that only directly affect individual shrubs may consider replacing habitat based on the amount of effects that occur, the location of the shrub (riparian or non-riparian), and the presence of exit holes (non-riparian only) (Table 2). Impacts to individual shrubs in riparian areas may be replaced by the purchase of 2 credits at a Service-approved bank for each shrub that will be trimmed regardless of the presence of exit holes. If the shrub will be completely removed by the activity, the entire shrub may be transplanted to a Service-approved location in addition to the credit purchase. We recommend impacts to individual shrubs in non-riparian areas be replaced through a purchase of 1 credit at a Service-approved bank for each shrub that will be trimmed if exit holes have been found in any shrub on or within 50 meters (165 feet) of the project area. If the shrub will be completely removed by the activity, we suggest that the entire shrub be transplanted to a Service-approved location in addition to a credit purchase.

Table 1. Potential Valley Elderberry Longhorn Beetle Habitat-Level Compensation Examples

Habitat	Compensation Ratio [1]	Total Acres of Disturbance	Acres of Credits	Total Credit Purchase [2]
Riparian	3:1	1.2 acres	3.6 acres	87.8
Non-riparian	1:1	0.5 acre	0.5 acre	12.1

[1] acre(s) of credits: acre(s) of disturbance
[2] One credit (unit) = 1,800 sq. ft.

Table 2. Valley Elderberry Longhorn Beetle Shrub-Level Impact Compensation

Habitat	Compensation Ratio[1]	If the entire shrub will be removed
Riparian	2:1	Transplant the shrub + 2:1 compensation
Non-riparian (exit holes present)	1:1	Transplant the shrub + 1:1 compensation

[1] number of credits: number of shrubs trimmed
[2] One credit (unit) = 1,800 sq. ft. or 0.041 acre

The compensation scenarios in Table 1 are examples of the amount of habitat (riparian or non-riparian) that may be appropriate to compensate for a project's adverse impacts. Additional examples can be found in Appendix B. The amount of compensation deemed appropriate to offset effects to VELB will take into consideration the effects of the project and desired conservation outcome. The compensation examples in this Framework are for illustrative purposes only. Alternative methods for determining compensation should be coordinated with the Service. Currently, compensation at Service-approved VELB banks is partitioned into 1,800 sq. ft. basins.

Under this scheme, a single credit equals 1,800 sq. ft. or 0.041 acres. In order to calculate the total compensation credits needed for impacts to VELB, the total amount of disturbance in square feet should be calculated, the appropriate ratio applied, and the total number divided by 1,800.

We recommend that any project that occurs in suitable habitat (riparian or non-riparian) compensate for that loss in proportion to the total amount of habitat that will be disturbed as a result of project implementation. The acreage of habitat lost can be assessed based on all permanent surface disturbance including access routes and staging areas.

6.1 Compensatory Mitigation Proposals

If the lead agency or applicant is not purchasing credits at a Service-approved bank, they may compensate for habitat loss through on- or off-site mitigation. The Service has issued interim standards for the long-term management and protection of mitigation sites (https://www.fws.gov/endangered/improving_esa/). Those proposing on-site compensation, off-site habitat creation/enhancement, or those proposing to create a Service-approved conservation bank should work closely with the Service during the planning and development process. It is recommended that all plans adhere to the following criteria that are specific to VELB:

Site Selection and Development. Proposals using a strategic approach to ecosystem protection and restoration that will promote VELB metapopulation dynamics are preferred. Criteria for a suitable mitigation site may include abiotic factors such as soils, water availability, and prior land use as well as the proximity of the site to existing riparian habitat and known VELB records. Appropriate site selection is critical for achieving conservation success. A site that has incompatible soils or hydrology may not be able to meet the success criteria. Proposals that protect or enhance existing riparian habitat are preferred and the proposal should detail what, if any, measures will be needed to restore the site to ensure that it is suitable for elderberry survival.

Planting Plan. We recommend all proposals be designed to meet the desired distribution and density for elderberry shrubs and native associates that will be planted at the mitigation site in accordance with 1-3 below. The planting plan should be specific to the site and factors that will influence the success of the elderberry and native associate plantings. The plan should seek to establish a diverse natural riparian community with a complex vegetation structure. Native associates should include a mix of woody trees, shrubs, and other natives appropriate for the site. Stock of either seedlings or cuttings should be obtained from local sources. The number of elderberry and native associate plantings should be based on the desired distribution and density outcome proposed in the planting plan. The Service encourages planting plans that promote spatial and structural diversity within the mitigation site. We recommend planting plans be designed to meet the following goals:

1. Maximize the number of stems between 2 (0.8 inches) and 12 centimeters (4.7 inches). Talley et al. (2007) found stems within this size range had the largest proportion of VELB exit holes.
2. Minimize competition for sunlight and water. Native associates, particularly trees, can influence the long-term success of the mitigation site. Native associates should be planted at a ratio of 1 native associate for every 3 elderberry plants to avoid competition for sunlight and water with the elderberry plantings.
3. Achieve an average elderberry stem density of 240 stems/acre. This was the average stem density Vaghti et al. (2009) found for elderberry shrubs along the major river systems within the VELB range. The Service and lead agency or applicant should assess this goal after 5 years.

Buffer. A buffer area may be needed between the mitigation site and adjacent lands, depending on adjacent land-use. An appropriate buffer distance can be developed in coordination with the Service when proposing compensation. Although the buffer would be considered part of the mitigation site, the acreage of the buffer may not be considered compensation.

Success Standards. We recommend that the site management plan and/or planting plan specify timelines for achievement of the success standards for the site, as stated below. These timelines should reflect the impacts that the site is intended to compensate for, the specific abiotic factors at the site that could influence establishment, or any credit release criteria that need to be met. Standards for VELB mitigation banks can be found in Appendix C. These standards were developed specifically for mitigation banks, but can be broadly applied to all compensatory mitigation for VELB. Some of the timelines described in the standards may not be applicable in all situations, but agencies and applicants should work with the Service to develop success standards that best meet the goals of their individual compensatory mitigation proposal. We suggest that all compensatory mitigation meet the following:

1. A minimum of 60% of the initial elderberry and native associate plantings must survive over the first 5 years after the site is established. As much as feasible, shrubs should be well distributed throughout the site; however, in some instances underlying geologic or hydrologic issues might preclude elderberry establishment over some portion of the site. If significant die back occurs within the first 3 years, replanting may be used to meet the 60% survival criteria. However, replanting efforts should be concentrated to areas containing surviving elderberry plants. In some instances overplanting may be used to offset the selection of a less suitable site.
2. After 5 years, the site must show signs of recruitment. A successful site should have evidence of new growth on existing plantings as well as natural recruitment of elderberry. New growth is characterized as stems < 3 cm (1.2 inches) in diameter. If

no signs of recruitment are observed, the agency or applicant should discuss possible remedies with the Service.

Monitoring. Specific monitoring protocols and reporting timelines for the mitigation site should be developed in coordination with the Service. The population of VELB, the general condition of the mitigation site, and the condition of the elderberry and associated native plantings in the mitigation site should be monitored at appropriate intervals. In any survey year, a minimum of two site visits between February 14 and June 30 of each year must be conducted by a Service-approved biologist. Surveys must include:

1. A search for VELB exit holes in elderberry stems, noting the precise locations and estimated ages of the exit holes. The location of shrubs with exit holes should be mapped with a GPS. Because adult VELB are rarely encountered, targeted surveys for adults are not required. However, surveyors should record all adult VELB seen. Record photographs should be taken for all observations of adult VELB and their location mapped with a GPS. All exit hole or adult VELB observations should be reported to CNDDB.
2. An evaluation of the success standards outlined above.
3. An evaluation of the adequacy of the site protection (fencing, signage, etc.) and weed control efforts in the mitigation site. Dense weeds and grasses such as Bermuda grass (*Cynodon dactylon*) are known to depress elderberry recruitment and their presence should be controlled to the greatest extent practicable.
4. An assessment of any real or potential threats to VELB and its host plant, such as erosion, fire, excessive grazing, off-road vehicle use, vandalism, and excessive weed growth.
5. A minimum of 10 permanent photographic monitoring locations should be established to document conditions present at the mitigation site. Photographs should be included in each report.

Reports. A reporting timeline should also be developed during the development of monitoring protocols for the mitigation site. Reports submitted to the Service should present and analyze the data collected from the monitoring surveys. Copies of original field notes, raw data, photographs, and a vicinity map of the site (including any adult VELB sightings and/or exit hole observations) of the mitigation site must be included with the report. Copies of the report (including any applicable Service file number) must be submitted within 6 months of the survey to the Service (Field Supervisor) at the following address:

U.S. Fish and Wildlife Service
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, CA 95825.

7.0 Other Activities

The Framework may not be applicable for restoration, floodway maintenance, and other large scale habitat modification activities. These activities and the potential effects to VELB and its habitat should be considered on a project-by-project basis and discussed with the Service. We recommend that project proponents consider the effects to the species on a landscape level and ultimately seek to protect, preserve, and restore the continuity of VELB habitat. These and similar activities that may adversely impact the VELB and its habitat at landscape scales should consider avoidance, minimization, and compensation strategies that are appropriate for the specific project. Compensation may not be appropriate for those projects that impact only individual elderberry shrubs or result in a net benefit to VELB. Some possible conservation measures to consider for these large scale projects include:

1. Transplanting all affected elderberries to a similar on-site location.
2. Maintaining patches of appropriate habitat in areas where large-scale removal of elderberry shrubs will occur.
3. Scale trimming, removal, and other activities that allow VELB to persist within the area.

Literature Cited

Arnold, R.A. 1984. Letter to Carolyn Slobe, North Sacramento Land Company, Sacramento, California. Dated June 24, 1984.

Arnold, R. A. and J. Woollett. 2004. Report on the Threatened Valley Elderberry Longhorn Beetle and its Elderberry Food Plant at the Lawrence Livermore National Laboratory—Site 300. U.S. Department of Energy, Lawrence Livermore National Laboratory; Livermore, California. 34pp.

Barr, C.B. 1991. The Distribution, Habitat, and Status of the Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus Fisher (Insecta: Coleoptera: Cerambycidae). U.S. Fish and Wildlife Service; Sacramento, California. 134 pp.

Bell, C.D. 2016. *Sambucus*, in Jepson Flora Project (eds.). *Jepson eFlora*. Available: http://ucjeps.berkeley.edu/cgi-bin/get_IJM.pl?tid=10321. Accessed on August 25, 2016.

Breininger, D.R., M.A. Burgman, H.R. Akçakaya, and M.A. O'Connell. 2002. Use of metapopulation models in conservation planning. Pp. 405–427 *in* Applying Landscape Ecology in Biological Conservation [K.J. Gutzwiller (ed.)]. Springer-Verlag; New York, New York.

Burke, H.E. 1921. Biological notes on Desmocerus, a genus of roundhead borers, the species of which infest various elders. Journal of Economic Entomology 14:450–452.

Chemsak, J.A. 2005. Subfamily Lepturinae Latreille, Tribe Desmocerini Thomson. Pp. 1–14 in Illustrated Revision of the Cerambycidae of North America (Vol II. Lepturinae). Wolfsgarden Books; Chino, California. 446 pp. + plates.

Collinge, S.K., M. Holyoak, C.B. Barr, and T.J. Marty. 2001. Riparian habitat fragmentation and population persistence of the threatened valley elderberry longhorn beetle in central California. Biological Conservation 100:103–113.

Fremier, A.K. and T.S. Talley. 2009. Scaling riparian conservation with river hydrology: lessons from blue elderberry along four California Rivers. WETLANDS 29:150–162.

Gilbart, M. 2009. The health of blue elderberry (*Sambucus mexicana*) and colonization by the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) in restored riparian habitat. A thesis presented to the faculty of the California State University, Chico. Summer 2009.

Greenberg, A. 2009. A model of the longterm persistence of the valley elderberry longhorn beetle. A thesis presented to the faculty of Humboldt State University, in partial fulfillment of the requirements for the degree Master of Science in Environmental Systems, Mathematical Modeling. 76 pp.

Halstead, J.A. and J.A. Oldham. 1990. Special studies report: revision of the Nearctic Desmocerus Audinet-Serville with emphasis on the federally threatened valley elderberry longhorn beetle. (Coleoptera: Cerambycidae). Kings River Conservation District Research Report No. 90-002. 47 pp. + Figures.

Holyoak, M. 2010. Monitoring Plan Development for the Valley Elderberry Longhorn Beetle (VELB) for the Sacramento River. Report to The Nature Conservancy; Chico, California. 9 pp.

Katibah, E.F. 1984. A brief history of riparian forests in the Central Valley of California. Pp. 23–29 *in* California Riparian Systems: Ecology, Conservation, and Productive Management [R.E. Warner and K.M. Hendrix (eds.)]. University of California Press; Berkeley and Los Angeles, California.

Mayer, K.E. and W. F. Landenslayer (Eds.). 1988. A Guide to Wildlife Habitats of California. State of California, Resources Agency, Department of Fish and Game, Sacramento, CA. 166 pp.

Nagelkerke, Kees (C.J.), J. Verboom, F. van den Bosch, and K.van de Wolfshaar. 2002. Time lags in metapopulation responses to landscape change. Pp. 330–354 *in* Applying Landscape Ecology in Biological Conservation [K.J. Gutzwiller (ed.)]. Springer-Verlag; New York, Inc.

Talley, T.S. 2005. Spatial ecology and conservation of the valley elderberry longhorn beetle. Dissertation submitted in partial satisfaction of the requirements for the degree of Doctor of Philosophy in Ecology. University of California; Davis, California. 105 pp.

Talley, T.S., D. Wright, and M. Holyoak. 2006. Assistance with the 5-year review of the valley elderberry longhorn beetle (Desmocerus californicus dimorphus). Report to the U.S. Fish and Wildlife Service, Sacramento Fish and Wildlife Office, Sacramento, California. 74 pp. + appendix.

Talley, T.S., E. Fleishman, M. Holyoak, D.D. Murphy, and A. Ballard. 2007. Rethinking a rare-species conservation strategy in an urban landscape: The case of the valley elderberry longhorn beetle. Biological Conservation 135:21–32.

Thompson K. 1961. Riparian Forests of the Sacramento Valley, California. Annals of the Association of American Geographers 51(3):294–315.

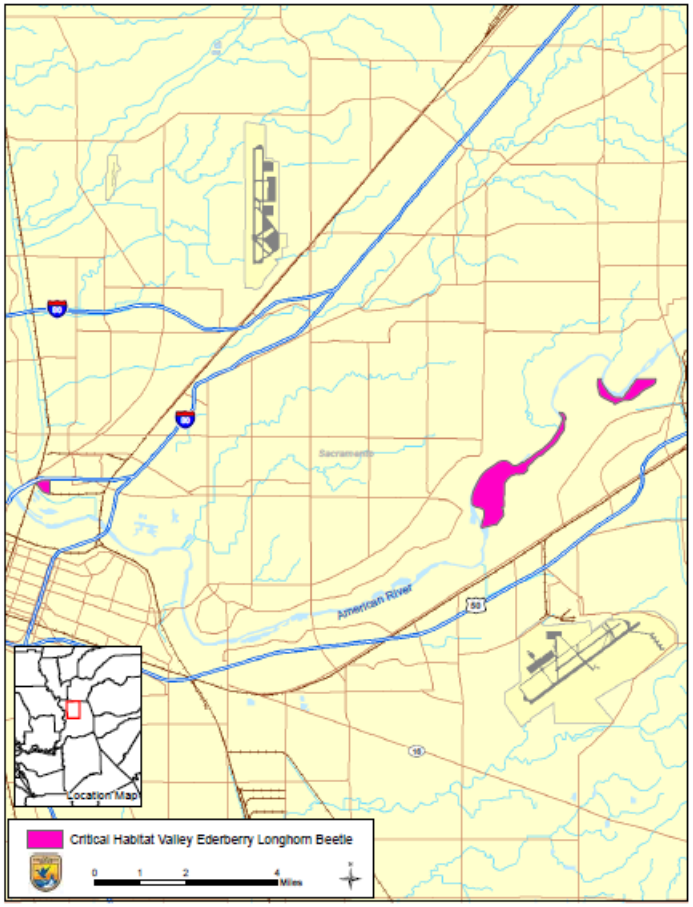
U.S. Fish and Wildlife Service (Service). 1984. Recovery Plan for the Valley Elderberry Longhorn Beetle. Dated June 28, 1984. U.S. Fish and Wildlife Service; Portland, Oregon.

Vaghti, M.G. and S.E. Greco. 2007. Riparian vegetation of the Great Valley. Pp. 425-455 *in* Terrestrial vegetation of California, 3rd edition. University of California Press, Berkeley, California.

Vaghti, M.G., M. Holyoak, A. Williams, T.S. Talley, A.K. Fremier, and S.E. Greco. 2009. Understanding the ecology of blue elderberry to inform landscape restoration in semiarid river corridors. Environmental Management 43:28–37.

Washington State Department of Natural Resources. 2016. Forest Practices Rule Book. Rules WAC 222.

Appendix A. Valley Elderberry Longhorn Beetle Critical Habitat



Appendix B. Compensation Examples

#1. An applicant is proposing to repair a bridge over Putah Creek. The project will require excavation within the channel and a re-contour of approaches to the new bridge. Pre-construction surveys noted that 3 elderberry shrubs in riparian habitat were within the project area, 2 of these shrubs will be directly impacted by the excavation work. The third shrub will be avoided using the appropriate avoidance and minimization measures. During the project, 0.5 acre of riparian habitat will need to be removed. The applicant has proposed to transplant the 2 directly affected elderberry shrubs to a Service-approved conservation bank and purchase 1.5 acres of credits at the conservation bank.

Conclusion: The project contains 3 elderberry shrubs on or within 50m of the project area. The project will result in the fragmentation of riparian habitat through the loss of 0.5 acres of riparian habitat. The compensation of 3:1 is appropriate for this project because it will be removing riparian habitat. The transplanting of the shrubs is appropriate because they would be directly impacted by the project.

#2. A new bike path will be constructed through an oak woodland/elderberry savanna. Pre-construction surveys identified one elderberry shrub within 0.10 acre of oak woodland/elderberry savanna that will be adversely affected by the proposed action. Exit holes were found on the elderberry shrub. The applicant also identified a conservation area that is suitable for oak woodland/elderberry savanna. Associated natives adjacent to the conservation area are blue oak (Q. douglasii), interior live oak, sycamore, poison oak, and wild grape. The applicant and the Service have agreed that transplanting the elderberry shrub into the conservation area and planting the conservation area with non-riparian habitat at a 1:1 ratio is appropriate to off-set the impacts to the VELB from the construction of this project.

Conclusion: The project contains 1 elderberry shrub on or within 50m of the project area. The project will result in the loss of 0.10 acre of non-riparian, elderberry savanna habitat. The proposed compensation of planting the identified conservation area at a 1:1 ratio using the species listed above is appropriate for the project since it will be removing non-riparian habitat. The transplanting of the one shrub into the conservation area is appropriate because it will be directly impacted by the project and the presence of exit holes suggests it was recently occupied by VELB.

The total area required for the conservation plantings are a minimum of 1,800 sq. ft. for one to five elderberry seedlings and up to 5 associated natives. A total of 0.10 acre (1 x 0.10 = 0.10 acre = 4,356 square feet) will be required for the plantings. The conservation area will be seeded and planted with native grasses and forbs, and closely monitored and maintained throughout the monitoring period (see Section 5).

#3. Construction of a cell tower will require the removal of two isolated elderberry shrubs and the temporary loss of a minimal amount of grassland habitat. The project location is 3 miles east of the Feather River. The project site is not near a water course or any other shrubs within 800m. The shrubs were surveyed and do not exhibit exit holes.

Conclusion: The project area contains two non-riparian shrubs on or within 50m of the project area. Since both shrubs lack exit holes, other factors need to be considered to determine the likeliness of occupancy. A review of occurrence data reveals there are no known VELB occurrences within 800m of the project site and historical imagery shows the project site has never been a part of, or connected to, riparian habitat. Based on the specifics of this scenario, the two elderberry shrubs within the project area are not likely to be occupied..

Appendix C. VELB Mitigation Bank Standards

The following was prepared by Sacramento Fish and Wildlife Office conservation banking staff as part of an effort to standardize and make transparent the process for establishing Valley Elderberry Longhorn Beetle (VELB) conservation banks. The credit release schedule and performance standards are intended to be practical, while promoting the success of the plantings. This document is not a comprehensive review of VELB literature, and is subject to revision.

Credit Release Schedule

The credit release schedule and performance standards are designed to ensure that the VELB conservation bank plantings will be self-sustaining after the irrigation is turned-off (before the start of year 5), so the credit release schedule is longer than it would be without irrigation, and credits will not be released prior to the year indicated. Credits will be released per the following schedule, slightly modified from the May 2008 Statewide Banking Template:

Table 1. Credit release schedule.

Credit Release	Action	Credits to be Released
1	Bank Establishment	15%
2	Service Acceptance of As-builts*	25%
3	Meet Year 2 Performance Standards, and endowment funded 15%	15%
4	Meet Year 3 Performance Standards, and endowment funded 40%	15%
5	Meet Year 5 Performance Standards, and endowment funded 70%	15%
6	Meet Year 7 Performance Standards, and endowment funded 100%	15%

*Review to be accomplished within 60 days of receipt of complete as-built drawings.
Note: endowment can be funded on an accelerated schedule, if the bank sponsor so desires.

Performance Standards

Performance standards apply to the credit releases upon the third release. If the elderberry population is too large for direct census, then sampling methods may be used, and they must be thoroughly described in the proposed bank's development and management plans, and will be subject to Service approval. Sample size must be adequate to assess the health of the population, as determined by a qualified plant ecologist[1]. Qualifications should be submitted with proposal.

Performance standards are based on survival without re-planting, and on baseline conditions of health and vigor of the elderberry plantings. If performance standards are not met, then the bank sponsor will meet with the Service to determine a course of action.

Table 2. Performance Standards.

Credit Release #	Monitoring Year	Performance Standards
3	Year 2	• 60% survival of original planted elderberries without re-planting[2], and all survivors categorized as "normal"[3] to "exceptionally vigorous"[3] • 60% survival of associates without re-planting[2] • Irrigation ok
4	Year 3	• Maintain 60% survival of original planted elderberries without re-planting[2], and all survivors categorized as "normal"[3] to "exceptionally vigorous"[3] • Maintain 60% survival of associates without re-planting[2] • Irrigation ok
5	Year 5	• Maintain 60% survival of original planted elderberries without re-planting[2] • Maintain 60% survival of associates without re-planting[2] • No more than 10% decline in overall health of *Sambucus* from baseline conditions[4] • No irrigation[5] • Fertilizer application prohibited
6	Year 7	• Maintain 60% survival of original planted elderberries without re-planting[2] • Maintain 60% survival of associates without re-planting[2] • No more than 10% decline in overall health of *Sambucus* from baseline conditions[4] • No irrigation[5] • Fertilizer application prohibited

[1]Qualified plant ecologist is defined as a person who:

a) holds a bachelor's degree or higher in botany, plant ecology or related plant science, or demonstrates experience equivalent to such education, and

b) shows demonstrated expertise in ecological sampling/experimental design beyond obtaining an academic degree, and

c) has 2+ years experience in collecting and analyzing botanical field data beyond obtaining an academic degree

[2]If re-planting, then time-clock begins again, with no additional credit releases until performance standards for the monitoring year in which the re-planting occurred has been met. Re-planting must be approved by the Service in advance.

[3]See Vigor and Vitality, below.

[4]Years 2, 3 and 4 are used to establish the baseline condition. See Baseline Conditions, below.

[5]If irrigation continues beyond the end of monitoring year 4, credit release #'s 5 and 6 will be delayed beyond the years indicated in Table 2.

Vigor and Vitality

Observations made by a qualified plant ecologist during the late spring/early summer will be used to determine the vigor and vitality of surviving shrubs for the year 2 and 3 performance standards, and photographs should clearly document this. The following scale will be used (from Mueller-Dombois and Ellenberg, 1974):

- Very feeble, never flowering/fruiting
- Feeble
- Normal
- Exceptionally vigorous

Baseline Conditions

Observations made by a qualified plant ecologist during late spring/early summer will be used to determine the baseline conditions of the planted elderberries. Sampling is allowable where the population of planted elderberries is extensive, and must be thoroughly described in the bank's development and management plans. The following measurements will be used to determine baseline conditions (Elzinga, et. al., 1998):

- Height
- # of inflorescences per shrub
- # of stems per shrub
- # of stems over 1" diameter per shrub
- Volume of plant (height x cover)

These measurements will be averaged for surviving shrubs over years 2, 3 and 4. Condition of the planted elderberries in years 5 and 7 will be compared to the baseline. Photographs should clearly document the baseline condition.

Monitoring Reports

Monitoring reports will be required during the establishment period for years 2-7, and should clearly document the progress of the plantings. All surveys must be thoroughly described, and copies of any field notes or data sheets from the current year included. Photographic documentation of elderberry and associate condition during the field surveys is required, and should clearly show the condition of all shrubs sampled. If sampling, describe sampling design. Each report should be comprehensive, and include data summaries and other pertinent information from previous monitoring years.

Requirements for long-term monitoring and reporting, including due dates, should be discussed in the bank's development and management plans.

References for Appendix C

Elzinga, Caryl L., D. W. Salzer, and J. W. Willoughby. 1998. Measuring and Monitoring Plant Populations. BLM Technical Reference 1730-1.

Gilbart, Meghan. 2009. The health of blue elderberry (*Sambucus mexicana*) and colonization by the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) in restored riparian habitat. Master's Thesis, California State University, Chico.

Mueller-Dombois, Dieter and H. Ellenberg. 1974. Aims and methods of vegetation ecology. John Wiley and Sons, Inc.

Response to Comment 23:

Thank you for your comment. Alternative 1 is the preferred alternative. Alternative 1 widens the bridge an additional 54'-11" on the northbound side of the bridge. Once complete, the bridge will be 151'-6" wide from outside edge-of-deck to edge-of-deck. The widening is necessary to facilitate construction, provide a safe work area for the contractor, maintain traffic flow during construction and to accommodate bike and pedestrian travel. No additional lanes will be added with this project. Therefore, the technical studies prepared for the environmental document determined that there are no significant impacts to GHG, VMT, air quality, or climate change.

Multiple bat surveys were completed at various times. On September 16, 2019 bat surveys were completed during the daytime for signs of bat roosting and on October 8 and October 21, 2019 at dusk, to watch for bats exiting bridge. No bats or evidence of bats roosting were found.

No Western Pond Turtle were observed during surveys.

River otters, beavers and muskrats are not listed species and do not require avoidance, minimization or mitigation measures. There is no regulatory nexus for them.

Additionally, the bridge deck is at least 100 feet above the river and will not likely pollute the water with nighttime lights from the ambient lighting.

Project impacts to the wetland will be mitigated by purchasing In-Lieu Fee credits. Minimization and avoidance measures are also included in the project. All impacts to the wetland with the fill are temporary. Only permanent impacts are for the culvert widening.

USFWS has final authority on how VELB must be mitigated, whether within the parkway or outside. Caltrans is working with the USFWS on how VELB must be mitigated, transplanting directly impacted shrubs is a standard part of VELB mitigation. Per the Biological Opinion the elderberry shrubs to be removed from the action area will be transplanted to a Service-approved beetle conservation bank with a service area that includes the proposed project.

Measures will be included in the construction contract and in the SPCCP if a spill occurs. Caltrans has completed Section 7 consultation with the United States Fish and Wildlife Service and the National Marine Fisheries Service. Caltrans will continue to work with the resource agencies to determine the appropriate mitigation for the project.

24. Dr. Michelle Stevens – Professor, C. S. U. Sacramento

From: Stevens, Michelle L
To: Sandhu, Sandeep@DOT
Cc: Stevens, Michelle L
Subject: American River Bridge Deck Replacement Project, IS-Draft MND
Date: Friday, December 18, 2020 4:20:33 PM

EXTERNAL EMAIL. Links/attachments may not be safe.

Dear Sandeep,

I would like to comment on the American River Bridget Deck Replacement Project, IS-Draft MND. At this time, I am in the middle of finals week and grading, so it is difficult for me to find the time to comment substantively. Therefore, I am writing within the comment deadline to ask for a deferral to have my comments accepted after the deadline.

I would specifically like to comment on the western pond turtle in the project area based on our research at Bushy Lake. We plan to continue our ongoing research under the grant specifications of the Bushy Lake Restoration Plan funded by the California Wildlife Conservation Board, funded through June 2023.

Lastly, I made a video the Magic of Bushy Lake for the virtual tour of the lower American River by the WCB last Friday. Would you and your staff biologists like me to send you a copy? It turned out pretty well.

Warm Regards,

Michelle Stevens

Refer to: American River Bridge Deck Replacement Project, IS-Draft MND

Dr. Michelle Stevens
Professor, Environmental Studies Department
CSUS
Amador Hall 555B
stevensm@csus.edu
Cell 916-765-7397
Web Site: http://www.csus.edu/faculty/s/stevensm/index.html

Response to Comment 24:

Caltrans emailed Dr. Michelle Stevens back and stated that we would need her comments by January 8, 2021.

Dr. Michelle Stevens comment was received on January 8, 2021 and addressed in comment # 28.

25. Ralph Propper – President, Environmental Council of Sacramento

ECOS
ENVIRONMENTAL COUNCIL OF SACRAMENTO

Post Office Box 1526 • Sacramento, CA • 95812 • (916) 444-0022

December 18. 2020

California Department of Transportation
Environmental Management M3 Branch
703 B St
Marysville, CA, 95901
via email to <SR51.American.River.Bridge@dot.ca.gov>

Re: American River Bridge Deck Replacement Project, IS/EA with Proposed MND

Thank you for the opportunity to comment on the Initial Study with Proposed Mitigated Negative Declaration for American River Bridge Deck Replacement, issued by Caltrans on October 10, 2020, with public comment period extended to December 18, 2020. Caltrans is evidently treating this project as a stand-alone project for the purpose of environmental clearance even though it is clearly the first segment of the larger project to widen SR 51 (a/k/a Business 80 and CapCity freeway) between milepost ("PM") 1.0 and PM 4.4 as described in Caltrans's Notice of Public Scoping issued three years ago, in mid 2017. The current proposed project covers a much shorter distance, with construction limited to just under 3,000 feet between PM 2.3 and PM 2.9; the bridge itself spans only the first 2,000 feet and the northern 1,000 feet are on an embankment. Evidently environmental clearance also covers incidental impacts from construction between PM 2.0 and PM 3.5.

Project Segmentation and Need for a Program Level EIR/EIS

By claiming that deck widening is incidental to deck replacement, Caltrans is segmenting the larger project, and attempting to defer considerations of increased vehicular capacity (increased VMT and GHG emissions) until later, rather than first undertaking a program-level EIR for the entire project that would deal with these larger issues.

> 14 CCR §15165. Multiple and Phased Projects. Where individual projects are, or a phased project is, to be undertaken and where the total undertaking comprises a project with significant environmental effect, the lead agency shall prepare a single program EIR for the ultimate project as described in Section 15168. Where an individual project is a necessary precedent for action on a larger project, or commits the lead agency to a larger project, with significant environmental effect, an EIR must address itself to the scope of the larger project. Where one project is one of several similar projects of a public agency, but is not deemed a part of a larger undertaking or a larger project, the

agency may prepare one EIR for all projects, or one for each project, but shall in either case comment upon the cumulative effect.

Caltrans is planning to widen SR 51 over its entire length (8.6 miles), between interchanges with US 50 and I-80, although planning north of Arden Way (PM 4.4) is still just conceptual. Major issues that need to be addressed in a program level EIR for the entire length of SR 51 include environmental impacts from larger traffic volumes induced by a wider facility such as increased greenhouse gas (GHG) emissions, and full consideration of more environmental friendly alternatives to widening the freeway.

The alternatives other than "No Build" are more than bridge deck replacement and are linked to a possible future capacity increasing project that isn't funded. By widening the bridge permanently under the guise of "deck replacement" Caltrans increases the likelihood the future project will be funded, and thus trigger impacts beyond what would be required by bridge deck replacement without widening, including air quality impacts in this nonattainment area and climate change impacts from increased traffic volumes. When the two linked projects are considered the appropriate environmental document is an EIR/EIS, not an MND.

Alternatives That Should Be Considered

The California Environmental Quality Act (CEQA) and its implementing guidelines require a "clearly written statement of objectives" for a project that is sufficiently broad to inform a "reasonable range of alternatives." (See, e.g., 14 CCR §15124(c)).

This Initial Study purports to be primarily "deck replacement" and bridge widening is incidental, but fails to justify the need to widen the bridge by 54 feet (over 50%) to facilitate deck replacement, or even consider an alternative that would not need to widen the bridge at all. If the current project was merely "deck replacement" consideration should be given to constraining construction within the existing footprint of the bridge even if that alternative would require a temporary reduction in highway capacity.

Caltrans does not present any alternative to the uncomfortable and dangerous bike path that it proposes to locate on the bridge. Caltrans has an obligation to create truly complete streets and transportation solutions. An after-thought bike path on a highway bridge is neither pleasant nor safe, exposes bike riders to particulate pollution from vehicles, and is unlikely to see substantial use.

Alternatives 2 and 3 fall completely outside the scope of "deck replacement", and should be eliminated. Furthermore, Alternative 1 already proposes to widen the deck to 151 feet, more than enough to easily accommodate 10 vehicular lanes, the ultimate build out anticipated for SR 51, so there should never be a need to widen the deck on the west side as well as the east side.

Caltrans must fully assess construction impacts over the duration of the project, some 700 days starting in Fall 2022 (p 10) and possibly longer due to construction delays. Caltrans should

anticipate at least two years of heavy construction in the middle of the city, during which time, congestion will increase, and vehicles will be displaced onto surface streets.

Many issues would have to be addressed in a program-level EIR, and the following comments are addressed to the earlier Notice of Public Scoping issued in 2017 for the longer segment between PM 1.0 and PM 4.4.

Project Is Ill-Defined and Unnecessary

At core, Caltrans appears to have unduly narrowly defined the project to widen SR 51 over its entire length to as much as ten vehicular lanes. The California Environmental Quality Act (CEQA)[1] and its implementing guidelines require a "clearly written statement of objectives" for a project that is sufficiently broad to inform a "reasonable range of alternatives." (See, e.g., 14 CCR §15124(c)). Here, the problem Caltrans is trying to solve – and which must, therefore, inform the project description – is how best to move people and goods across the American River and through the corridor under review.

But this is not how Caltrans has defined its project. Instead, the project is defined as a "freeway improvements project" and focuses exclusively on physical changes to the road itself in order to "relieve traffic congestion" and "provide a transportation facility." (Scoping Notice at 2). Caltrans nowhere considers whether the transportation goals it articulates could be better served, for instance, via investments in public transportation, measures to reduce vehicle miles travelled (VMT), or changes in development and work patterns (e.g., infill that reduces the need for trips and teleworking that decreases commute needs). Such considerations are mandatory for planners under CEQA, as viable alternatives (see, e.g., 13 CCR § 15126.6) and substantive statutes and orders, such as EO-B-16-2012, SB 375, and AB 32. In other words, Caltrans has improperly defined its project in terms of physical highway alterations, with the result that it has arbitrarily narrowed its range of alternatives to changes in highway design. This improperly avoids consideration of less environmentally destructive, and likely more effective, alternative planning and project approaches that could entirely avoid the impacts of the project. This violates CEQA.

Moreover, CEQA documents must include sufficient technical detail and evidence to allow for a "full assessment of significant environmental impacts by reviewing agencies and the public." (See, e.g., 13 CCR § 15147). This is of particular importance when the agency is considering a very substantial investment of public dollars, given Caltrans's fundamental responsibility to invest transport funds wisely. And yet, Caltrans entirely omits from the Scoping Notice any

[1] Although we focus on CEQA violations in these comments, it is likely that the SR 51 widening project will receive federal funds, and so is very likely subject to the National Environmental Policy Act (NEPA) as well. Caltrans is violating NEPA's parallel requirements for well-defined projects, full impact disclosure, and careful consideration of alternatives for substantially the same reasons as it is violating CEQA.

acknowledgment of a critical fact. Though Caltrans claims that a road-widening project will reduce congestion, this is not the case. On the contrary, "Increasing Highway Capacity Unlikely to Relieve Traffic Congestion,"[2] a conclusion based on Caltrans-funded research carried out by the University of California at Davis. That study's core conclusions are that:

- The quality of the evidence linking highway capacity expansion to increased VMT is high. All studies reviewed used time series data and sophisticated econometric techniques to estimate the effect of increased capacity on congestion and VMT. All studies also controlled for other factors that might also affect VMT, including population growth, increases in income, other demographic factors, and changes in transit service.
- Increased roadway capacity induces additional VMT in the short-run and even more VMT in the long-run. A capacity expansion of 10% is likely to increase VMT by 3% to 6% in the short-run and 6% to 10% in the long-run. Increased capacity can lead to increased VMT in the short-run in several ways: if people shift from other modes to driving, if drivers make longer trips (by choosing longer routes and/or more distant destinations), or if drivers make more frequent trips. Longer-term effects may also occur if households and businesses move to more distant locations or if development patterns become more dispersed in response to the capacity increase. One study concludes that the full impact of capacity expansion on VMT materializes within five years 6 and another concludes that the full effect takes as long as 10 years.
- Capacity expansion leads to a net increase in VMT, not simply a shifting of VMT from one road to another. Some argue that increased capacity does not generate new VMT but rather that drivers simply shift from slower and more congested roads to the new or newly expanded roadway. Evidence does not support this argument. One study found "no conclusive evidence that increases in state highway lane-miles have affected traffic on other roads" while a more recent study concluded that "increasing lane kilometers for one type of road diverts little traffic from other types of roads."
- Increases in GHG emissions attributable to capacity expansion are substantial. One study predicted that the growth in VMT attributable to increased lane miles would produce an additional 43 million metric tons of CO_2 emissions in 2012 nationwide.
- Capacity expansion does not increase employment or other economic activity. Economic development and job creation are often cited as compelling reasons for expanding the capacity of roadways. However, most studies of the impact of capacity expansion on development in a metropolitan region find no net increase in employment or other economic activity, though investments do influence where within a region development occurs.
- Conversely, reductions in roadway capacity tend to produce social and economic benefits without worsening traffic congestion. The removal of elevated freeway segments in San Francisco coupled with improvements to the at-grade Embarcadero and Octavia Boulevards has sparked an on-going revitalization of the surrounding areas while producing a significant drop in traffic. Many cities in Europe have adopted the strategy of closing in the central business district to vehicle traffic as an approach to economic

[2] <https://escholarship.org/uc/item/58x8436d>; also attached as a separate document.

revitalization, and this strategy is increasingly being adopted in cities the U.S., from New York City to San Francisco

Caltrans should have disclosed these conclusions to the public in its Scoping Notice, and this omission violates CEQA's core purposes of public information and transparency to inform good decision making. Indeed, these conclusions demonstrate that the project is unsupported by the evidence and counter-productive. Moreover, the project appears to be inconsistent with the state's greenhouse gas reduction targets. (see Final Staff Report Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets, particularly figures on p. 12 and p. 29; see also the California Air Resources' Board's several AB 32 Scoping Plans). The project must, therefore, be described accurately – as a project to improve transportation experiences for those in the Corridor – rather than as a highway improvement project. To do otherwise violates CEQA's core purposes.

Alternatives Are Inadequate and Poorly Described

The fatally flawed project description also results in wholly inappropriate alternatives. The project alternatives are all variations on the same flawed project – a highway widening project. This is not consistent with CEQA's mandate to "describe a range of reasonable alternatives to the project, or the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." (13 CCR § 15126.6(a)).

Merely describing slight variations in road design does not fulfill this mandate. On the contrary, feasible alternatives (and combinations of alternatives) that Caltrans must consider if it moves forward include, but are not limited to:

- No project at all.
- Local-level street and bicycle bridges to better connect city streets for short trips.
- Significant investments in public transportation, including buses, bus lanes, rail transport expansions and service improvements, and bike-sharing. These investments would be likely to reduce demand for roadway space, and more efficiently use public monies.
- Congestion pricing and geo-fencing. Pricing entry into congested regions at high demand times is a proven mechanism for alleviating congestion (unlike counter-productive road widening which will make the problem worse). Monies from congestion pricing could then be reinvested into public transport and other means of further reducing congestion.
- Improved regional planning to reduce the need for travel. A growing emphasis on infill development in the core of Sacramento, and in regional urban centers (such as Roseville) will reduce the need for long commutes and can improve overall regional economics, as well traffic congestion.

Caltrans should actively solicit further options from the public and from transportation experts.

Comment

It must, per CEQA, select one of these alternatives if it is feasible and serves the purposes of the project. Such alternatives are almost certainly superior to the proposed project, as the proposal will increase traffic congestion and air pollution.

Impacts Are Not Properly Characterized

Moreover, Caltrans has failed to acknowledge, much less mitigate or avoid, significant impacts. A sufficient CEQA analysis must fully disclose all relevant impacts (see Conservation Law Found. v. FHA (2007) 630 F. Supp. 2d 183; Cal. Clean Energy Comm. v. Woodland (2014) 225 Cal.App.4th 173; and Cleveland Nat'l Forest Fntd. v. SANDAG (2014) Cal.App.4th). CEQA's focus on clear and transparent information requires full disclosure of relevant impacts. (Public Resources Code, sections 21000, 21001. 21002) CEQA requires the public agency to analyze the direct and indirect physical changes in the environment. (Public Resources Code section 21065.) Noncompliance with CEQA and the lack of such an analysis may preclude relevant and informed public participation and decision-making. (Public Resources Code section 21005, subd. (a).) This Scoping Notice, and any CEQA analysis based upon it, does not.

Caltrans intends to begin construction in 2023, finishing in 2027. In other words, Caltrans anticipates at least four years of heavy construction in the middle of the city. During that time, congestion will increase, and vehicles will be displaced onto surface streets. After that time, as discussed above, congestion will ultimately be worse than before. Caltrans must be frank about both these acute and chronic impacts – and the high likelihood that they cannot be offset by a year or two of relative relief at this specific stretch of road as congestion is momentarily displaced into other locations, before induced travel causes the problem to recur.

Induced Travel. VMT is a critical measure of environmental impact, as VMT best captures the likely greenhouse gas and air pollution impacts of changes in transportation patterns. In order to assess greenhouse gas emissions and emissions of other pollutants, the amount of vehicle travel associated with a project must be determined quantitatively.

Moreover, these results must be compared against the state's GHG reduction goals, as well as its goals under the federal Clean Air Act State Implementation Plan (SIP).[3] As the California Supreme Court recently explained in Cleveland National Forest Foundation v. San Diego Ass'n of Governments, 3 Cal. 5th 497 (2017), agencies "must straightforwardly address in [CEWA documents] whether the [project] as a whole is in accord with" "state climate goals." (id. at 518). These goals, notably, include SB 32's goal of "reducing greenhouse gas emissions by 40 percent below 1990 levels by the year 2030." (id. at 518-19). Thus, Caltrans must explain how its project will affect VMT, and greenhouse gas and toxics and criteria pollution emissions, and how these effects relate to legally required state reduction mandates.

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[3] This comparison should include a full transportation conformity analysis under the Clean Air Act for all affected regions and criteria pollutants. The analysis should also include consideration of any toxic air contaminants (especially diesel particulates and PM 2.5) on nearby communities.

This work must be technically rigorous. The quantified amount of VMT, and resulting emissions, induced by a project should be reported in the CEQA document for transparency. VMT assessments ought to either be undertaken using methods based on induced travel study elasticities, or results from models ought to be compared to check whether they are within the range provided by the induced travel study elasticities. Any assessment of induced travel which does not demonstrate effects on the following factors is not adequate under CEQA.

1. Trip length
2. Mode shift
3. New trips
4. Route shifts
5. Land use changes

In particular, an analysis that does not include the effects on land use, and the resulting effects on transportation, is not adequate under CEQA. (See, e.g., 13 CCR § 15126.2 (direct, indirect, cumulative, and growth-inducing effects of CEQA projects must be fully and accurately disclosed). Because travel demand models are not capable of showing changes in land use resulting from a transportation project, any induced travel assessment made using a travel demand model must include a methodology for separately assessing land use changes resulting from the project, and incorporate the VMT impacts of those land use changes. To ensure the assessment is reasonably accurate, an induced travel assessment made using a travel demand model should be compared to findings in the academic literature on induced travel; specifically, the VMT assessed by a travel demand model should fall within the elasticity range predicted by those studies.

Climate Change. Incredibly, the Scoping Notice makes no mention of climate impacts at all. This is wholly contrary to CEQA, and must be remedied, including via the VMT analysis described above. (13 CCR § 15064.4).

Distributional and Environmental Justice Impacts. As Government Code § 11135 makes clear, state funded projects must duly account for impacts on members of protected classes and avoid disparate impacts. Caltrans' proposed project would disadvantage members of minorities and of lower-income communities in multiple regards. By diverting funding towards single-passenger cars, rather than public transportation, it would weaken transportation systems disproportionately used by members of these communities. And by worsening greenhouse gas and air quality impacts, it would worsen environmental problems disproportionately experienced by members of these communities. These impacts must be disclosed.[4]

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[4] This disclosure should include a fair description of where congestion will migrate as a result of Caltrans' project. Removing the bottleneck at the American River is likely to induce travel and congestion, and yield bottlenecks in other locations. Caltrans must disclose these locations based on a reasonable modeling analysis, and determine whether disparate impacts on protected classes would result.

Baseline Considerations and Project Forecasts

In assessing impacts, alternatives, and mitigation, Caltrans must use a proper baseline and appropriately forecast relevant impacts.

Among these requirements, Caltrans should consider the effects of automated vehicles and ride-sharing on the need for the project, its impacts, and its alternatives. Many studies suggest that automated vehicles and ride-sharing services may allow for reduced vehicle demand overall and more effective use of roadway surfaces. Caltrans should therefore consider whether, at likely penetration of these services and vehicles will alleviate the congestion impacts with which it is concerned.

Caltrans should also consider the full impacts of all relevant emissions standards, controls, and planning requirements (including all emissions standards set by U.S. EPA or the California Air Resources Board) in the baseline for its impacts analysis. Forecasted compliance with these legally binding requirements must not be characterized as mitigation for the project.

Additional Considerations

Caltrans should also consider whether its project – which includes years of construction and then years of increased noise and pollution -- is consistent with the American River Parkway Plan, statutes protecting the Wild and Scenic Lower American River, and the federal Endangered Species Act (including considering whether construction, operations, or increased aerial deposition of heavy metal pollutants into the rivers may jeopardize the endangered salmonid species of the river or adversely impact critical habitat). It is hard to square this years-long, unnecessary, construction project with the proper conservation of these precious, and legally protected, resources.

Conclusion

For the many reasons described above, this project is improper and should not proceed further. If Caltrans does proceed to the EIR phase, it should modify the project description, impacts, mitigation, and alternatives consistent with law.

ECOS requests to be placed on all relevant public notice lists, and a written response to these comments.

Sincerely,

Ralph Propper, President
Environmental Council of Sacramento

8

Attachment 1:

UC Davis
Policy Briefs

Title
Increasing Highway Capacity Unlikely to Relieve Traffic Congestion

Permalink
https://escholarship.org/uc/item/58x8436d

Author
Handy, Susan

Publication Date
2015-10-01

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October 2015

National Center for Sustainable Transportation

POLICY BRIEF

Increasing Highway Capacity Unlikely to Relieve Traffic Congestion

Susan Handy
Department of Environmental Science and Policy
University of California, Davis

Contact Information:
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Issue

Reducing traffic congestion is often proposed as a solution for improving fuel efficiency and reducing greenhouse gas (GHG) emissions. Traffic congestion has traditionally been addressed by adding additional roadway capacity via constructing entirely new roadways, adding additional lanes to existing roadways, or upgrading existing highways to controlled-access freeways. Numerous studies have examined the effectiveness of this approach and consistently show that adding capacity to roadways fails to alleviate congestion for long because it actually increases vehicle miles traveled (VMT).

An increase in VMT attributable to increases in roadway capacity where congestion is present is called "induced travel". The basic economic principles of supply and demand explain this phenomenon: adding capacity decreases travel time, in effect lowering the "price" of driving; and when prices go down, the quantity of driving goes up.[1] Induced travel counteracts the effectiveness of capacity expansion as a strategy for alleviating traffic congestion and offsets in part or in whole reductions in GHG emissions that would result from reduced congestion.

Key Research Findings

The quality of the evidence linking highway capacity expansion to increased VMT is high. All studies reviewed used time-series data and sophisticated econometric techniques to estimate the effect of increased capacity on congestion and VMT. All studies also controlled for other factors that might also affect VMT, including population growth, increases in income, other demographic factors, and changes in transit service.[2]

Increased roadway capacity induces additional VMT in the short-run and even more VMT in the long-run. A capacity expansion of 10% is likely to increase VMT by 3% to 6% in the short-run and 6% to 10% in the long-run. Increased capacity can lead to increased VMT in the short-run in several ways: if people shift from other modes to driving, if drivers make longer trips (by choosing longer routes and/or more distant destinations), or if drivers make more frequent trips.[3,4,5] Longer-term effects may also occur if households and businesses move to more distant locations or if development patterns become more dispersed in response to the capacity increase. One study concludes that the full impact of capacity expansion on VMT materializes within five years[6] and another concludes that the full effect takes as long as 10 years.[7]

Capacity expansion leads to a net increase in VMT, not simply a shifting of VMT from one road to another. Some argue that increased capacity does not generate new VMT but rather that drivers simply shift from slower and more congested roads to the new or newly expanded roadway. Evidence does not support this argument. One study found "no conclusive evidence that increases in state highway lane-miles have affected traffic on other roads"[8] while a more recent study concluded that "increasing lane kilometers for one type of road diverts little traffic from other types of roads".[9]

Increases in GHG emissions attributable to capacity expansion are substantial. One study predicted that the growth in VMT attributable to increased lane miles would produce an additional 43 million metric tons of CO_2 emissions in 2012 nationwide.[10]

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Capacity expansion does not increase employment or other economic activity. Economic development and job creation are often cited as compelling reasons for expanding the capacity of roadways. However, most studies of the impact of capacity expansion on development in a metropolitan region find no net increase in employment or other economic activity, though investments do influence where within a region development occurs.[11, 12]

Conversely, reductions in roadway capacity tend to produce social and economic benefits without worsening traffic congestion. The removal of elevated freeway segments in San Francisco coupled with improvements to the at-grade Embarcadero and Octavia Boulevards has sparked an on-going revitalization of the surrounding areas while producing a significant drop in traffic.[13] Many cities in Europe have adopted the strategy of closing streets in the central business district to vehicle traffic as an approach to economic revitalization,[14] and this strategy is increasingly being adopted in cities the U.S., from New York City to San Francisco.

Further Reading

This policy brief is drawn from the "Impact of Highway Capacity and Induced Travel on Passenger Vehicle Use and Greenhouse Gas Emissions" policy brief and technical background memo prepared for the California Air Resources Board (CARB) by Susan Handy (University of California, Davis) and Marlon Boarnet (University of Southern California), which can be found on CARB's website along with briefs and memos on 22 other land use and transportation strategies that impact vehicle use and GHG emissions. Website link: http://arb.ca.gov/cc/sb375/policies/policies.htm

[1] Noland, R.B. and L.L. Lem. (2002). A review of the evidence for induced travel and changes in transportation and environmental policy in the US and the UK. *Transportation Research* D, 7, 1-26. http://bit.ly/1jZbl1E

[2] Noland, R.B. and L.L. Lem. (2002).

[3] Noland, R.B. and L.L. Lem. (2002).

[4] Gorham, R. (2009). Demystifying Induced Travel Demand. Sustainable Urban Transport Document #1. Transport Policy Advisory Services on behalf of the Federal Ministry of Economic Cooperation and Development, Bonn, Germany. http://bit.ly/1MszHfq

[5] Litman, T. (2010). Generated Traffic and Induced Travel: Implications for Transport Planning. Victoria Transport Policy Institute. http://bit.ly/1WXC258

[6] Hansen, M. and Y. Huang. (1997). Road Supply and Traffic in California Urban Areas. Transportation Research A, 31(3), 205-218. http://bit.ly/1ZvLO0k

[7] Duranton, G. and M.A. Turner. (2011). The Fundamental Law of Road Congestion: Evidence from US Cities. American Economic Review, 101, 2616-2652. http://bit.ly/1MszTeD

[8] Hansen and Huang. (1997).

[9] Duranton and Turner. (2011).

[10] Handy, S. (2005). Smart Growth and the Transportation-Land Use Connection: What Does the Research Tell us? International Regional Science Review, 28(2): 1-22. http://bit.ly/1NCeeSP

[11] Handy, S. (2005).

[12] Funderberg, R., H. Nixon, M. Boarnet, and G. Ferguson. (2010). New Highways and Land Use Change: Results From a Quasi-Experimental Research Design. Transportation Research A, 44(2): 76-98. http://bit.ly/1LqYhfD

[13] Cervero, R., J. Kang, and K. Shively. (2009). From Elevated Freeways to Surface Boulevards: Neighborhood and Housing Price Impacts in San Francisco. *Journal of Urbanism*, 2(1), 31-50. http://bit.ly/1LF8eSq

[14] Hajdu, J.C. (1988). Pedestrian Malls in West Germany: Perceptions of their Role and Stages in their Development. *Journal of the American Planning Association*, 54(3). 325-335. http://bit.ly/1LqYnUy

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Consortium members: University of California, Davis; University of California, Riverside; University of Southern California; California State University, Long Beach; Georgia Institute of Technology; and The University of Vermont

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Response to Comment 25:

Thank you for your comment.

Project Segmentation and Need for a Program Level EIR/EIS

Caltrans proposes to rehabilitate the American River Bridge by removing and replacing the existing concrete deck and steel girder post-tensioning systems in spans 1 and 2. The project would also include modifications to the existing soundwall, install sheet piling around piers for scour mitigation, construct concrete catcher blocks, add a Class I bike/pedestrian path and widen the bridge to accommodate traffic during construction.

The widening is necessary to facilitate construction, provide a safe work area for the contractor, maintain traffic flow during construction and to accommodate bike and pedestrian travel. Alternative 1 is the preferred alternative and would widen the bridge an additional 54'-11" on the northbound side of the bridge. Once complete, the bridge will be 151'-6" wide from outside edge-of-deck to edge-of-deck. No additional lanes will be added with this project. Therefore, the technical studies prepared for the environmental document determined that there are no significant impacts to GHG, air quality, or climate change. This bridge project is not dependent on the corridor project and therefore no segmentation is involved.

Alternatives That Should Be Considered

Alternative 1 is the preferred alternative. Alternative 2 and 3 were considered but ultimately rejected. Alternative 1 widens the bridge an additional 54'-11" on the northbound side. Once complete, the bridge will be 151'-6" wide from outside edge-of-deck to edge-of-deck. The widening is necessary to facilitate construction, provide a safe work area for the contractor, maintain traffic flow during construction and to accommodate bike and pedestrian travel.

The removal and replacement of the bridge deck requires temporary shifting of traffic lanes. The existing bridge has minimal inside and outside shoulder widths that can be used for shifting traffic, so any shift of traffic within the existing bridge deck width will not allow the contractor sufficient room to work. Therefore, the bridge must be widened to provide space for safe traffic shifts and allow enough space for the contractor to safely move equipment on and off the bridge and conduct deck removal and replacement operations. Lengthy lane tapers, both on and off the bridge, are also needed to safely shift traffic back to the existing lanes during construction.

Project Is Ill-Defined and Unnecessary

As stated previously, Caltrans proposes to rehabilitate the American River Bridge. This 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.

This project would remove and replace the existing concrete deck and the steel girder post-tensioning systems in spans 1 and 2. Modifications would be made to the existing soundwall, install sheet piling around piers for scour mitigation, construct concrete catcher blocks, add a Class I bike/pedestrian path. 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.

The 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 mitigation

measures incorporated, the project would have less than significant effects to biological resources.

The American River Bridge Deck Replacement project is a rehabilitation project and will not result in the increase of vehicular capacity because no additional lanes will be added with this project. In order to provide any increased lane capacity, lanes would need to be constructed much longer than the 3000' indicated in the current project limits. Therefore, the project will not result in an increase in VMT and VMT analysis is not necessary. As this project will not increase VMT, only a GHG analysis for construction-related impacts was necessary. 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.

The proposed project anticipates temporary short-term air quality impacts; however, these impacts will be reduced with incorporation of the proposed minimization measures. The purpose of this project is to rehabilitate the American River Bridge and the project would not cause an increase in operational emissions. Consequently, operational air quality impacts would not be substantial, and no cumulatively considerable impacts to criteria pollutants and GHG are anticipated.

Alternatives Are Inadequate and Poorly Described

Caltrans proposes to rehabilitate the American River Bridge by removing and replacing the existing concrete deck and steel girder post-tensioning systems in spans 1 and 2. The project would also include modifications to the existing soundwall, install sheet piling around piers for scour mitigation, construct concrete catcher blocks, add a Class I bike/pedestrian path and widen the bridge to accommodate traffic during construction.

A range of alternatives was considered based on the purpose and need for the project which is to rehabilitate the American River Bridge 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. Alternatives 2 and 3 were considered but rejected.

Consideration of mass transit, congestion, geofencing and regional planning are not applicable given that this project does not increase capacity.

Impacts Are Not Properly Characterized

The initial study and supporting technical studies identified no impacts to aesthetics, agriculture and forest resources, energy, geology and soils, mineral resources, population and housing, public services, tribal cultural resources, and wildfire. Less than significant impacts are anticipated for 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. Biological resources will have less than significant impacts with the incorporated mitigation measures.

The purpose and need of this project is to rehabilitate the American River Bridge due to the severity of the transverse and longitudinal deck cracks, concrete spalling, and high corrosive chloride content in the concrete deck surface. Since this project is not a capacity increasing project, other modes of travel as well as impacts to Low Income and Minority populations would not occur.

Baseline Considerations and Project Forecasts

As stated previously, Caltrans proposes to rehabilitate the American River Bridge. This 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 proposed project will not result in the increase of vehicular capacity because no additional lanes will be added with this project. In order to provide any increased lane capacity, lanes would need to be constructed much longer than the 3000' indicated in the current project limits. Therefore, the project will not result in an increase in VMT and VMT analysis is not necessary. As this project will not increase VMT, only a GHG analysis for construction-related impacts was necessary. 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.

The proposed project anticipates temporary short-term air quality impacts; however, these impacts will be reduced with incorporation of the minimization measures. The purpose of this project is to rehabilitate the American River Bridge and the project would not cause an increase in operational emissions. Consequently, operational air quality impacts would not be substantial, and no cumulatively considerable impacts to criteria pollutants and GHG are anticipated.

Additional Considerations

Caltrans has prepared a Section 4(f) Study and will continue to work with Sacramento County Regional Parks and California Exposition and State Fair (Cal Expo) to avoid and minimize impacts to the American River Parkway.

Caltrans has completed Section 7 consultation with California Department of Fish and Wildlife and National Marine Fisheries Service. Caltrans will continue to work with the appropriate agencies and comply with all state and federal laws/regulations.

26. Don Mooney – Law office of Don Mooney, Environmental Council of Sacramento

From: Don Mooney
To: Sandhu, Sandeep@DOT
Subject: American River Bridge Deck Replacement
Date: Friday, December 18, 2020 4:39:48 PM
Attachments: 12-18-20ECOS Comment Letter.pdf

EXTERNAL EMAIL. Links/attachments may not be safe.

Please see attached comments on behalf of Environmental Council of Sacramento

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December 18, 2020

VIA ELECTRONIC MAIL
sandeep.sandhu@dot.ca.gov

Sandeep Sandhu
Environmental Manager M5 Branch
California Department of Transportation
703 B Street
Marysville, CA 95901

Re: American River Bridge Deck Replacement

Dear Mr. Sandhu:

This office represents Environmental Council of Sacramento ("ECOS") regarding Caltrans American River Bridge Deck Replacement ("Project"). ECOS object to the Project and object to the approval of the Mitigated Negative Declaration (MND) for the Project on the grounds that the MND fails to comply with the requirements of the California Environmental Quality Act ("CEQA"), Public Resources Code section 21000 *et seq*.

A. CEQA REQUIRES THE PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT

Approval of the Project, based on a MND instead of an environmental impact report ("EIR") violates CEQA as substantial evidence supports a fair argument that the Project may have potentially significant impacts. CEQA was enacted to ensure environmental protection and encourage governmental transparency. (*Citizens of Goleta Valley v. Bd. of Supervisors* (1990) 52 Cal.3d 553, 564.) CEQA requires full disclosure of a project's significant environmental effects so that decision makers and the public are informed of consequences *before* a project is approved, to ensure that government officials are held accountable for these consequences. (*Laurel Heights Improvement Ass'n of San Francisco v. Regents of the University of California ("Laurel Heights I")* (1988) 47 Cal.3d 376, 392.) In the present case, the MND fails to provide an adequate project description and segments environmental review of other planned improvements and widening of SR 51. Additionally, substantial evidence supports a fair argument that the Project may have potentially significant impacts to GHG and Climate Change.

An agency must prepare an EIR instead of a MND whenever a proposed project may have a significant impact on the environment. (Pub. Resources Code. § 21082.2(d) ["If there is substantial evidence, in light of the whole record before the lead agency, that a project may have a significant effect on the environment, an environmental impact report shall be prepared."]) An agency's decision not to prepare an EIR is judged by the

"fair argument" standard of review. Under this standard, an EIR must be prepared "whenever it can be fairly argued on the basis of substantial evidence that the project *may* have significant environmental impact." (*No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal.3d 68, 75, emphasis added; *Laurel Heights Improvement Assn. v. Regents of University of California* (1993) 6 Cal.4th 1112, 1123.) The County must prepare an EIR instead of an MND if there is any substantial evidence in the record supporting a fair argument that a project may have a significant effect on the environment, even if other substantial evidence supports the opposite conclusion. (Pub. Resources Code, § 21151(a); CEQA Guidelines § 15064(f)(1)-(2); *No Oil, supra,* 13 Cal.3d 68, 75; *Architectural Heritage Ass'n v. County of Monterey* (2004) 122 Cal.App.4th 1095, 1109.) It is the function of an EIR, not a negative declaration, to resolve these conflicting claims. (See *No Oil, supra,* 13 Cal.3d at p. 85.) The fair argument standard is a "low threshold" test for requiring the preparation of an EIR. (*No Oil, supra,* 13 Cal.3d at 84.)

The requirement for an EIR cannot be waived merely because additional studies are required; in fact an agency's lack of investigation "may actually enlarge the scope of fair argument by lending a logical plausibility to a wider range of inferences." (*Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296, 311.) An MND is proper only if project revisions would avoid or mitigate the potentially significant effects "to a point where clearly no significant effect on the environment would occur, and . . . there is no substantial evidence in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment." (Pub. Resources Code §§ 21064.5, 21080(c)(2); *see also Mejia v. City of Los Angeles* (2005) 130 Cal.App.4th 322, 331.)

B. THE MND CONTAINS A LEGALLY INADEQUATE PROJECT DESCRIPTION

An initial study must accurately describe the proposed project. (Guidelines §15071(a).) "An accurate, stable and finite project description is the *sine qua non* of an informative and legally sufficient [CEQA document]." (*County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 193.) CEQA requires a complete project description to ensure that all of the project's environmental impacts are considered. (*City of Santee v. County of San Diego* (1989) 214 Cal.App.3d 1450, 1454.) As stated in *County of Inyo,* "[a] curtailed or distorted project description may stultify the objectives of the reporting process. Only through an accurate view of the project may affected outsiders and public decision-makers balance the proposal's benefit against its environmental cost, consider mitigation measures, assess the advantages of terminating the proposal (*i.e.*, the "no project" alternative) and weigh other alternatives in the balance." (71 Cal.App.3d at 192-193; *see also Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 82 [court found project description inadequate where EIR concealed, ignored, excluded, or simply failed to provide pertinent information" regarding a reasonably foreseeable consequence of the project].) A curtailed, enigmatic or unstable project description draws a red herring across the path of public input." (*San Joaquin*

Raptor Rescue Center v. County of Merced (2007) 149 Cal.App.4th 645, 656; quoting *County of Inyo, supra*, 71 Cal.App.3d at 197-198.)

The Project Description describes three Project Alternatives but fails to identify which alternative is the actual Project and which alternative is specifically addressed in the Initial Study. Thus, the Initial Study's impact analysis is vague and ambiguous as to what has been evaluated.

The Project Description also does not address the whole of the action which is the expansion and widening of SR 51 and widening the American River Bridge. CEQA defines a "project" as "an activity that may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, which constitutes an activity directly undertaken by any public agency." (Pub. Resources Code, § 21065.) The CEQA Guidelines further define a "project" as "the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment" and that is an activity directly undertaken by any public agency activity which is being approved. (CEQA Guidelines, § 15378(a)(1).) "The term project refers to the activity which is being approved and which may be subject to several discretionary approvals by governmental agencies. The term 'project' does not mean each separate governmental approval." (*Id.*, § 15378(c).) The term "approval" refers to a public agency decision that commits the agency to a definite course of action in regard to a project. (*Id.*, § 15352(a).) The definition of "approval" applies to all projects including actions authorized or carried out by a public agency. (*Id.*) Thus, an initial study must consider all phases of project planning, implementation, and operation, including phases planned for future implementation. (CEQA Guidelines, § 15063(a)(1).)

As stated in the Initial Study, "[t]he 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." (IS at 1.) The IS states then states that the SR 51 Corridor Improvements Project is not fully funded and as a result, the environmental review is limited to the expansion of the American River bridge. (*Id.*) What the IS does not state is that on September 18, 2017, Caltrans released a Notice of Preparation of a Draft Environmental Impact Report for the State Route 51/Interstate 80 Business/Capitol City Freeway Improvement Project (EA 03-0H931; SCH Number 2017092052.) (A copy of the NOP is attached as Exhibit A.) The NOP for the Cap City Freeway Improvement Project states that Project consists of replacing the bridge deck of the American River Bridge and widen the bridge to accommodate 3 mixed flows in each direction, one bus/carpool lane in each direction, and one auxiliary lane in each direction, for a total of 10 lanes. (Exhibit A at p. 2.) Thus, the widening of SR 51, including the expansion of

lanes is the whole of the Project. That expansion includes the widening of the American River Bridge that is the subject of the MND.

C. THE MND SEGMENTS ENVIRONMENTAL REVIEW OF THE WHOLE PROJECT

Related to the lack of an adequate project description is the Initial Study's segmentation or piecemealing of environmental review. Caltrans' environmental review of just the American River Bridge deck replacement is a blatant and egregious effort to piecemeal environmental review.

CEQA forbids 'piecemeal' review of the significant environmental impacts of a project." (*Berkeley Keep Jets Over the Bay Com. v. Board of Port Commissioners* (2001) 91 Cal.App.4th 1344, 1358; and *Laurel Heights I, supra,* 47 Cal.3d at 396 ["*Laurel Heights I*"]; and Guidelines § 15165.) When a specific project contemplates future expansion, the lead agency is required to review all phases of the project. (*Laurel Heights I, supra*, 47 Cal.3d at 376; *see also Banning Ranch Conservancy v. City of Newport Beach* (2012) 211 Cal.App.4th 1209, 1224 [improper piecemealing occurs when "the purpose of the reviewed project is to be the first step toward future development"].) This requirement reflects CEQA's broad definition of "project" as "the whole of an action" that may impact the environment. (Guidelines § 15378; and see *Habitat & Watershed Caretakers v. City of Santa Cruz* (2013) 213 Cal.App.4th 1277, 1297.) What constitutes the "whole of an action" is a question of law that courts independently decide. (*Tuolumne County Citizens for Responsible Growth, Inc. v City of Sonora* (2007) 155 Cal.App.4th 1214, 1224. "[T]he requirements of CEQA cannot be avoided by chopping up proposed projects into bite-sized pieces which, when taken individually, may have no significant adverse effect on the environment." (*Id.* at 1222-1223.)

In *Laurel Heights I, supra,* 47 Cal.3d 376, the Supreme Court explained that an agency must analyze the effects of potential future development if such development is: (1) "a reasonably foreseeable consequence of the initial project;" and (2) "will likely change the scope or nature of the initial project or its environmental effects." (*Id.* at 396.) The Project easily meets both parts of the test.

This matter clearly meets the first part of the test under *Laurel Heights I* that the widening and expansion of SR51 is a reasonably foreseeable consequence of the American River Bridge deck replacement, since it is more than just a deck replacement but a widening and expansion of bridge capacity that will facilitate the Cap City Freeway Improvement Project. Again, the MND specifically identifies the segmented environmental review that is at issue in this matter. "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." (IS at 1.) Just because the Cap City Freeway

Improvement project is not fully funded does not mean that it is not a reasonably foreseeable consequence of this Project. The foreseeability is also not speculation as Caltrans released an NOP for the Cap City Freeway Improvement Project and thus is actively preparing a draft environmental impact report for that project, which specifically includes the Project that is the subject of the Initial Study. Again, the NOP specifically states that the Cap City Freeway Improvement Project for consists of replacing the bridge deck of the American River Bridge and widening the bridge to accommodate 3 mixed flows in each direction, one bus/carpool lane in each direction, and one auxiliary lane in each direction, for a total of 10 lanes. (Exhibit A at p. 2.) This Project just removes one of the significant construction portions of the Cap City Freeway Improvement Project. That constitutes piecemealing, which CEQA strictly forbids.

The second part of the test set forth in *Laurel Heights I* is whether the future development "will likely change the scope or nature of the initial project or its environmental effects." As the future development includes the significant expansion of SR 51, including the American River Bridge it will most certainly change the scope and nature of this Project and its environmental effects, especially as set forth in the Initial Study. A recent Caltrans' memorandum confirms that the impacts from the future development will change in scope and nature. In a September 10, 2020 Memorandum from Deputy Directors Ellen Greenberg and Michael D. Keever to Caltrans Executive Board and Caltrans Division Chiefs, the Deputy Directors discussed Caltrans' policy on transportation impact analysis and CEQA significance determinations for projects on the state highway system. The Memo states:

> Capacity-increasing projects will require VMT analysis to determine whether significant, adverse transportation impacts are anticipated. The potential for projects to induce additional travel will be the basis for determinations of significance.[1]

It is without dispute that the Initial Study did not include a VMT analysis and that an expansion project such as the Cap City Freeway Improvement Project requires a VMT analysis. (*See* CEQA Guidelines, § 15064.3) Thus, the widening of SR 51 will change the scope and nature of this Project, as well as its environmental effects, particularly with respect to VMT. As such, the Caltrans' Initial Study for this Project unlawfully attempts to segment environmental from the larger Cap City Freeway Improvement Project.

D. THE MND FAILS TO ADDRESS CUMULATIVE IMPACTS ASSOCIATED WITH THE CAPITOL CITY FREEWAY IMPROVEMENT PROJECT

The MND fails to comply with the requirements of CEQA in that it fails to adequately disclose, analyze and/or mitigate the Project's cumulative environmental

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[1] A copy of the September 10, 2020 Memorandum along with additional memoranda from Caltrans are attached as Exhibit C to this letter.

impacts as required by law. CEQA requires an EIR to discuss a project's significant cumulative effect on the environment in conjunction with other closely related past, present and reasonably foreseeable probable future projects. (Pub. Resources Code, § 21083(b); CEQA Guidelines, §§ 15130(b)(1)(A), 15355.) The term "'[c]umulative impacts' refer[s] to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." (CEQA Guidelines, § 15355.) An EIR must discuss if the "cumulative impact may be significant and the project's incremental effect, though individually limited, is cumulatively considerable." (*Id.*, § 15064(h)(1).) "'Cumulatively considerable' means that the incremental effects of past projects, the effects of other current projects, and the effects of probable future projects." (*Id.*)

The court in *Las Virgenes Homeowners Federation, Inc. v. County of Los Angeles* (1986) 177 Cal.App.3d 300, 306, explained the importance of the cumulative effect analysis:

> The purpose of this requirement is obvious: consideration of the effects of a project or projects as if no others existed would encourage the piecemeal approval of several projects that, taken together, could overwhelm the natural environment and disastrously overburden the man-made infrastructure and vital community services. This would effectively defeat CEQA's mandate to review the actual effect of the projects upon the environment.

As the court stated in *Communities for a Better Environment v. Cal. Resources Agency* (2002) 103 Cal.App.4th 98, 114:

> Cumulative impact analysis is necessary because the full environmental impact of a proposed project cannot be gauged in a vacuum. One of the most important environmental lessons that has been learned is that environmental damage often occurs incrementally from a variety of small sources. These sources *appear insignificant when considered individually*, but assume threatening dimensions when considered collectively with other sources with which they interact. (Emphasis added.)

A legally adequate "cumulative impacts analysis" views a particular project over time and in conjunction with other related past, present, and reasonably foreseeable probable future projects whose impacts might compound or interrelate with those of the project at hand. "Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time." (CEQA Guidelines, § 15355(b); *see Communities for a Better Environment supra*, 103 Cal.App.4th at 117, {"The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects.."}.)

As with the piecemealing argument above, the NOP for the Capitol City Freeway Improvement Project identifies a reasonably foreseeable probable future project that is not only related to this Project, but includes this Project. Moreover, Caltrans is in the process of preparing a draft environmental impact report for that project. The NOP identifies numerous temporary and permanent environmental effects such aesthetics, air quality, biological resources, cultural resources, land use planning, recreation; and transportation/traffic.[2] Thus, Caltrans' failure to includes a cumulative impacts analysis violates CEQA.

E. THE MND FAILS TO ADDRESS THE PROJECT'S IMPACTS TO GHG AND CLIMATE CHANGE.

1. The MND Fails to Adequately Address and Analyze GHG Emissions from Construction

The Initial Study's discussion of construction impacts to climate change fails to address emissions associated with the use of substantial quantities of concrete. Concrete production contributes 8 percent of global GHG.[3] While the Initial Study clearly states the construction includes the use of concrete, the Initial Study makes no effort to quantify or analyze the amount of GHG emissions associated with the use of concrete. (See IS at 77-85.) The Initial Study references GHG emissions from material processing, but does not state if that includes GHG emissions from the concrete. Table 3 provides estimates of GHG Emissions during construction, but provides no breakdown of the source of the emissions. (IS, Table 3 at 86.) Thus, it is unclear what constitutes the source of the GHG emissions.

The MND also does not identify any threshold of significance for GHG emissions, yet it makes a conclusion that the Projection's construction impacts are less than significant. It is unclear how that conclusion can be reached without any quantification of the supposed reduction of GHG during construction and without any standards to apply. (CEQA Guidelines, 15064(b)(1); *Cleveland National Forest Foundation v. San Diego Association of Governments* (2017) 3 Cal.5th 497, 515 [lead agency's choice of thresholds of significance must be "based to the extent possible on scientific and factual data."].) The selection of threshold of significance must also be based upon substantial evidence. (*Mission Bay Alliance v. Office of Community Inv. & Infrastructure* (2016) 6 Cal.App.5th 160, 206.)

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[2] The NOP does not indicate that the environmental review will include a VMT analysis as required by CEQA Guidelines and Caltrans' own guidance memoranda.

[3] Kerlin, Kat, Concrete Solutions That Lower Both Emissions and Air Pollution, UC Davis (March 23, 2020). (A copy is attached as Exhibit B.)

In the present matter, Caltrans makes a significance determination without any standard of significance and without any substantial evidence that the impact would be less than significant. The Initial Study concludes that "With implementation of construction GHG-reduction measures, the impact would be less than significant." (IS at 87.) The Initial Study simply cannot make this statement without having quantified the reduction in GHG emissions and then applying that to a standard that Caltrans has failed to identify. It amounts to mere speculation and not based upon substantial evidence. "Under CEQA, 'substantial evidence' is 'enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached.' [Citation.] ... Substantial evidence includes facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts. [Citations.] I t does not include '[a]rgument, speculation, unsubstantiated opinion or narrative, [or] evidence which is clearly inaccurate or erroneous....' [Citations.]" (*North Coast Rivers Alliance v. Kawamura* (2015) 243 Cal.App.4th 647, 673.) The Initial Study's conclusions regarding construction impacts is nothing more than speculation that is not supported by substantial evidence.

The Initial Study also provides for the implementation of measures to reduce GHG emissions from construction activities, such as compliance with emission reduction regulations mandated by the California Air Resources Board. (IS at 87.) But the Initial Study makes no effort to identify or disclose the activities required to reduce the emissions or to quantify the reductions in emissions from those activities.

Finally, although the Initial Study specifically states that it is the implementation of the reduction measures that makes the impact less than significant, the MND does not include them or require them as mitigation measures. (See Pub. Resources Code, § 21080(c); CEQA Guidelines, §§ 15070(b)(1); 15071(e).)

2. The MND Fails to Disclose and Analyze VMT Associated with Expanded Highway Capacity

The Initial Study also does not include any discussion regarding VMT and simply concludes that the project will not result in any increase in operational GHG emissions. (IS at 87.) This is based upon the false assumption the Project will not increase traffic capacity. The Initial Study also ignores that is reasonably foreseeable that the Project will result in widening the American River Bridge and adjacent portions of SR 51. It has been well documented through numerous studies that increased highway capacity can lead to increased VMT.[4]

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4 Handy, Susan and Boarnet, Marlon G. (September 30, 2014) Impact of Highway Capacity and Induced Travel on Passenger Vehicle use and Greenhouse Gas Emissions, Policy Brief. *California Environmental Protection Agency, Air Resources Board*. (A copy of the Policy Brief is attached as Exhibit D.)

Based upon the foregoing, CEQA mandates that Caltrans withdraw the Initial Study and proposed Mitigated Negative Declaration for the American River Bridge.

Sincerely,

Donald B. Mooney
Attorney for Environmental Council of Sacramento

cc: Clients

EXHIBIT A

EXHIBIT A

SCH NO. _____

NOTICE OF PREPARATION

To: Responsible/Trustee Agency

From: California Dept. of Transportation
703 B Street
Marysville, CA 95901

Subject: **Notice of Preparation of a Draft Environmental Impact Report**
Reference: California Code of Regulations, Title 14, (CEQA Guidelines) Sections 15082(a), 15103, 15375.

Project Title: State Route 51/Interstate 80 Business/Capital City Freeway Improvements Project (EA: 03-0H931).

Project Location: The proposed project is located on State Route 51/Interstate 80 Business/Capital City Freeway (SR 51/CapCity) between post miles (PM) 1.0 to 4.4 in Sacramento County, California. The project limits consist of SR 51/CapCity from J Street (PM 1.0) to Arden Way (PM 4.4). The total project length is approximately 3.4 miles.

Project Description: The California Department of Transportation (Caltrans), in cooperation with the City of Sacramento, Sacramento Area Council of Governments, Sacramento County, Sacramento Regional Transit, and Sacramento Transportation Authority proposes to make improvements on SR 51/CapCity between PM 1.0 to 4.4 in Sacramento County. The proposed project would widen the existing roadway, extend the existing bus/carpool lanes, construct auxiliary lanes, improve intelligent transportation system elements, construct a new Class I bike path on the American River Bridge, and widen or replace existing structures within the project limits.

This is to inform you that the California Department of Transportation will be the lead agency and will prepare an environmental impact report for the project described below. Your participation as a responsible agency is requested in the preparation and review of this document.

We need to know the views of your agency as to the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the project.

A more detailed project description, location map, and the potential environmental effects are contained in the attached materials.

A copy of the Initial Study is not attached.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please direct your response to Dotrik Wilson Telephone (530) 741-4491 at the address shown above. Please supply us with the name for a contact person in your agency.

Date 9/18/17

Signature Suzanne Melin
Title Supervising Environmental Planner

Notice of Preparation

Project Title

State Route 51/Interstate 80 Business/Capital City Freeway Improvements Project (EA: 03-0H931).

Project Location

The proposed project is located on State Route 51/Interstate 80 Business/Capital City Freeway (SR 51/CapCity) between post miles (PM) 1.0 to 4.4 in Sacramento County, California. The project limits consist of SR 51/CapCity from J Street (post mile 1.0) to Arden Way (post mile 4.4). The total project length is approximately 3.4 miles.

Project Background

SR 51/CapCity is the most congested corridor in the region. In 2016, SR 51/CapCity experienced over 2,050,000 vehicle hours of delay at a $27.5 million cost to users and had five of the region's top 10 bottlenecks. As the region continues to grow, conditions in the SR 51/CapCity Corridor are expected to worsen.

SR 51/CapCity begins at the State Route 51/U.S. 50/State Route 99 interchange and continues to the State Route 51/Interstate 80 junction all within the City and County of Sacramento. SR 51/CapCity serves multiple communities in Sacramento County, in particular, the City of Sacramento and communities of Arden-Arcade, Fair Oaks, McClellan, North Highlands, and Carmichael. It also provides connectivity to local roads, transit, rail, State Route 99, State Route 160, U.S. 50, and Interstate 80 via local roads and freeways. SR 51/CapCity is designated as a freeway and is included in the National Highway System and Strategic Highway Network. It is also a part of the Surface Transportation Assistance Act (STAA) National Network, which permits larger trucks to traverse the route. SR 51/CapCity provides one of the few American River crossings in the Sacramento urban core, which is a main reason it is a heavily traveled facility and experiences significant congestion.

In 2013, the California Department of Transportation District 3 released the State Route 51 Preliminary Investigation (SR 51 PI). The SR 51 PI addressed the need for operational and capacity improvements for the entire segment of SR 51/CapCity in the City of Sacramento. The SR 51 PI Project Development Team (PDT) was composed of representatives from the California Department of Transportation District 3 departments of Planning, Right of Way, Environmental, and Traffic Operations, as well as the City of Sacramento, Sacramento Regional Transit District, and the Sacramento Area Council of Governments. The PDT participated in a series of meetings where they identified the scope, desired outcomes, resource needs, and a candidate list of improvements to SR 51/CapCity. Once the candidate improvement projects were identified, they were analyzed to identify their incremental contribution toward corridor mobility and prioritized based on the results of the individual and aggregated analyses. Projects proposed in the final SR 51 PI include ramp meters, intelligent transportation system upgrades, auxiliary lanes, bus/carpool lanes, and widening of the American River Bridge. Aspects of the Caltrans Smart Mobility Framework were utilized in development of the proposed project.

Project Description

The California Department of Transportation (Caltrans), in cooperation with the City of Sacramento, Sacramento Area Council of Governments, Sacramento County, Sacramento Regional Transit, and

Sacramento Transportation Authority proposes to make improvements on SR 51/CapCity between PM 1.0 to 4.4 in Sacramento County. The proposed project would widen the existing roadway, extend the existing bus/carpool lanes, construct auxiliary lanes, improve intelligent transportation system elements, construct a new Class I bike path on the American River Bridge, and widen or replace existing structures within the project limits.

Purpose and Need

SR 51/CapCity experiences high travel demand, especially during peak commute periods. This has created severe traffic congestion and impaired mobility along the route. At various locations, travel demand has exceeded highway design capacity, resulting in bottlenecks. These bottlenecks have been created by multiple factors, including high traffic volumes, short weaving and merging areas, lane drops, limited sight distances, inadequate intelligent transportation system (ITS) elements, and incomplete bus/carpool and auxiliary lane networks. Heavy congestion and stop-and-go traffic have contributed to increased vehicle emissions, increased travel costs, and reduced travel time reliability.

The purpose of the proposed project is to:

- Relieve current traffic congestion to improve traffic flow, mobility, and travel time reliability while at the same time reducing vehicle emissions and travel costs.
- Provide a transportation facility that functions for all users including bicyclists, pedestrians, local transit services, and freight.

The proposed project is needed for the following reasons:

- Recurring travel demand has exceeded the current design capacity of the highway resulting in severe traffic congestion and impaired mobility.
- The transportation network does not include adequate facilities for all modes of transportation.

Project Alternatives

Alternative 1- Widen Existing Roadway

This alternative includes the following elements:

- Widen SR 51/CapCity and American River Bridge to accommodate 3 mixed flow lanes in each direction, one bus/carpool lane in each direction, and one auxiliary lane in each direction.
- Replace bridge deck of American River Bridge and construct new Class I bike path on American River Bridge to provide a north-south connection for bicyclists and pedestrians between the City of Sacramento street network, the American River Bike Trail, and adjacent neighborhoods.
- Widen Cal Expo Undercrossing to accommodate 3 mixed flow lanes in each direction, one bus/carpool lane in each direction, and one auxiliary lane in each direction.
- Construct 15-foot wide shoulder in each direction from E Street to Exposition Boulevard for part-time bus/public transit use and to increase safety.
- Retrofit and widen both State Route 51/160 Separation structures to accommodate one bus/carpool lane in each direction.
- Construct new high occupancy vehicle flyover structure at Arden Way.
- Replace several overhead structures, including B Street Underpass, A Street Overcrossing, and Elvas Underpass.

- Construct new retaining wall in front of the Exposition Boulevard Overcrossing.
- Install intelligent transportation system (ITS) elements at various locations.
- Provide bike and pedestrian accessibility at on-ramp and off-ramp terminations, including upgraded sidewalks, crosswalks, signing, and lighting.
- Remove vegetation and trees to accommodate widening of SR 51/CapCity.

Alternative 2- Widen Existing Roadway with Curve Realignment

This alternative includes the following elements:

- Widen and realign SR 51/CapCity north of its existing alignment with a structure that spans the Sutter's Landing Regional Park, from just east of E Street to just west of Exposition Boulevard. The new alignment will accommodate 3 mixed flow lanes in each direction, one bus/carpool lane in each direction, and one auxiliary lane in each direction.
- Construct new Class I bike path on American River Bridge to provide a north-south connection for bicyclists and pedestrians between the City of Sacramento street network, the American River Bike Trail, and adjacent neighborhoods.
- Widen Cal Expo Undercrossing to accommodate 3 mixed flow lanes in each direction, one bus/carpool lane in each direction, and one auxiliary lane in each direction.
- Construct 15-foot wide shoulder in each direction from E Street to Exposition Boulevard for part-time bus/public transit use and to increase safety.
- Retrofit and widen both State Route 51/160 Separation structures to accommodate one bus/carpool lane in each direction.
- Construct new high occupancy vehicle flyover structure at Arden Way.
- Replace several overhead structures, including B Street Underpass, A Street Overcrossing, and Elvas Underpass.
- Construct new retaining wall in front of the Exposition Boulevard Overcrossing.
- Install intelligent transportation system (ITS) elements at various locations.
- Provide bike and pedestrian accessibility at on-ramp and off-ramp terminations, including upgraded sidewalks, crosswalks, signing, and lighting.
- Remove vegetation and trees to accommodate widening of SR 51/CapCity.

Alternative 3- Widen Existing Roadway and Repurpose Lanes

This alternative includes the following elements.

- Widen SR 51/CapCity to accommodate one auxiliary lane in each direction.
- Convert one existing mixed flow lane to a managed lane (reversible lane, high occupancy vehicle lane, express toll lane, or high occupancy toll lane).
- Replace bridge deck of American River Bridge and construct new Class I bike path on American River Bridge to provide a north-south connection for bicyclists and pedestrians between the City of Sacramento street network, the American River Bike Trail, and adjacent neighborhoods.
- Construct 15-foot wide shoulder in each direction from E Street to Exposition Boulevard for part-time bus/public transit use and to increase safety.
- Install intelligent transportation system (ITS) elements at various locations.
- Provide bike and pedestrian accessibility at on-ramp and off-ramp terminations, including upgraded sidewalks, crosswalks, signing, and lighting.

Alternative 4- Repurpose Lanes

This alternative includes the following elements.

- Convert one existing mixed flow lane to a managed lane (reversible lane, high occupancy vehicle lane, express toll lane, or high occupancy toll lane).
- Replace bridge deck of American River Bridge and construct new Class I bike path on American River Bridge to provide a north-south connection for bicyclists and pedestrians between the City of Sacramento street network, the American River Bike Trail, and adjacent neighborhoods.
- Install intelligent transportation system (ITS) elements at various locations.
- Provide bike and pedestrian accessibility at on-ramp and off-ramp terminations, including upgraded sidewalks, crosswalks, signing, and lighting.

Reversible lanes, high occupancy vehicle lanes, express toll lanes, and high occupancy toll lanes are being considered for all Alternatives.

Probable Environmental Effects

The proposed project is expected to result in temporary and permanent environmental effects. The draft Environmental Impact Report/Environmental Assessment will determine what resources would be affected, the level of significance, and feasible measures to reduce impacts. Probable environmental effects of the proposed project are outlined below.

Aesthetics

The proposed project could: (1) substantially degrade the existing visual character or quality of the site and its surroundings, and (2) create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Agriculture and Forestry

No impacts anticipated.

Air Quality

The proposed project could: (1) conflict with or obstruct implementation of an applicable air quality plan, (2) violate air quality standards or contribute substantially to an existing or projected air quality violation, (3) result in a cumulatively considerable net increase of a criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors), (4) expose sensitive receptors to substantial pollutant concentrations, and (5) create objectionable odors affecting a substantial number of people.

Biological Resources

The proposed project could: (1) have a substantial adverse effect, either directly or through habitat modifications, on a species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service, (2) 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 Game or US Fish and Wildlife Service, (3) have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through

direct removal, filling, hydrological interruption, or other means, (4) 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, (5) conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, and (6) conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Cultural Resources

The proposed project could: (1) cause a substantial adverse change in the significance of a historical resource as defined in §15064.5, (2) cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5, (3) directly or indirectly destroy a unique paleontological resource or site or unique geologic feature, and (4) disturb human remains, including those interred outside of dedicated cemeteries.

Geology/Soils

No impacts anticipated.

Hazards/Hazardous Materials

The proposed project could: (1) create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, (2) 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, (3) emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school, and (4) 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.

Hydrology/Water Quality

The proposed project could: (1) violate any water quality standards or waste discharge requirements, (2) create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff, (3) otherwise substantially degrade water quality, and (4) place within a 100-year flood hazard area structures which would impede or redirect flood flows.

Land Use/Planning

The proposed project could: (1) conflict with an applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect, and (2) conflict with an applicable habitat conservation plan or natural community conservation plan.

Mineral Resources

No impacts anticipated.

Noise

The proposed project could result in: (1) exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies,

(2) exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels, (3) a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project, and (4) a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Population/Housing
No impacts anticipated.

Public Services
No impacts anticipated.

Recreation
The proposed project could include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment; however, a net benefit is anticipated.

Transportation/Traffic
The proposed project could: (1) result in inadequate emergency access, and (2) conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Tribal Cultural Resources
The proposed project could cause a substantial adverse change in the significance of a tribal cultural resource that is: (1) 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 (2) 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.

Utilities and Service Systems
The proposed project could require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Scoping Meeting
A scoping meeting is scheduled for October 5, 2017 from 3 p.m. to 7 p.m. in the Cal Expo Administration Building at 1600 Exposition Boulevard, Sacramento, CA 95815 to provide information about the proposed project. The meeting will include maps and informational displays. Comments are welcomed and encouraged.

Additional information about the proposed project be found at **http://www.capcitycorridor.org**.

Comment

Appendix A

Title Sheets

Location and Vicinity Maps

Distribution List

INDEX OF PLANS

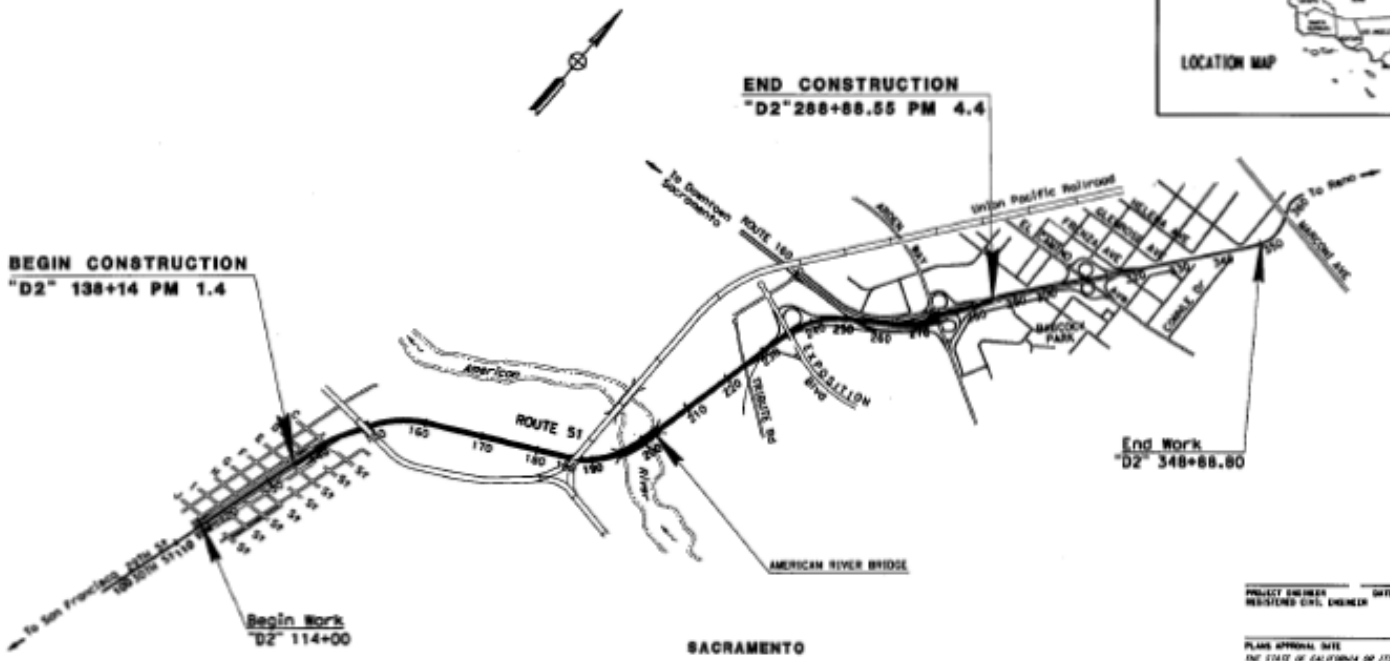
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY

IN SACRAMENTO COUNTY
IN SACRAMENTO FROM E STREET UNDERCROSSING
TO 0.4 MILE NORTH OF ARDEN WAY UNDERCROSSING

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2015

DIST	COUNTY	ROUTE	POST MILES (STATE HIGHWAY)	SHEET NO.	TOTAL SHEETS
03	Sac	51	1.0/4.4		



PROJECT ENGINEER
REGISTERED CIVIL ENGINEER
DATE

PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF CHANGED ASPECT OF THIS PLAN SHEET.

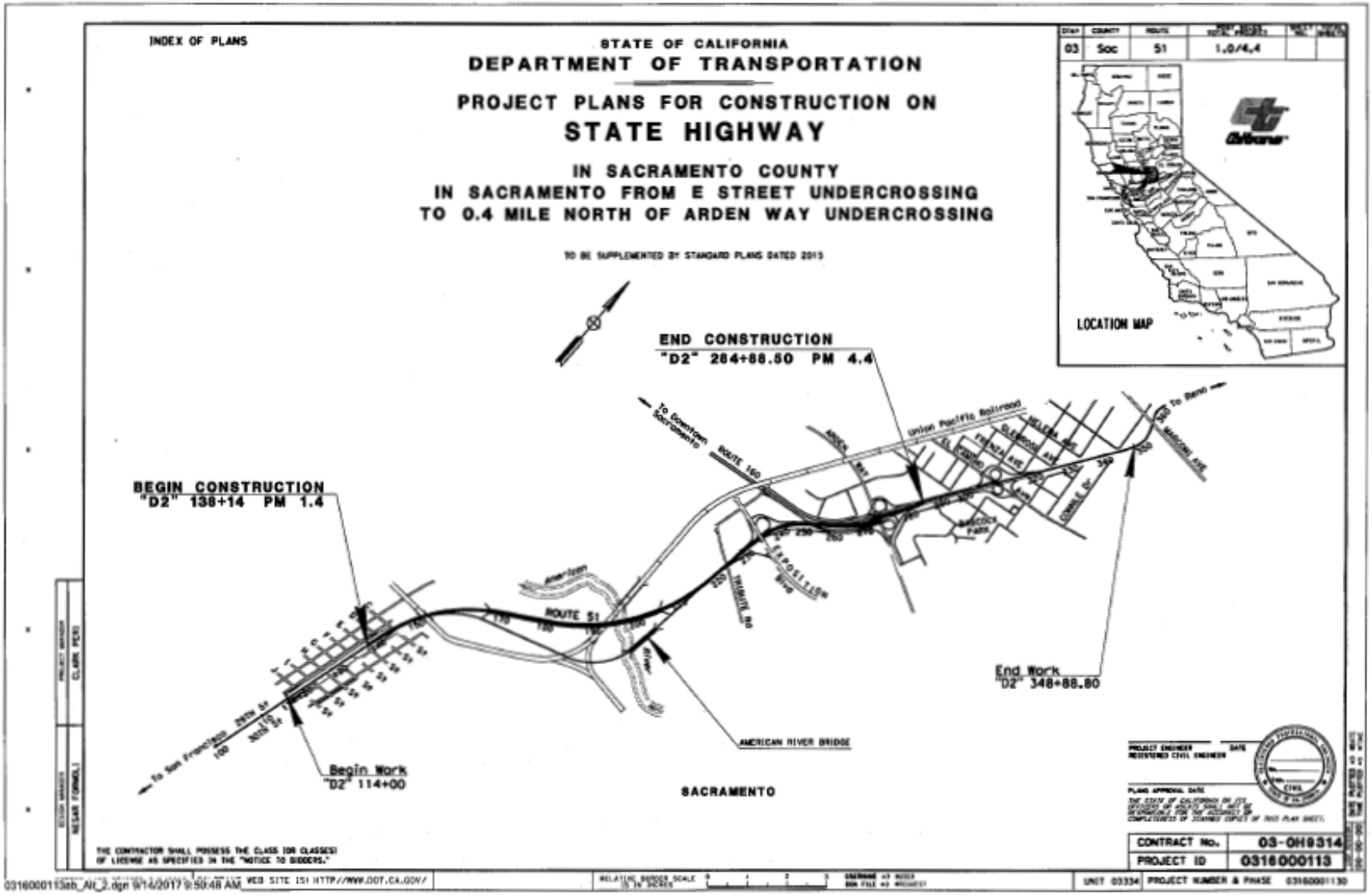
THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

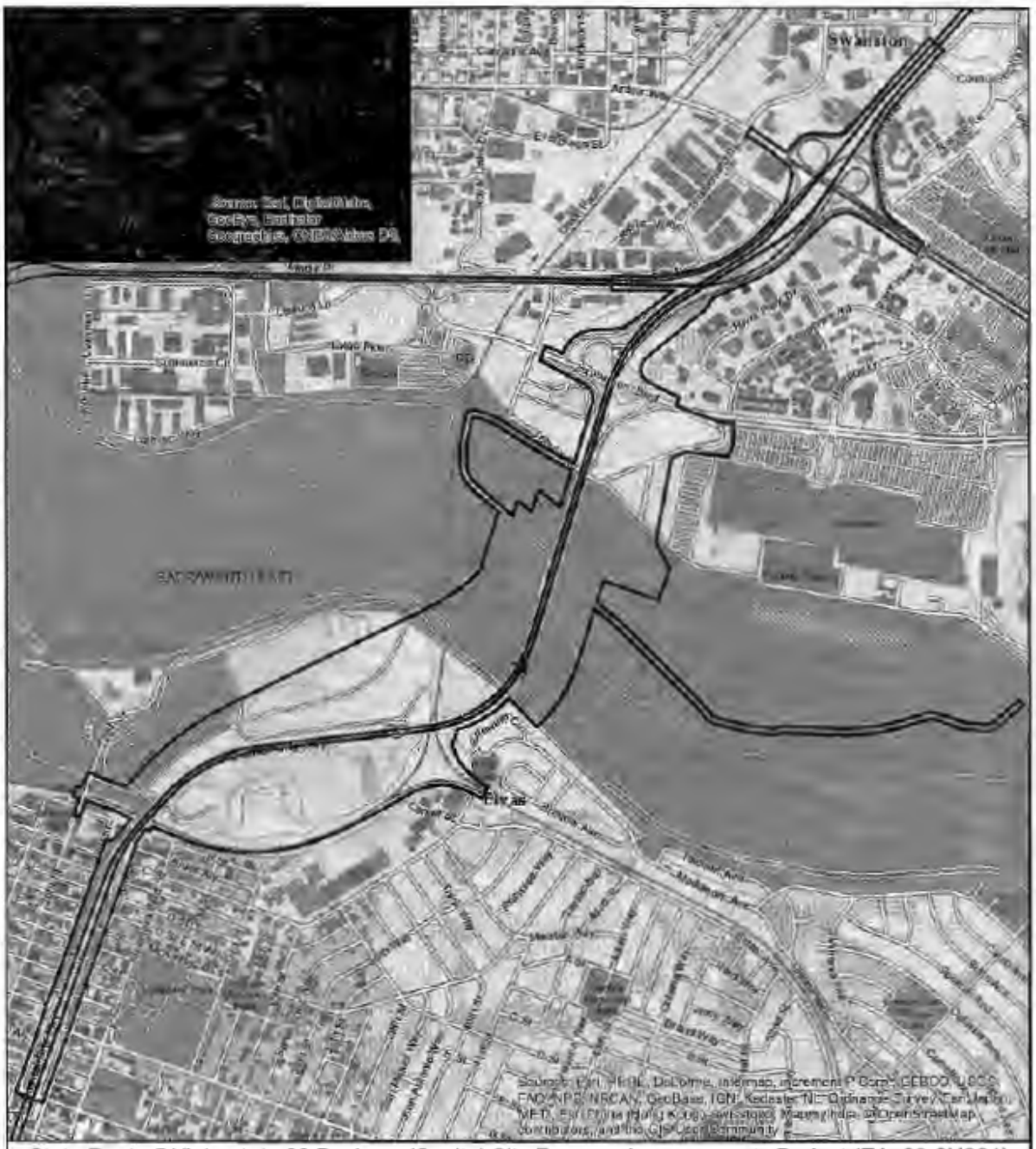
CONTRACT No.	03-0H9314
PROJECT ID	0316000113

PROJECT MANAGER: CLARK PEER
DESIGN MANAGER: HELAIR FORNELL

PLOT SCALE: 1:1
PLOT DATE: 09-30-00
PLOTTED BY: ROUTE
TIME PLOTTED: 2:47PM

0316000113alb_Alt_1.dgn 9/14/2017 9:45:28 AM WEB SITE ISI HTTP://WWW.DOT.CA.GOV/ RELATIVE BORDER SCALE TO 1M INCHES 0 1 2 3 USERNAME =0 MADES DGN FILE =0 MKIMAST UNIT 03334 PROJECT NUMBER & PHASE 0316000113 30


INDEX OF PLANS
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN SACRAMENTO COUNTY
IN SACRAMENTO FROM E STREET UNDERCROSSING
TO 0.4 MILE NORTH OF ARDEN WAY UNDERCROSSING
TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2015
03 Sac 51 1.0/4.4
LOCATION MAP
END CONSTRUCTION
"D2" 284+88.50 PM 4.4
BEGIN CONSTRUCTION
"D2" 138+14 PM 1.4
To Downtown Sacramento
ROUTE 160
Union Pacific Railroad
To Reno
ROUTE 51
American River
AMERICAN RIVER BRIDGE
End Work
"D2" 348+88.80
Begin Work
"D2" 114+00
To San Francisco
SACRAMENTO
THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."
CONTRACT No. 03-0H9314
PROJECT ID 0316000113
UNIT 03334
PROJECT NUMBER & PHASE 0316000113



State Route 51/Interstate 80 Business/Capital City Freeway Improvements Project (EA: 03-0H931)
Location and Vicinity Map

Legend

- Environmental Study Limits
- State Route 51/CapCity
- State Route 160
- ★ American River Bridge
- Quad Index

0 0.5 1 Miles

N

Caltrans

Distribution List

State Agencies

California Air Resources Board
California Department of Boating and Waterways
California Department of Conservation
California Department of Corrections
California Department of Education
California Department of Fish & Game Wildlife Region 2
California Department of Food & Agriculture
California Department of Forestry and Fire Protection
California Department of General Services
California Department of Housing & Community Development
California Department of Parks & Recreation
California Department of Pesticide Regulation
California Department of Resources Recycling and Recovery
California Department of Toxic Substances Control
California Department of Water Resources
California Emergency Management Agency
California Energy Commission
California Environmental Protection Agency
California Exposition & State Fair
California Health and Human Services
California Highway Patrol (Valley Division)
California Native American Heritage Commission
California Natural Resources Agency
California Office of Historic Preservation
California Office of Public School Construction
California Public Utilities Commission
California State Lands Commission
California State Transportation Agency
Central Valley Flood Protection Board
Central Valley Regional Water Quality Control Board
Delta Protection Commission
State Water Resources Control Board

Federal Agencies

Bureau of Reclamation
Federal Emergency Management Agency
National Marine Fisheries Service
National Park Service
Natural Resources Conservation Service

United States Army Corps of Engineers
United States Coast Guard
United States Environmental Protection Agency
United States Fish and Wildlife Service

Local Government
City of Sacramento City Clerk
Sacramento County Clerk/Recorder

EXHIBIT B

EXHIBIT B

Science

&

Impacts

Solutions

What Can I Do?

UCDAVIS

Concrete Solutions That Lower Both Emissions and Air Pollution

Air Quality and Climate Change Intertwine in Unexpected Ways. A Concrete Example.

by Kat Kerlin | Mar 23, 2020

featured image by UC Davis

Sometimes, fixing one problem can create another.

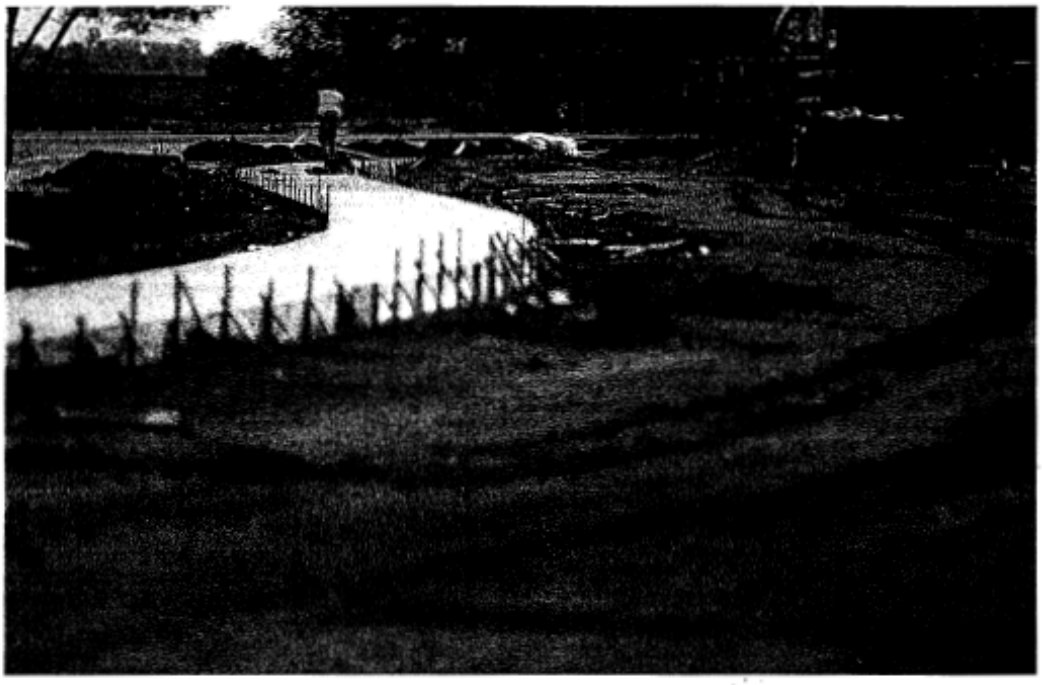
Concrete production contributes 8 percent of global greenhouse gases, and demand continues to rise as populations and incomes grow. Yet some commonly discussed strategies to reduce the sector's global GHG emissions could, under some scenarios, increase local air pollution and related health damages, according to a study from the University of California, Davis.

For the study, published today in the journal Nature Climate Change, scientists quantified the costs of climate change impacts and of death and illness from air

pollution. They found that concrete production causes about $335 billion per year in damages, a large fraction of the industry value.

The scientists also compared several GHG-reduction strategies to determine which are most likely to lower both global emissions and local air pollution related to concrete production. They found that a variety of available methods could, together, reduce climate and health damage costs by 44 percent.

"There is a high emissions burden associated with the production of concrete because there is so much demand for it," said lead author Sabbie Miller, an assistant professor in the UC Davis Department of Civil and Environmental Engineering. "We clearly care a great deal about greenhouse gas emissions. But we haven't paid as much attention to health burdens, which are also are driven in large part by this demand."



As populations and incomes grow, so does the demand for buildings, roads and concrete. (UC Davis)

Assessing the damage

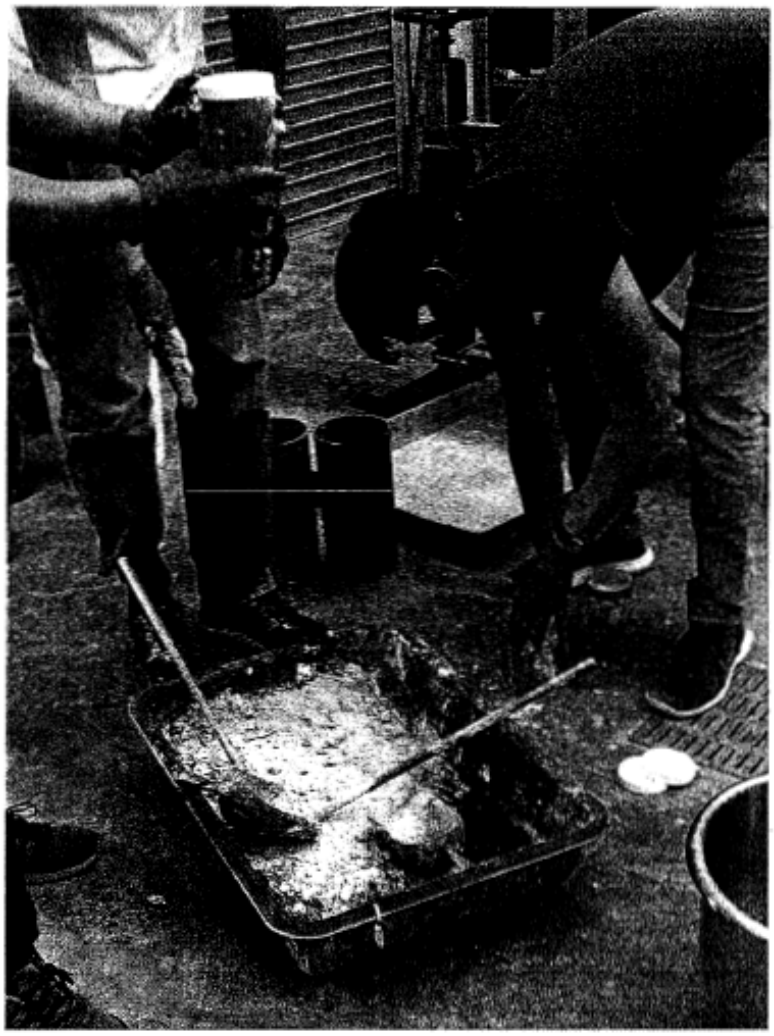
Among the most effective strategies include using cleaner-burning kiln fuel, more renewable energy and replacing a portion of the cement used in production with lower-carbon alternative materials.

While carbon capture and storage technologies could reduce GHG emissions from concrete production by up to 28 percent, the study found it could actually increase human health impacts from air pollutants unless the technology itself is powered by clean energy. It's also not currently

widely implementable.

"Air pollution and climate change problems are really intertwined when we talk about solutions," said co-author Frances Moore, an assistant professor with the UC Davis Department of Environmental Science and Policy. "This paper takes these two problems and their joint nature seriously. It shows how different solutions have different effects for global climate change and local air pollution, which may matter a lot for policymakers."

Cement production is responsible for about half of the total climate (32 percent) and health (18 percent) damages of making concrete. That is followed by aggregate production, which is responsible for 34 percent of health damages and 4 percent in climate damages.



UC Davis students batch concrete as part of engineering studies. (Courtesy Sabbie Miller/UC Davis)

Mixing concrete, or batching, contributes little to climate damages but represents 11 percent of health damages.

To reduce these impacts, the authors evaluated eight GHG reduction strategies and presented the options in ways policymakers can consider

EXHIBIT C

EXHIBIT C

State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

Memorandum

To: CALTRANS EXECUTIVE BOARD
CALTRANS DIVISION CHIEFS

Date: September 10, 2020

From: ELLEN GREENBERG *Ellen Greenberg*
Deputy Director
Sustainability

MICHAEL D. KEEVER *Michael D. Keever*
Deputy Director
Project Delivery

Subject: CALTRANS POLICY ON TRANSPORTATION IMPACT ANALYSIS AND CEQA SIGNIFICANCE DETERMINATIONS FOR PROJECTS ON THE STATE HIGHWAY SYSTEM

Purpose
The purpose of this memorandum is to communicate the California Department of Transportation (Caltrans) policy regarding analysis of transportation impacts under the California Environmental Quality Act (CEQA) for projects on the State Highway System (SHS). The Department documents *Transportation Analysis Framework* (TAF), and *Transportation Analysis under CEQA* (TAC) guide implementation of the policy. The policy and guidance implement Senate Bill (SB) 743 (Steinberg, 2013) codified at Public Resources Code (PRC) section 21099.

Caltrans Policy on Transportation Impact Analysis and CEQA Significance Determinations for Projects on the State Highway System
Consistent with the language of Section 15064.3 of the CEQA Guidelines, Caltrans concurs that Vehicle Miles Traveled (VMT) is the most appropriate measure of transportation impacts under CEQA. The determination of significance of a VMT impact will require a supporting induced travel analysis for capacity-increasing transportation projects on the SHS when Caltrans is lead agency or when another entity acts as the lead agency.

Discussion
Capacity-increasing projects will require VMT analysis to determine whether significant, adverse transportation impacts are anticipated. The potential for projects to induce additional travel will be the basis for determinations of significance. VMT analysis methods include use of elasticity-based calculators, regional travel demand models, and use of the Statewide Travel Demand Model. Methods used should reflect the potential for capacity additions to induce vehicle travel. Caltrans' *Transportation Analysis Framework* (TAF) provides guidance for selection of appropriate methodologies.

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

Many types of projects will be largely unaffected by the use of VMT as a measure of transportation impacts because they are assumed to not lead to a measurable and substantial increase in vehicle travel. Caltrans *Transportation Analysis Under CEQA* (TAC) provides detail.

Note that for transportation projects not on the SHS, local agencies have the discretion to select a different measure of transportation impact consistent with CEQA and other applicable requirements.

Policy Implementation: Timing
All projects on the SHS that reach Caltrans' Milestone 020 ("Begin Environmental") on or after September 15, 2020, will include a VMT-based transportation impact significance determination in the draft environmental document.

For projects initiated on or after December 28, 2018 which have reached or will reach Caltrans' Milestone 020 ("Begin Environmental") before September 15, 2020, the April 13, 2020 Implementation Timing Memorandum (*VMT CEQA Significance Determinations for State Highway System Projects Implementation Timeline Memorandum*) should be consulted. An updated version of the April 13, 2020 memo is provided as an attachment to this file.

As of the date of this memo, many of the projects that reached Milestone M020 between December 28, 2018 and September 15, 2020 have already documented whether a VMT-based significance determination will be required pursuant to a process identified within a May 8, 2020 memo entitled "*Vehicle Miles Traveled (VMT) California Environmental Quality Act (CEQA) Determinations*" and an update to that memo issued July 15, 2020.

Other Resources Analyzed Under CEQA; NEPA Analysis
The guidance in the TAF and TAC does not supersede guidance for analysis of other resources under CEQA (such as air quality or noise) or under the National Environmental Policy Act (NEPA). Those analyses have their own distinct requirements.

Attachments:
1. VMT CEQA SIGNIFICANCE DETERMINATIONS FOR STATE HIGHWAY SYSTEM PROJECTS: IMPLEMENTATION TIMELINE MEMORANDUM UPDATE
2. VEHICLES MILES TRAVELED (VMT) CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) DETERMINATIONS
3. VEHICLES MILES TRAVELED (VMT) CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) DETERMINATIONS – UPDATE

State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

Memorandum

To: TRANSPORTATION STAKEHOLDERS

Date: April 13, 2020
Updated:
September 10, 2020

From: ELLEN GREENBERG *Ellen Greenberg*
Deputy Director
Sustainability

MICHAEL D. KEEVER *Michael D. Keever*
Deputy Director
Project Delivery

Subject: VMT CEQA SIGNIFICANCE DETERMINATIONS FOR STATE HIGHWAY SYSTEM PROJECTS: IMPLEMENTATION TIMELINE MEMORANDUM UPDATE

1. Overview

This memorandum establishes the timing and application of changes to the California Department of Transportation (Caltrans') California Environmental Quality Act (CEQA) process to implement Senate Bill (SB) 743 for capacity-increasing projects on the State Highway System (SHS). The memo recognizes that many projects on the SHS will not be affected by these changes, as detailed in Attachment A.

The requirements established in this memorandum are consistent with the January 4, 2019 message distributed by Caltrans Division of Environmental Analysis (DEA). It recommended that Districts use Vehicle Miles Traveled (VMT) to analyze transportation impacts of projects with the potential to increase VMT and for which a Notice of Preparation (NOP) was issued after December 28, 2018, particularly for projects not anticipated to be approved until after July 1, 2020.

1.1 Policy Statement

The Caltrans Policy on Transportation Impact Analysis and CEQA Significance Determinations for Projects on the State Highway System is established in the September 10, 2020 Memorandum to Caltrans Staff from Ellen Greenberg, Deputy Director, Sustainability, and Michael Keever, Deputy Director, Project Delivery.

1.2 Guidance Documents

With contributions from State agency partners, transportation partners and stakeholders, the Caltrans Divisions of Traffic Operations (DTO) and Environmental Analysis (DEA) prepared the following guidance documents addressing the Department's transportation analysis and CEQA procedures:

- **Transportation Analysis Framework (TAF)**: This document provides guidance for CEQA transportation/traffic analysis for projects on the SHS,

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including direction to Caltrans Districts related to selecting methods for VMT analysis (including induced travel demand) in project-level environmental documents reflecting both project type and context (urban vs. rural).

- **Transportation Analysis under CEQA (TAC)**: The TAC provides guidance for CEQA practitioners to assess transportation impacts of projects on the SHS using VMT as the primary measure of transportation impact, including how to determine significance of those impacts, and identifying potential mitigation measures.

For each of the documents, informational webinars were held during the review period and multiple technical roundtables provided opportunities for discussion and information sharing with stakeholders.

2. Implementation Timeline

2.1 Projects initiated on or after December 28, 2018 which reached or will reach Caltrans' Milestone 020 ("Begin Environmental") before September 15, 2020, will be evaluated by the Department in consultation with project sponsors on a case-by-case basis to determine if the use of a VMT-based transportation impact significance determination in the draft environmental document is warranted. If either of the following factors applies to a project, there is an expectation that the project will conduct a VMT-based significance determination:

- Project scope includes a new alignment and/or additional lane miles and project location is in a corridor/area with existing or projected congestion
- A high level of public and stakeholder interest in the project.

Note that the final environmental document for a project would use the same metric for transportation significance determination as its draft document. If the traffic study requires re-initiation between draft and final, then the project will be subject to the requirements identified under 2.3 below.

2.2 Capacity-increasing projects on the SHS that reach Caltrans' Milestone 020 ("Begin Environmental") on or after September 15, 2020, will include a VMT-based transportation impact significance determination in the draft environmental document. The Project Development Team (PDT) shall apply Caltrans published guidance (TAF and TAC) in conducting the analysis of transportation impacts and making significance determinations based on the VMT metric.

2.3 Subsequent, supplemental, later tier, or other later CEQA documents which include a new traffic study shall follow the guidance for draft environmental documents per the applicable section below.

2.3.1 If the traffic study is re-initiated before September 15, 2020, the Department in consultation with project sponsors will determine whether VMT-based transportation impact significance determination will be included, based on the factors listed in item 2.1 above.

2.3.2 If the traffic study is re-initiated on or after September 15, 2020, for reasons which are not expected to result in a substantial change to the study's results, and subject to the approval of the Caltrans District Director and concurrence by Headquarters Division of Environmental Analysis, no VMT-based transportation impact significance determination will be required.

2.3.3 If the traffic study is re-initiated on or after September 15, 2020, and the later study may result in substantially different results as compared to the prior study, the PDT shall apply Caltrans-published guidance to conduct an analysis of VMT impacts and make a determination of transportation impact significance using VMT as a metric.

3. Additional Considerations

3.1 Most projects on the SHS are non-capacity increasing (see Attachment A). These projects, identified in Attachment A, are not anticipated to have significant transportation impacts under CEQA and would generally not require quantitative VMT analysis or mitigation.

3.2 Capacity-increasing projects will require VMT analysis to determine whether significant, adverse transportation impacts are anticipated. The potential for projects to induce additional travel will be the basis for determinations of significance. Potential VMT analysis methods include use of elasticity-based calculators, regional travel demand models, and use of the Statewide Travel Demand Model. Methods used will be required to reflect the potential for capacity additions to induce vehicle travel. Caltrans' Transportation Analysis Framework (TAF) addresses selection of appropriate methodologies.

3.3 Many capacity-increasing projects will result in significant, adverse transportation impacts and mitigation will be required to reduce those impacts. A Statement of Overriding Considerations may be required to

approve projects in the case mitigation cannot reduce adverse impacts to a less than significant level. Utilizing a Statement of Overriding Considerations would follow established CEQA guidance for allowing project approvals despite unavoidable environmental effects to one or more resources.

3.4 Note that a Statement of Overriding Considerations can only be made if an Environmental Impact Report (EIR) has been prepared. For new projects, PDTs should consider the likelihood of a significant impact determination when determining the appropriate level of document. PDTs should also evaluate whether projects currently scoped as Negative Declarations/Mitigated Negative Declarations (ND/MND) may require rescoping to an EIR if a significant impact to transportation appears to be likely using VMT as a metric, and a Statement of Overriding Considerations will ultimately be utilized. Utilizing a Statement of Overriding Considerations would follow established CEQA guidance for allowing project approvals despite unavoidable environmental effects to one or more resources.

ATTACHMENT A

Project types not likely to lead to a substantial increase in vehicle travel

The language below is based on the "*Technical Advisory on Evaluating Transportation Impacts in CEQA,*" Governor's Office of Planning and Research, December 2018. The final six bullets on the list of project types not likely to lead to a measurable and substantial increase, beginning with "HOV bypass lanes on on-ramps" were added in 2020 based on discussion with OPR. These are expected to be added to OPR's list of project types in a future update of the Technical Advisory. Note the deletion of the category of project described as "Addition of tolled lanes, where tolls are sufficient to mitigate VMT increase" which was also an outcome of discussion between Caltrans and OPR during the course of producing the TAC and TAF. Caltrans guidance will indicate that the project types listed would not likely lead to a measurable and substantial increase in vehicle travel. Please note that almost all projects programmed as part of the SHOPP are in categories included in the list below, and therefore will be unaffected by the requirements of SB 743.

Projects that would not likely lead to a measurable and substantial increase in vehicle travel, and therefore generally should not require an induced travel analysis, include:

- Rehabilitation, maintenance, replacement, safety, and repair projects designed to improve the condition of existing transportation assets (e.g., highways; roadways; bridges; culverts; transportation management system field elements such as cameras, message signs, detection, or signals; tunnels; transit systems; and assets that serve bicycle and pedestrian facilities) and that do not add additional motor vehicle capacity
- Roadside safety devices or hardware installation such as median barriers and guardrails
- Roadway shoulder enhancements to provide "breakdown space," dedicated space for use only by transit vehicles, to provide bicycle access, or to otherwise improve safety, but which will not be used as automobile vehicle travel lanes
- Addition of an auxiliary lane of less than one mile in length designed to improve roadway safety
- Installation, removal, or reconfiguration of traffic lanes that are not for through traffic, such as left, right, and U-turn pockets, two-way left turn lanes, or emergency breakdown lanes that are not utilized as through lanes
- Addition of roadway capacity on local or collector streets provided the project also substantially improves conditions for pedestrians, cyclists, and, if applicable, transit

- Conversion of existing general-purpose lanes (including ramps) to managed lanes or transit lanes, or changing lane management in a manner that would not substantially increase vehicle travel
- Addition of a new lane that is permanently restricted to use only by transit vehicles
- Reduction in number of through lanes
- Grade separation to separate vehicles from rail, transit, pedestrians or bicycles, or to replace a lane in order to separate preferential vehicles (e.g., HOV, HOT, or trucks) from general vehicles
- Installation, removal, or reconfiguration of traffic control devices, including transit signal priority (TSP) features
- Installation of traffic metering systems, detection systems, cameras, changeable message signs and other electronics designed to optimize vehicle, bicycle, or pedestrian flow
- Timing of signals to optimize vehicle, bicycle, or pedestrian flow
- Installation of roundabouts or traffic circles
- Installation or reconfiguration of traffic calming devices
- Adoption of or increase in tolls
- Initiation of new transit service
- Conversion of streets from one-way to two-way operation with no net increase in number of traffic lanes
- Removal or relocation of off-street or on-street parking spaces
- Adoption or modification of on-street parking or loading restrictions (including meters, time limits, accessible spaces, and preferential/reserved parking permit programs)
- Addition of traffic wayfinding signage
- Rehabilitation and maintenance projects that do not add motor vehicle capacity
- Addition of new or enhanced bike or pedestrian facilities on existing streets/highways or within existing public rights-of-way
- Addition of Class I bike paths, trails, multi-use paths, or other off-road facilities that serve non-motorized travel
- Installation of publicly available alternative fuel/charging infrastructure
- Addition of passing lanes, truck climbing lanes, or truck brake-check lanes in rural areas that do not increase overall vehicle capacity along the corridor
- HOV bypass lanes on on-ramps
- Local and collector roads in rural areas that don't include sidewalks where there would be no pedestrian traffic to use them
- Lanes through grade-separated interchanges without additional receiving lanes downstream
- Adding vehicle storage to a ramp without further reconfiguration

- Park and Ride facilities
- Truck size and weight inspection stations

State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

Memorandum

Making Conservation a California Way of Life

To: DEPUTY DISTRICT DIRECTORS
ENVIRONMENTAL
DEPUTY DISTRICT DIRECTORS
PROJECT MANAGEMENT

Date: May 8, 2020

From: JEFF WILEY
Acting Chief
Division of Project Management

PHILIP J. STOLARSKI
Chief
Division of Environmental Analysis

Subject: **VEHICLES MILES TRAVELED (VMT) CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) DETERMINATIONS**

On April 13, 2020, the California Department of Transportation (Caltrans) posted the "VMT CEQA Significance Determinations for State Highway System Projects Implementation Timeline Memorandum" (Timing Memo) to the Caltrans 743 Implementation Website. Districts shall use the guidance provided in the Timing Memo to determine whether to make a CEQA significance determination for VMT. Note that Districts may choose to make a VMT CEQA determination on any project, even if the Timing Memo does not require this.

Applicability

Concurrence from the Headquarters Environmental Coordinator on the VMT-based transportation impact significance determination will be required for projects that:

a) Met the M020 milestone on or after December 28, 2018, and before September 15, 2020;
b) Will require preparation of a CEQA Environmental Document (Initial Study, (Mitigated) Negative Declaration, or Environmental Impact Report); and
c) Have not yet completed a Draft Environmental Impact Report or (Mitigated) Negative Declaration.

Projects that achieved the M020 milestone prior to December 28, 2018, and meet criteria b and c above, are encouraged to obtain concurrence, but are not required to do so.

Projects meeting the M020 milestone on or after September 15, 2020, will not be required to obtain a concurrence, since these projects will all be required to base CEQA transportation impact determinations on VMT.

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Projects that have circulated a draft environmental document prior to the issuance of this document are requested to provide notification to the Headquarters Environmental Coordinator.

Timing

For any project meeting the criteria above, concurrence shall be obtained on the earlier of the following dates:

- Prior to circulating a draft environmental document.
- By July 1, 2020, for projects that have met the M020 milestone by June 1.
- By October 1, 2020, for projects that meet M020 June 1 or later.

Concurrence Process

Concurrence will be obtained from the Caltrans Headquarters Environmental Coordinator in the Division of Environmental Analysis. Districts will prepare requests via e-mail addressed to their assigned Environmental Coordinator. The e-mail should include:

- Project identifying information such as county-route-postmile and EA.
- Actual M020 (Begin Environmental date) as recorded in the Project Resource and Schedule Management (PRSM) database.
- If the project had an M020 between December 28, 2018, and September 15, 2020, then justification for the District's determination of the metric to be used for CEQA transportation impacts must be provided (see Timing Memo).

The Environmental Coordinator will verify that the determination was done in compliance with the Timing Memo and provide a concurrence e-mail back to the District. If concurrence can't be achieved, then additional discussion with and justification from the District may be required. Concurrences will be retained by the Districts in their project files.

c: District Directors
Michael D. Keever, Deputy Director, Project Delivery

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State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

Memorandum

Making Conservation a California Way of Life

To: DEPUTY DISTRICT DIRECTORS – ENVIRONMENTAL
DEPUTY DIRECTORS – PROJECT MANAGEMENT

Date: August 18, 2020

From: DONNA BERRY Donna Berry
Chief
Division of Project Management

PHILIP J. STOLARSKI Philip J Stolarski
Chief
Division of Environmental Analysis

Subject: VEHICLES MILES TRAVELED (VMT) CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) DETERMINATIONS

This memo is to formalize the July 15, 2020 email regarding the revision to the May 8, 2020 memo on "Vehicle Miles Traveled (VMT) California Environmental Quality Act (CEQA) Determinations" and a clarification to the April 13, 2020 VMT CEQA Significance Determinations for State Highway System Projects Implementation Timeline Memorandum (Timing Memo).

This memo provides additional guidance on the following two items:

1. A clarification to applying section 2.1 of the April 13, 2020 "Timing Memo."
2. Additional direction regarding the concurrence process.

All other considerations within the May 8 Memo remain in effect.

"Timing Memo" Section 2.1 clarification:
Determinations of whether a project will conduct a VMT-based significance determination, is dependent on the considerations within Section 2.1 of the April 13, 2020 "Timing Memo." To clarify this section, if **either** of the factors within Section 2.1 of the Timing Memo occurs on a project, then there is an expectation that the project will be doing a VMT-based significance determination.

- Project scope includes a new alignment and/or additional lane miles and project location is in a corridor / area with existing or projected congestion.
- A high level of public and stakeholder interest in the project.

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Additional directions regarding the Concurrence Process

To ensure consistent decisions on the need for VMT-based significance determinations and to ensure appropriate SB 743 Implementation Team members and Project Delivery management are aware of decisions, the following is effective immediately, for any project seeking concurrence that a VMT-based significance determination is not required:

- Prior to providing concurrence, the Headquarters Environmental Coordinator will share any requests received from a district with Jeremy Ketchum, Assistant Division Chief of Environmental Analysis. After receiving input from Jeremy, the Headquarters Environmental Coordinator will provide concurrence to the district, as appropriate.

If a district has determined it will conduct a VMT-based significance determination, there is no need to send the project to Jeremy for input prior to the Headquarters Environmental Coordinator providing concurrence. All determinations will be gathered by the Headquarters Environmental Coordinator and reported to Jeremy.

If you have any questions, please contact Jeremy Ketchum at <jeremy.ketchum@dot.ca.gov>.

c: District Directors
Michael D. Keever, Deputy Director, Project Delivery

EXHIBIT D

EXHIBIT D

Impact of Highway Capacity and Induced Travel on Passenger Vehicle Use and Greenhouse Gas Emissions

Policy Brief

Susan Handy, University of California, Davis
Marlon G. Boarnet, University of Southern California

September 30, 2014

Policy Brief:
http://www.arb.ca.gov/cc/sb375/policies/hwycapacity/highway_capacity_brief.pdf

Technical Background Document:
http://www.arb.ca.gov/cc/sb375/policies/hwycapacity/highway_capacity_bkgd.pdf

California Environmental Protection Agency
Air Resources Board

Policy Brief on the Impact of Highway Capacity and Induced Travel on Passenger Vehicle Use and Greenhouse Gas Emissions

Susan Handy, University of California, Davis
Marlon G. Boarnet, University of Southern California

Policy Description

Because stop-and-go traffic reduces fuel efficiency and increases greenhouse gas (GHG) emissions, strategies to reduce traffic congestion are sometimes proposed as effective ways to also reduce GHG emissions. Although transportation system management (TSM) strategies are one approach to alleviating traffic congestion,[1] traffic congestion has traditionally been addressed through the expansion of roadway vehicle capacity, defined as the maximum possible number of vehicles passing a point on the roadway per hour. Capacity expansion can take the form of the construction of entirely new roadways, the addition of lanes to existing roadways, or the upgrade of existing highways to controlled-access freeways.

One concern with this strategy is that the additional capacity may lead to additional vehicle travel. The basic economic principles of supply and demand explain this phenomenon: adding capacity decreases travel time, in effect lowering the "price" of driving; when prices go down, the quantity of driving goes up (Noland and Lem, 2002). An increase in vehicle miles traveled (VMT) attributable to increases in capacity is called "induced travel." Any induced travel that occurs reduces the effectiveness of capacity expansion as a strategy for alleviating traffic congestion and offsets any reductions in GHG emissions that would result from reduced congestion. If the percentage increase in VMT matches the percentage increase in capacity, congestion (a function of the ratio of VMT to capacity) is not alleviated at all.

Conversely, some communities have decreased roadway capacity, in part motivated by the goal of reducing VMT. While temporary reductions in highway capacity are common (e.g. through the closure of lanes for construction or emergencies), permanent reductions are relatively rare. San Francisco eventually removed two elevated freeway segments damaged in the 1989 Loma Prieta earthquake, replacing them with street-level boulevards. Many European cities have closed selected streets in their

[1] See the separate policy brief on traffic incident clearance programs: http://arb.ca.gov/cc/sb375/policies/policies.htm

commercial cores to car traffic. This strategy is less common in U.S. cities, but one notable example is the recent elimination of vehicle traffic in Times Square in New York City. Increasingly common in the U.S. are "road diet" projects that re-allocate a portion of the public right-of-way for modes other than cars, though such projects do not necessarily decrease the capacity of the roadway as measured by vehicle throughput.

Impacts of Highway Capacity Expansion

Increased highway capacity can lead to increased VMT in the short run in several ways: if people shift from other modes to driving, if drivers make longer trips (by choosing longer routes and/or more distant destinations), or if drivers make more frequent trips (Noland and Lem, 2002; Gorham, 2009; Litman, 2010). Longer-term effects may also occur if households and businesses move to more distant locations or if development patterns become more dispersed in response to the capacity increase. Capacity expansion can lead to increases in commercial traffic as well as passenger travel (Duranton and Turner, 2011).

The induced-travel impact of capacity expansion is generally measured with respect to the change in VMT that results from an increase in lane miles, determined by the length of a road segment and its number of lanes (e.g. a two mile segment of a four-lane highway equates to eight lane miles). Effect sizes are usually presented as the ratio of the percent change in VMT associated with a one percent change in lane miles. The expectation is that this ratio, also called an "elasticity," will be positive: an increase in lane miles will lead to an increase in VMT. An elasticity of 1 or greater means that the new capacity is entirely filled by additional VMT, producing no reduction in congestion or GHG emissions; for elasticities between 0 and 1, the closer the elasticity is to zero, the smaller the increase in VMT relative to the increase in capacity, and thus the greater the reduction in congestion and GHG emissions.

Impacts are also sometimes measured as the change in VMT associated with the change in travel time (that results from the change in highway capacity). Many studies analyze the change in the number of vehicles per day on that road segment (a metric called "average daily traffic"). No studies focused on travel time or average daily traffic are included here.

Effect Size

Studies consistently show that increased capacity induces additional VMT. Elasticity estimates of the short-run effect of increased highway capacity range from 0.3 to 0.6,

though one study produced a lower estimate of 0.1 (Table 1). Estimates of the long-run effect of increased highway capacity are considerably higher, mostly falling into the range from 0.6 to just over 1.0. The more recent studies have produced the highest estimates of long-run elasticities using more sophisticated methodologies that are better able to illuminate the impact of highway capacity on VMT (as discussed in the accompanying Technical Background Document). Thus, the best estimate for the long-run effect of highway capacity on VMT is an elasticity close to 1.0, implying that in congested metropolitan areas, adding new capacity to the existing system of limited-access highways is unlikely to reduce congestion or associated GHG in the long-run.

Table 1. Impact of Capacity Expansion on VMT

Study	Study location	Study year(s)	Results	
			Change in VMT/ change in lane miles	*Time period*
Duranton and Turner, 2011	U.S.	1983 - 2003	1.03	10 years
Cervero, 2003	California	1980 - 1994	0.10	Short term
			0.39	Long term
Cervero and Hansen, 2002	California	1976 - 1997	0.59	Short term (1 year)
			0.79	Intermediate term (5 years)
Noland, 2001	U.S.	1984 - 1996	0.30 to 0.60	Short term
			0.70 to 1.00	Long term
Noland and Cowart, 2000	U.S.	1982 - 1996	0.28	Short term
			0.90	Long term
Hansen and Huang, 1997	California	1973 - 1990	0.20	Short term
			0.60 to 0.70	Long term – counties
			0.90	Long term – metro areas

Even the earlier studies were skeptical about the potential of capacity expansion to reduce VMT, particularly in the long-run. In 1997, Hansen and Huang found that population growth is the most consistent contributor to VMT growth, but that the contribution from increases in lane miles is significant: "…Our results suggest that the urban [state highway lane miles] added since 1970 have, on the whole, yielded little in the way of level of service improvements." Noland (2001) concluded that "Increased capacity clearly increases vehicle miles of travel beyond any short run congestion relief

that may be obtained." More recently, Duranton and Turner (2011) echoed these earlier studies: "We conclude that increased provision of roads... is unlikely to relieve congestion."
The effect size appears to depend on the size (whether in terms of population or geographic extent) of the metropolitan area. On a percentage basis, the effects are larger for smaller areas (Schiffer, et al. 2005), likely for a number of reasons. In smaller areas, capacity increases are likely to represent larger percentage increases in total capacity, which then produce larger percentage increases in VMT (Noland and Cowart, 2000). Note that the amount (rather than the percentage) of induced travel is likely to be greater in larger areas than in smaller areas (Hansen and Huang, 1997).

Other factors may also influence the effect size. As noted above, the effect is larger in the long-run than in the short-run, with one study concluding that the full impact of capacity expansion on VMT materializes within five years (Hansen and Huang, 1997) and another concluding that the full effect takes as long as ten years (Durantan and Turner, 2011). The level of congestion is important, as capacity expansion will produce a larger reduction in travel time and thus a larger increase in VMT when congestion is high than when it is low and driving speeds are unconstrained (Schiffer, et al. 2005). In addition, the effect size may depend on fuel prices: when fuel prices are lower, the induced travel effects of expanded capacity tend to be higher, as travel time is a greater share of the cost of travel in this situation (Noland and Lem, 2002). Whether the form of capacity expansion (i.e. new roads or expanded roads) matters is not clear (Schiffer, et al., 2005).

An important question is whether increased VMT on highways following capacity expansion is partially offset by decreases in VMT on other roads. This would be the case if drivers shifted from slower and more congested roads to the new or newly expanded highways. However, Hansen and Huang (1997) found "no conclusive evidence that increases in state highway lane-miles have affected traffic on other roads," while more recently Duranton and Turner (2011) concluded that "increasing lane kilometers for one type of road diverts little traffic from other types of road." In other words, capacity expansion leads to a net increase in VMT, not simply a shifting of VMT from one road to another.

Another important question is whether increased highway capacity impacts public transit ridership, or vice versa. The potential interactions are complex. Increased highway capacity could lead public transit riders to shift to driving, thereby contributing to the induced travel effect. Conversely, increased public transit service could entice drivers to replace some driving with public transit, thereby reducing highway traffic and in effect freeing up additional capacity that could then lead to induced traffic. Duranton and

Turner (2011) found no evidence that public transit service affects VMT, suggesting that whatever interactions do occur tend to cancel each other out. In other words, adding transit capacity does not help to reduce congestion, as any freed up capacity is consumed by additional driving.

As noted, some communities have decreased roadway capacity, in part motivated by the goal of reducing VMT. Evidence on the effects of roadway removals or capacity decreases is sparse, however. A 1998 study of 60 locations where road space was taken away from cars in the UK, Canada, Tasmania, and Japan found that, on average, 25 percent of VMT seemed to go away, though the effect size varied widely (Goodwin, et al. 1998). A study of a fourteen-month closure of an important bridge in Calgary, Canada found only a small reduction in trips and little change in behavior with respect to mode (Hunt et al., 2001). Researchers also found limited changes in behavior during the temporary closing for construction of a stretch of Interstate 5 through downtown Sacramento in 2008 (Ye et al., 2012). Studies of the removal of the Central Freeway in San Francisco documented a significant drop in traffic: counts on the boulevard that replaced the freeway were roughly 50 percent less than counts on the freeway (Cervero et al., 2009). Effects on VMT rather than traffic counts have not been assessed.

Evidence Quality

The quality of the evidence linking highway capacity expansion to VMT increases is relatively high, although tying changes in VMT to changes in capacity is challenging. The cited studies use time-series data and sophisticated econometric techniques to estimate the effect size. These studies control for other factors that might also affect VMT, including population growth, increases in income, other demographic effects, and changes in transit service (Noland and Lem, 2002).

Although these studies show a strong correlation between capacity increases and increases in VMT, the direction of causality is an important question in that the anticipation of growth in VMT is generally the rationale for capacity expansion. One study showed that a 10 percent increase in VMT is associated with a 3.3 percent increase in lane-miles (Cervero and Hansen, 2002). However, Fulton, et al. (2000) found that growth in lane-miles precedes growth in VMT, and Duranton and Turner (2011) concluded that "roads are assigned to [metropolitan areas] with little or no regard for the prevailing level of traffic." The cited studies have found a significant influence of capacity expansion on VMT even after accounting for the reverse effect.

Caveats

Many of the studies focus on California, and the results for these studies are similar to those for the national studies, suggesting that the effects are relatively uniform across the U.S. However, as noted above, the effect size may depend on size of the metropolitan area, existing levels of congestion, and fuel prices, and it is likely to be higher in the long run than in the short run.

GHG Emissions

The effect of capacity expansion on GHG emissions depends on two competing effects: the increase in VMT (which increases GHG emissions), and the reduction in traffic congestion (which tends to decrease GHG emissions). As noted above, any induced travel that occurs reduces the effectiveness of capacity expansion as a strategy for alleviating traffic congestion and offsets any reductions in GHG emissions that would result from improved traffic flow. Noland (2001) predicted that the growth in VMT attributable to increased lane miles would produce an additional 43 million metric tons of CO_2 emissions in 2012 nationwide. Conversely, any reductions in VMT resulting from reductions in capacity will reduce GHG emissions, though if traffic congestion increases as a result of the capacity reduction, the benefits will be offset to some degree.

Co-benefits

Given the induced travel effect, capacity expansion has limited potential as a strategy for reducing congestion. The additional vehicle travel induced by capacity expansion increases GHG emissions as well as other environmental effects, including increased air, water, and noise pollution. On the other hand, capacity expansion potentially generates economic and social benefits, at least in the short run, even if the new capacity is completely filled by induced travel. The additional benefits derive from the fact that the expanded highway is carrying more people, each of whom benefits from his or her travel. However, most studies of the impact of capacity expansion on development in a metropolitan region find no net increase in employment or other economic activity, though highway investments do influence where within a region development occurs (Handy, 2005; Funderberg et al., 2010).

In addition, the construction process itself generates both positive and negative effects. Most obviously, highway construction projects create jobs that can boost the local economy. On the other hand, highway construction projects often have substantial negative effects on the communities through which they are sited, particularly if construction necessitates the removal of homes or businesses. Historically, low-income

and/or minority communities were and continue to be disproportionately affected by such projects.

In contrast, reductions in road capacity tend to produce positive social and environmental effects, and they can also generate economic benefits. For example, many cities in Europe have adopted the strategy of closing streets in the central business district to vehicle traffic as an approach to economic revitalization (Hajdu, 1988; Rodriguez, 2011). Road diet projects are becoming increasingly popular in California and elsewhere in the U.S. as a way to support modes other than driving and enhance the local environment, though their economic impacts have not yet been systematically documented.

Examples

California continues to expand its highway system, though at a far slower rate than during the era of interstate highway construction. According to the national Bureau of Transportation Statistics, California had 31,435 miles of freeways, highways, and arterial roadways in 2010, a 1.6 percent increase from 2005.

As noted above, San Francisco removed two segments of elevated freeway damaged in the 1989 Loma Prieta earthquake. The Central Freeway was replaced with Octavia Boulevard, while the removal of the Embarcadero Freeway enabled substantial improvements to the at-grade Embarcadero Boulevard. Both projects sparked an on-going revitalization of their surrounding areas (Cervero, et al. 2009).

The strategy of closing central business district streets to car traffic is uncommon in California but not unknown. Cities in California that have or have had "pedestrian malls" include Burbank, Oxnard, Pomona, Redding, Redlands, Sacramento, and Santa Cruz. The Fulton Mall in downtown Fresno, closed to traffic in the 1960s, has struggled, despite several revitalization efforts. In contrast, Santa Monica's Third Street Promenade, closed to traffic in the 1960s, is widely seen as a success in promoting economic activity and creating a thriving community core.

References

Cairns, S., C. Hass-Clau, and P.B. Goodwin. (1998). *Traffic Impact of Highway Capacity Reductions: Assessment of the Evidence*. Landor Publishing: London.

Cervero, R. (2002). Induced Travel Demand: Research Design, Empirical Evidence, and Normative Policies. *Journal of Planning Literature*, 17, 3-20.

Cervero, R. (2003). Road Expansion, Urban Growth, and Induced Travel: A Path Analysis. *Journal of the American Planning Association*, 69(2), 145-163.

Cervero, R. and M. Hansen. (2002). Induced Travel Demand and Induced Road Investment: A Simultaneous Equation Analysis. *Journal of Transport Economics and Policy*, 36(3), 469-490.

Cervero, R., J. Kang, and K. Shively. (2009). From Elevated Freeways to Surface Boulevards: Neighborhood and Housing Price Impacts in San Francisco. *Journal of Urbanism*, 2(1), 31-50.

DeCorla-Souza, P. and H. Cohen. (1999). Estimating Induced Travel for Evaluation of Metropolitan Highway Expansion. *Transportation*, 26, 249-262.

Duranton, G. and M.A. Turner. (2011). The Fundamental Law of Road Congestion: Evidence from US Cities. *American Economic Review*, 101, 2616-2652.

Funderburg, R., H. Nixon, M. Boarnet, and G. Ferguson. (2010). New Highways and Land Use Change: Results From a Quasi-Experimental Research Design. *Transportation Research A*, 44(2): 76-98.

Fulton, L.M., R. B. Noland, D.J. Meszler, J.F. Thomas. 2000. A Statistical Analysis of Induced Travel Effects in the U.S. Mid-Atlantic Region. *Journal of Transportation and Statistics*, 3(1): 1-14.

Goodwin, P.B., C. Hass-Klau and S. Cairns. (1998). Evidence of the effects of road capacity reduction on traffic levels. *Traffic Engineering and Control*, 39(6), 348 - 354.

Gorham, R. (2009). Demystifying Induced Travel Demand. Sustainable Urban Transport Document #1. Transport Policy Advisory Services on behalf of the Federal Ministry of Economic Cooperation and Development, Bonn, Germany. Available: http://www.cleanairinstitute.org/cops/bd/file/gdt/49-GTZ-SUT-TD-ITD10.pdf

Handy, S. (2005). Smart Growth and the Transportation-Land Use Connection: What Does the Research Tell Us? *International Regional Science Review*, 28 (2): 1-22.

Hajdu, J.C. (1988). Pedestrian Malls in West Germany: Perceptions of their Role and Stages in their Development. *Journal of the American Planning Association*, 54(3). 325-335.

Hansen, M. and Y. Huang. (1997). Road Supply and Traffic in California Urban Areas. *Transportation Research A*, 31(3), 205-218.

Hunt, J.D., A.T. Brownlee, and K.J. Stefan. (2002). Responses to the Centre Street Bridge Closure: Where the "Disappearing" Travelers Went. *Transportation Research Record*, 1807, 51-58.

Litman, T. (2010). Generated Traffic and Induced Travel: Implications for Transport Planning. Victoria Transport Policy Institute. Available: http://www.vtpi.org/gentraf.pdf

Noland, R.B. and L.L. Lem. (2002). A review of the evidence for induced travel and changes in transportation and environmental policy in the US and the UK. *Transportation Research D*, 7, 1-26.

Noland, R.B. and W.A. Cowart. (2000). Analysis of Metropolitan Highway Capacity and the Growth in Vehicle Miles of Travel. *Transportation*, 27, 363-390.

Rodriguez, L. (2011). Pedestrian-Only Shopping Streets Make Communities More Livable. Planetizen. Available: http://www.planetizen.com/node/47517

Schiffer, R.G., M.W. Steinvorth, and R.T. Milam. (2005). Comparative Evaluations on the Elasticity of Travel Demand. Paper presented at the Annual Meeting of the Transportation Research Board, Washington, DC. Available: www.trbforecasting.org/papers/2005/ADB40/05-0313_Schiffer.pdf

Ye, L, P.L. Mokhtarian and G. Circella. (2012). Commuter impacts and behavior changes during a temporary freeway closure: the 'Fix I-5' project in Sacramento, California. *Transportation Planning and Technology*, 35(3), 341-371.

Acknowledgements

This document was produced through an interagency agreement with the California Air Resources Board with additional funding provided by the University of California Institute of Transportation Studies MultiCampus Research Program on Sustainable Transportation.

Response to Comment 26:

Thank you for your comment.

A. CEQA REQUIRES THE PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT

Caltrans proposes to rehabilitate the American River Bridge by removing and replacing the existing concrete deck and steel girder post-tensioning systems in spans 1 and 2. The project would also include modifications to the existing soundwall, install sheet piling around piers for scour mitigation, construct concrete catcher blocks, add a Class I bike/pedestrian path and widen the bridge to accommodate traffic during construction.

The widening is necessary to facilitate construction, provide a safe work area for the contractor, maintain traffic flow during construction and to accommodate bike and pedestrian travel. Alternative 1 is the preferred alternative and would widen the bridge an additional 54'-11" on the northbound side of the bridge. Once complete, the bridge will be 151'-6" wide from outside edge-of-deck to edge-of-deck. No additional lanes will be added with this project. Therefore, the technical studies prepared for the environmental document determined that there are no significant impacts to GHG, air quality, or climate change.

This Mitigated Negative Declaration (MND) is an appropriate environmental document type for this project since it was determined that the project would have no significant impacts on the envioronment.

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

The project would have less than significant impacts 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 mitigation measures incorporated in this environmental document, the project would have less than significant impacts to biological resources.

B. THE MND CONTAINS A LEGALLY INADEQUATE PROJECT DESCRIPTION

As stated previously, Caltrans proposes to rehabilitate the American River Bridge and will not increase capacity. This 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.

This project would remove and replace the existing concrete deck and the steel girder post-tensioning systems in spans 1 and 2. Modifications would be made to the existing soundwall, install sheet piling around piers for scour mitigation, construct concrete catcher blocks, add a Class I bike/pedestrian path. The widening of the bridge is needed to accommodate traffic during construction, provide a safe work area for the contractor, to accommodate bike and pedestrian travel and to maintain traffic flow during construction. Studies are currently underway for the Corridor Improvements Project. The environmental document for the Corridor Improvements Project will analyze the environmental impacts associated with adding lanes to the project.

C. THE MND SEGMENTS ENVIRONMENTAL REVIEW OF THE WHOLE PROJECT

The bridge widening is necessary to facilitate construction, provide a safe work area for the contractor, maintain traffic flow during construction and to accommodate bike and pedestrian

travel. No additional lanes will be added with this project and therefore there will not be an increase in vehicular capacity. In order to provide any increased lane capacity, lanes would need to be constructed much longer than the 3000' indicated in the current project limits. This bridge project is not dependent on the corridor project and therefore no segmentation is involved.

D. THE MND FAILS TO ADDRESS CUMULATIVE IMPACTS ASSOCIATED WITH THE CAPITOL CITY FREEWAY IMPROVEMENT PROJECT

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.

E. THE MND FAILS TO ADDRESS THE PROJECT'S IMPACTS TO GHG AND CLIMATE CHANGE.

1. The MND Fails to Adequately Address and Analyze GHG Emissions from Construction

As stated previously, Caltrans proposes to rehabilitate the American River Bridge and will not increase capacity. This 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.

While the proposed project will result in generation of short-term construction-related GHG emissions, 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.

This project would not change traffic volume, fleet mix, speed, or any other factor that would cause an increase in emissions relative to the no build alternative; therefore, this project would not cause an increase in operational emissions.

The proposed project anticipates temporary short-term air quality impacts; however, these impacts will be reduced with incorporation of the minimization measures. The purpose of this project is to rehabilitate the American River Bridge and the project would not cause an increase in operational emissions. Consequently, operational air quality impacts would not be substantial, and no cumulatively considerable impacts to criteria pollutants and GHG are anticipated.

2. The MND Fails to Disclose and Analyze VMT Associated with Expanded Highway Capacity

The American River Bridge Deck Replacement project is a rehabilitation project and will not result in the increase of vehicular capacity because no additional lanes will be added with this project. In order to provide any increased lane capacity, lanes would need to be constructed much longer than the 3000' indicated in the current project limits. Since no additional lanes will be added with this project, no significant impacts to GHG, air quality, or climate change are anticipated.

27. Megan Shumway

From: Megan Shumway
To: SR51 American River Bridge@DOT
Subject: Comments on the American River Bridge Project
Date: Sunday, December 20, 2020 9:35:02 AM

EXTERNAL EMAIL. Links/attachments may not be safe.

I have head many people opposed to lane increases with the mistaken belief it will encourage more smog producing traffic. My views are:

1. Vehicles idling in traffic and stop and go conditions would only add to greenhouses gasses. It is short sighted to try to eliminate lane expansion as a way to eliminate traffic!
2. The decreasing lanes approaching the bridge and the sudden decrease in speed can lead to accidents that cause further congestion.
3. I think the best use of taxpayer money is to plan for the future and build the best bridge expansion possible. But, I would reserve lanes for a commuter train, Emergency Vehicles or bus lane's, especially with the access to the Arden Fair Mall and Cal Expo. Which can generate huge population migration for events and shopping. I realize there is no plan for a train at this time, but it would be a good idea in the future. Also I believe it would be more expensive to create a new bridge expansion 10-50 years from now.
4. It is particularly important that more rapid access be provided for emergency vehicles and people seeking medical care in the midtown area at Sutter and UC Davis medical systems. Large areas of North and East County need this access and it is the only practical route to take without and extended surface streets trip.

--
Megan Shumway

Response to Comment 27:

Thank you for your comment. Your input is important in considering future improvements to the corridor.

28. Dr. Michelle Stevens – Professor, Environmental Studies Department, C.S.U. Sacramento

From: Stevens, Michelle L
To: SB41 American River Bridge@DOT
Cc: Stevens, Michelle L
Subject: Re: 03-3F070: American River Bridge Deck Replacement Comment Period
Date: Friday, January 8, 2021 3:02:11 PM

EXTERNAL EMAIL. Links/attachments may not be safe.

Hi Sundeep, I am working on a response to this document, specifically about western pond turtles.
I have reviewed the EA and recommend that you include western pond turtle species habitat locations, basking sites, reproductive/ nesting habitat and recruitment of young turtles.

Through our Wildlife Conservation Board grant for the Bushy Lake Conceptual Plan, we are researching and documenting the presence of western pond turtles in the Bushy Lake-Wood Lake-lower American River area. The Advisory Committee of the Lower American River Conservancy Program (LARCP) met on December 11, 2020 for a tour of the middle reach of the American River Parkway to view current conditions of the Parkway and potential and current community investment sites. I created a video for the event , which can be viewed at https://vimeo.com/486382733/1da50dfd07 (Links to an external site.). Please feel free to view and share, we plan to post on the SARA web site and Bushy Lake web site when we can get it updated.

> I noticed that Northwestern Pond Turtle (*Emys marmorata marmorata*) are not included in your 03-3F070: American River Bridge Deck Replacement environmental document. These turtles are present at Bushy Lake, and are documented in the literature to move between flowing lower American River and We have documented the presence of western pond turtles and western pond turtle nests at Bushy Lake. While we have not monitored movement patterns of turtles, In the process of monitoring, we have documented the presence of both Northwestern Pond Turtle (*Emys marmorata marmorata*) individuals and nests at Bushy Lake. We have one year of mark-recapture data collection on a monthly basis, and preliminary turtle nest and reproduction surveys. This spring we will be doing intensive We have recaptured western pond turtle individuals, indicating we have a resident population. We have also discovered western pond turtle nests, indicating that reproduction may be occurring on site. Sustainable conservation and public education about Western pond turtles is the focus for Objective 1 of the Bushy Lake Conceptual Restoration Plan.

I am sending a follow up letter with this email with more information by the end of the day. I wanted you to be aware of the key content of my email.

Regards,

Michelle Stevens

Dr. Michelle Stevens
Professor, Environmental Studies Department
CSUS
Amador Hall 555B
stevensm@csus.edu
Cell 916-765-7397
Web Site: http://www.csus.edu/faculty/s/stevensm/index.html

From: Stevens, Michelle L
To: SR41 American River Bridge@DOT
Cc: Stevens, Michelle L
Subject: Re: 03-3F070: American River Bridge Deck Replacement Comment Period
Date: Friday, January 8, 2021 3:02:11 PM

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I have reviewed the EA and recommend that you include western pond turtle species habitat locations, basking sites, reproductive/ nesting habitat and recruitment of young turtles.

Through our Wildlife Conservation Board grant for the Bushy Lake Conceptual Plan, we are researching and documenting the presence of western pond turtles in the Bushy Lake-Wood Lake-lower American River area. The Advisory Committee of the Lower American River Conservancy Program (LARCP) met on December 11, 2020 for a tour of the middle reach of the American River Parkway to view current conditions of the Parkway and potential and current community investment sites. I created a video for the event , which can be viewed at https://vimeo.com/486382733/1da50dfd07 (Links to an external site.). Please feel free to view and share, we plan to post on the SARA web site and Bushy Lake web site when we can get it updated.

> I noticed that Northwestern Pond Turtle (*Emys marmorata marmorata*) are not included in your 03-3F070: American River Bridge Deck Replacement environmental document. These turtles are present at Bushy Lake, and are documented in the literature to move between flowing lower American River and We have documented the presence of western pond turtles and western pond turtle nests at Bushy Lake. While we have not monitored movement patterns of turtles, In the process of monitoring, we have documented the presence of both Northwestern Pond Turtle (*Emys marmorata marmorata*) individuals and nests at Bushy Lake. We have one year of mark-recapture data collection on a monthly basis, and preliminary turtle nest and reproduction surveys. This spring we will be doing intensive We have recaptured western pond turtle individuals, indicating we have a resident population. We have also discovered western pond turtle nests, indicating that reproduction may be occurring on site. Sustainable conservation and public education about Western pond turtles is the focus for Objective 1 of the Bushy Lake Conceptual Restoration Plan.

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Regards,

Michelle Stevens

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From: Stevens, Michelle L
To: SR51 American River Bridge@DOT
Subject: Re: American River Bridge Deck Replacement Project, IS-Draft MND
Date: Friday, January 8, 2021 4:35:40 PM
Attachments: 03-3F070 American River Bridge DED Scan.pdf

EXTERNAL EMAIL. Links/attachments may not be safe.

Dear Sanjeep, I have attached my letter for the SR51 American River Bridge, and provided information. Our research is ongoing.

I have reviewed the Initial Study and proposed Negative Declaration for SR51 American River Bridge.
and recommend that you include an analysis of western pond turtle species habitat locations, basking sites, reproductive/ nesting habitat and recruitment of young turtles under the biological section of the document.

Through our Wildlife Conservation Board grant for the Bushy Lake Conceptual Plan, we are researching and documenting the presence of western pond turtles in the Bushy Lake-Wood Lake-lower American River area. The Advisory Committee of the Lower American River Conservancy Program (LARCP) met on December 11, 2020 for a tour of the middle reach of the American River Parkway to view current conditions of the Parkway and potential and current community investment sites. I created a video for the event , which can be viewed at https://vimeo.com/486382733/1da50dfd07 (Links to an external site.). Please feel free to view and share, we plan to post on the SARA web site and Bushy Lake web site when we can get it updated.

I recommend western pond turtles be included as a biological resource. We are happy to provide you our research results. We will be observing turtle populations to and from the American River, and based on the literature it is highly likely they are moving back and forth between Bushy Lake and Wood Lake, through the proposed construction site. There are a lot of questions that are still unanswered. We know there is a resident population of western pond turtles at Bushy Lake, there are far more invasive turtles than western pond turtles, and we have found western pond turtle nests. We would love to work with you to evaluate Western Pond Turtle use of both the lower American River and potential movement through the area.

Also, we are happy to provide you a full report of everything we learn, and will provide to you as a Stakeholders of our project. I am happy to discuss these recommendations with your project biologists, and will let you know our sampling protocols and dates this spring if you would like to join us.

Thank you for accepting my comments late. I hope you enjoy our video The Magic of Bushy Lake.

Regards,

Michelle Stevens

Dr. Michelle Stevens
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January 8, 2020

TO: Sandeep Sandhu, Associate Environmental Planner, Caltrans, North Region
703 B Street, Marysville, CA 95901, (530) 741-4404

FROM: Michelle Stevens, Bush Lake Project Manager, CSU Sacramento
Email: stevensm@csus.edu, Phone: 916-765-7397 Michelle Stevens

SUBJECT: 03-3F070: American River Bridge Deck Replacement Comment Period

I have reviewed the EA and recommend that you include western pond turtle species habitat locations, basking sites, reproductive/ nesting habitat and recruitment of young turtles under the biological section of the document.

Through our Wildlife Conservation Board grant for the Bushy Lake Conceptual Plan, we are researching and documenting the presence of western pond turtles in the Bushy Lake-Wood Lake-lower American River area. The Advisory Committee of the Lower American River Conservancy Program (LARCP) met on December 11, 2020 for a tour of the middle reach of the American River Parkway to view current conditions of the Parkway and potential and current community investment sites. I created a video for the event , which can be viewed at https://vimeo.com/486382733/1da50dfd07 (Links to an external site.). Please feel free to view and share, we plan to post on the SARA web site and Bushy Lake web site when we can get it updated.

I noticed that Northwestern Pond Turtle (*Emys marmorata marmorata*) are not included in your 03-3F070: American River Bridge Deck Replacement environmental document. These turtles are present at Bushy Lake, and are documented in the literature to move between flowing lower American River and We have documented the presence of western pond turtles and western pond turtle nests at Bushy Lake. While we have not monitored movement patterns of turtles, In the process of monitoring, we have documented the presence of both Northwestern Pond Turtle (*Emys marmorata marmorata*) individuals and nests at Bushy Lake. We have one year of mark-recapture data collection on a monthly basis, and preliminary turtle nest and reproduction surveys. This spring we will be doing intensive We have recaptured western pond turtle individuals, indicating we have a resident population. We have also discovered western pond turtle nests, indicating that reproduction may be occurring on site. Sustainable conservation and public education about Western pond turtles is the focus for Objective 1 of the Bushy Lake Conceptual Restoration Plan.

The Western pond turtle is the only native freshwater turtle left in California. Now divided into two species, they are designated a "Species of Special Concern". Western Pond Turtles are Species of Greatest Conservation Need in the state wildlife action plans of California, Washington, Oregon and Nevada. In 2004 the turtles were identified as a priority species needing more information for conservation and management. Western pond turtles are

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identified as "wildlife species at risk" in the California Comprehensive Wildlife Conservation Strategy. The Western pond turtle is also currently listed as an endangered species in Washington State and in 1992, the WPT was petitioned for listing under the federal Endangered Species Act.

The Western pond turtle is primarily at risk due to habitat alteration and destruction. Ongoing drought and elimination of wetland and aquatic habitats continue to raise concerns about California's sustainable native turtle populations. Competition with the Red Eared Slider and other non-native turtles is reducing western pond turtle population viability and resiliency. Red-eared slider have made their way to Bushy Lake from multiple sources, and now outnumber the western pond turtle by 9:1. The IUCN Red list has designed the red-eared slider as the most invasive reptile in the world.

The WPT is particularly vulnerable to habitat loss and fragmentation due to its extensive use of both upland terrestrial and aquatic habitats. The turtles are nesting now, and moving back and forth between the uplands and water. They nest on open trails. Other threats include predation, water pollution, competition with non-native turtle species, disease, human disturbance, road mortality, and illegal collection.

WPT nest between March and July, which is when the female turtles will be leaving the water to nest, then returning. This time period is when they are most vulnerable to being run over by construction equipment, bicycles, vehicles or lawn mowers. Most nest sites are near the turtles' aquatic habitat, almost all nests occur within 200 meters of the water (Rathbun *et al.* 2002, Gonzales *et al.* 2008).

Based on our preliminary turtle monitoring data, Bushy Lake provides high quality refugia for Western pond turtles on the lower American River. The turtles rely on a permanent water source with floating woody vegetation and muddy banks for basking, which is plentiful at Bushy Lake. These turtles have high site fidelity, and can live for over 30 years. We monitoring and developing scientific data on the Western pond turtle for the Conceptual Restoration Plan.

I recommend western pond turtles be included as a biological resource. We are happy to provide you our research results. We will be observing turtle populations to and from the American River, and based on the literature it is highly likely they are moving back and forth between Bushy Lake and Wood Lake, through the proposed construction site. We would love to work with you to look at Western Pond Turtle use of both the lower American River and potential movement through the area. Also, we are happy to provide you a full report of everything we learn, and will provide to you as a Stakeholder of our project.

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LITERATURE CITED

Alvarez, J.A., K.A. Davidson, and S.M. Foster. (2014). *Actinemys marmorata* (Western Pond Turtle). Nest predation association. Herpetological Review 45:307–308.

Alverez, J.A. (2005). Use of Artificial Basking Substrate to Detect and Monitor Pacific Pond Turtles (*Emmys marmorata*). Western North American Naturalist.
Alvarez, J.A., K.A. Davidson. (2018). *Actinemys marmorata* (Northwestern Pond Turtle) Atypical Nests. Herpetological Review 49(1), 2018.

Bury, R. B. and D. J. Germano. 2008. Actinemys marmorata (Baird and Girard 1852) –Western pond turtle, Pacific pond turtle. Pages 001.1-001.9 in Rhodin, A.G.J. et al. (Eds.), Conservation biology of freshwater turtles and tortoises: a compilation project of the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group. Chelonian Research Monographs No. 5.

California Department of Fish and Wildlife. 2018. Web. https://www.wildlife.ca.gov/Drought/Projects/Western-Pond-Turtle. Accessed 12/142018.

Dodd, C., & Seigel, R. (1991). Relocation, Repatriation, and Translocation of Amphibians and Reptiles: Are They Conservation Strategies That Work? Herpetologica, 47(3), 336-350.

Germano, D. (2010). Ecology of western pond turtles (*Actinemys marmorata*) At Sewage- Treatment Facilities in the San Juaquin Valley, California. The Southwestern Naturalist, 55(1),89-97.

Lambert, Max., Nielsen, S., Wright, A., Thomson, R., & Shaffer, H. (2013). Habitat Features Determine the Basking Distribution of Introduced Red-Eared Sliders and Native Western PondTurtles. Chelonian Conservation and Biology, 12(1), 192.

Lambert, Max & McKenzie, Jennifer & Screen, Robyn & Clause, Adam & Johnson, Ben & Mount, Genevieve & Shaffer, H & Pauly, Greg. (2018). Large-scale experimental removal of non-native slider turtles has unexpected consequences on basking behavior for both conspecifics and a native, threatened turtle. 10.1101/312173.
Jennings, M.R., Hayes, M.P. 1994. Amphibian and Reptile Species of Special Concern in California. California Department of Fish and Wildlife, Research Section, Animal Management Division commissioned study.

Patterson, Laura Christine. 2006. Life History and Ecology of an Introduced Population of Red-Eared Sliders (*Trachemys scripta elegans)* in the Central Valley of California with Implications for the Conservation of the Western Pond Turtle. Masters Thesis, Biological Science Department, CSUS.

Rathbun, Galen., Scott, Norman., & Murphey, Thomas. 2002. Terrestrial Habitat Use by Pacific Pond Turtles in a Mediterranean Climate. The Southwestern Naturalist, 47(2), 225-235.

Rosenberg, Daniel., & Swift, R. (2013). Post-Emergence Behavior of Hatchling Western Pond Turtles (*Actinemys marmorata*) in Western Oregon. American Midland Naturalist, 169(1), 111-121.
Spinks, Phillip Q, Pauly, Gregory B., Crayon, John J., Bradley Shaffer, H. (2003). Survival of the western pond turtle (*Emys marmorata)* in an urban California environment. Biological Conservation, 113(2), 257-267.

Spinks, Phillip., & Shaffer, H. Bradley (2005). Range-wide molecular analysis of the western pond turtle (*Emys marmorata):* Cryptic variation, isolation by distance, and their conservation implications. Molecular Ecology, 14(7), 2047-2064.

Response to Comment 28:

Thank you for your comment. Environmental Surveys were completed within the project limits to determine impacts of the project. Western Pond Turtles were not observed during those surveys. The Bushy Lake-Wood Lake Lower American River Area is not within the project limits of the construction, therefore the Western Pond Turtle was not observed or included in the document. The Bushy Lake area is considered to be in the USACE jurisdiction and for any potential impacts, Caltrans will purchase in-lieu fees, as associated with the 404 permit.