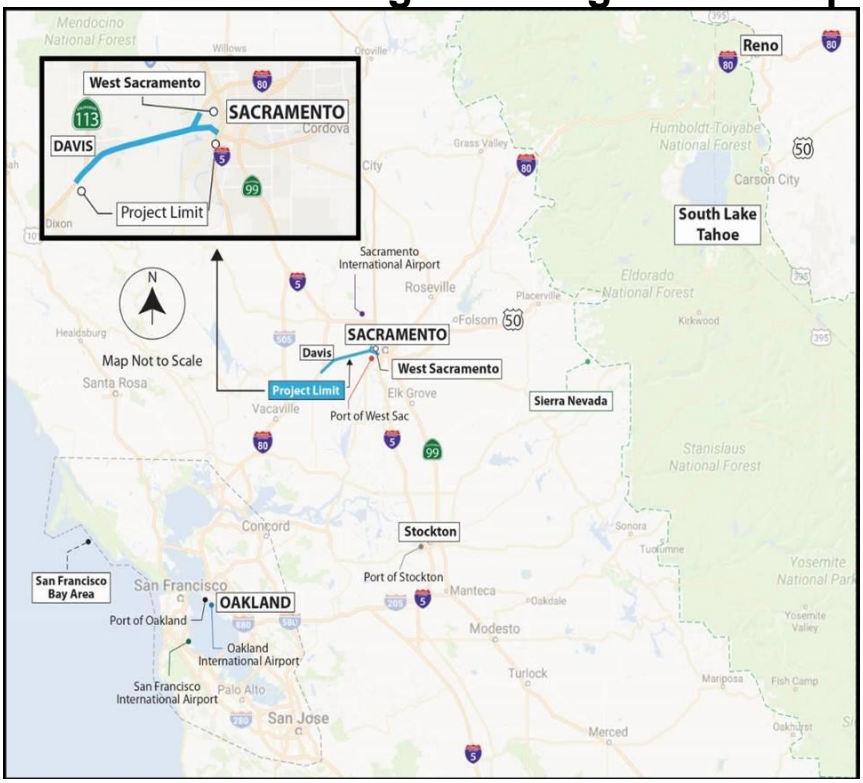
Yolo 80 Corridor Improvements Project

Caltrans District 3
703 B St, Marysville, CA 95901
04-SOL-80-40.7/R44.7; 03-YOL-80-0.00/R11.72; 03-YOL-50-0.00/3.12; 03-SAC-50-0.00/L0.617; 03-SAC-80-M0.00/M1.36
EA 03-3H900/EFIS 0318000085

Final Environmental Impact Report / Environmental Assessment with Finding of No Significant Impact



Prepared by the
State of California, Department of Transportation

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

April 2024

General Information about This Document

What's in this document:

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration (FHWA), has prepared this Environmental Impact Report/Complex Environmental Assessment (EIR/EA), which examines the potential environmental impacts of the alternatives being considered for the proposed Yolo 80 Corridor Improvements Project (project) located in Solano, Yolo, and Sacramento Counties, California. Caltrans is the lead agency under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). The document explains why the project is being proposed, what alternatives Caltrans considered for the project, potential effects to the environment resulting from the project, potential impacts of each of the alternatives, and proposed avoidance, minimization, and/or mitigation measures (all measures are listed in Appendix C). The Draft EIR/EA was circulated to the public for 61 days between November 13, 2023, and January 12, 2024. Comments received during this period are included in Chapter 4. Elsewhere throughout this document, a vertical line in the margin indicates a change made since draft document circulation. Minor editorial changes and clarifications have not been so indicated. Additional copies of this document and the related technical studies are available for review at the following locations:

Mary L. Stephens – Davis Branch Library
315 E. 14th Street
Davis, CA 95616

California Department of Transportation, District 3
703 B Street, Marysville, CA 95901

Arthur F. Turner Community Library
1212 Merkley Avenue
West Sacramento, CA 95691

Alternative formats:

For individuals with sensory disabilities, this document can be made available in Braille, in large print, or in digital format. To obtain a copy in one of these alternate formats, please call or write to Department of Transportation, Attn: Stacie Gandy, EEO/Safety Office, 703 B Street, Marysville, CA 95901; (530) 218-0632 (Voice) or use the California Relay Service (800) 735-2929 (TTY to Voice), (800) 735-2922 (Voice to TTY) or 711.

SCH# 2021060117
04-SOL-80-40.7/R44.7; 03-YOL-80-0.00/R11.72; 03-YOL-50-0.00/3.12; 03-SAC-50-0.00/L0.617; 03-SAC-80-M0.00/M1.36
EA 03-3H900/EFIS 0318000085

Construct improvements consisting of a High Occupancy Toll (HOT) 3+ lane in each direction with direct connectors, pedestrian/bicycle facilities, park-n-ride, and Intelligent Transportation Systems (ITS) elements. On I-80 between post miles (PMs) 40.7 and R44.7 in Solano County, between PMs 0.00 and R11.72 in Yolo County, and between PMs M0.00 and M1.36 in Sacramento County; on the US-50 corridor between PMs 0.00 and 3.12 in Yolo County and between PMs 0.00 and L0.617 in Sacramento County.

FINAL ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL ASSESSMENT WITH FINDING OF NO SIGNIFICANT IMPACT

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

THE STATE OF CALIFORNIA

Department of Transportation

Cooperating agencies: US Fish and Wildlife Service, Federal Highway Administration, National Marine Fisheries Service, US Army Corps of Engineers, US Environmental Protection Agency

Responsible Agencies: California Transportation Commission, Central Valley Regional Water Quality Control Board, California Department of Fish and Wildlife, State Historic Preservation Officer, Central Valley Flood Protection Board

April 30, 2024
Date

Suzanne Melim
Chief, North Region Environmental
California Department of Transportation
CEQA and NEPA Lead Agency

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CALIFORNIA DEPARTMENT OF TRANSPORTATION
FINDING OF NO SIGNIFICANT IMPACT (FONSI)

FOR

Yolo 80 Corridor Improvements Project (EA: 03-3H900)

The California Department of Transportation (Caltrans) has determined that Alternative 4b (add a high-occupancy toll lane in each direction for free use by vehicles with three or more riders [HOT 3+] and build an I-80 managed lane direct connector) will have no significant impact on the human environment. This FONSI is based on the attached Environmental Assessment (EA) and associated technical studies which has been independently evaluated by Caltrans and determined to adequately and accurately discuss the need, environmental issues, and impacts of the proposed project and appropriate mitigation measures. It provides sufficient evidence and analysis for determining that an Environmental Impact Statement is not required. Caltrans takes full responsibility for the accuracy, scope, and content of the attached EA and associated technical studies.

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 327 and the Memorandum of Understanding dated May 27, 2022, and executed by FHWA and Caltrans.

Suzanne Melim

April 30, 2024
Date

Suzanne Melim
Chief, North Region Environmental
California Department of
Transportation

SUMMARY

NEPA Assignment

California participated in the “Surface Transportation Project Delivery Pilot Program” (Pilot Program) pursuant to 23 USC 327, for more than five years, beginning July 1, 2007, and ending September 30, 2012. MAP-21 (P.L. 112-141), signed by President Obama on July 6, 2012, amended 23 USC 327 to establish a permanent Surface Transportation Project Delivery Program. As a result, the Department entered into a Memorandum of Understanding pursuant to 23 USC 327 (NEPA Assignment MOU) with FHWA. The NEPA Assignment MOU became effective October 1, 2012, and was renewed on May 27, 2022, for a term of ten years. In summary, the Department continues to assume FHWA responsibilities under NEPA and other federal environmental laws in the same manner as was assigned under the Pilot Program, with minor changes. With NEPA Assignment, FHWA assigned, and the Department assumed all of the United States Department of Transportation (USDOT) Secretary's responsibilities under NEPA. This assignment includes projects on the State Highway System and Local Assistance Projects off the State Highway System within the State of California, except for certain categorical exclusions that FHWA assigned to the Department under the 23 USC 326 CE Assignment MOU, projects excluded by definition, and specific project exclusions.

Introduction

The California Department of Transportation (Caltrans or Department), in collaboration with stakeholders, proposes to construct improvements consisting of managed lanes, pedestrian/bicycle facilities, and Intelligent Transportation System (ITS) elements along Interstate 80 (I-80) and U.S. Route 50 (US-50) from Kidwell Road near the eastern Solano County boundary (near Dixon), through Yolo County, and to West El Camino Avenue on I-80 and Interstate 5 (I-5) on US-50 in Sacramento County.

Caltrans, as assigned by the Federal Highway Administration (FHWA), is the lead agency under the National Environmental Policy Act (NEPA) for the Caltrans EA 03-3H900 Yolo 80 Corridor Improvements Project (project). Caltrans is also the lead agency under the California Environmental Quality Act (CEQA).

The project is programmed in the State Transportation Improvement Program (STIP), Regional Surface Transportation Program, and Congestion Management and Air Quality Improvement Program.

Overview of Project Area

CORRIDOR OVERVIEW

The project consists of a stretch of the I-80 corridor that passes through parts of Solano, Yolo, and Sacramento counties. Specifically, the project would extend from Kidwell Road and the Solano/Yolo County line, the Solano/Yolo County line to the Yolo/Sacramento County line, and from the Yolo/Sacramento County line to West El Camino Avenue. In addition, the project

includes a stretch of the US-50 corridor between the I-80/I-50 interchange and the Yolo/Sacramento County line, and between the Yolo/Sacramento County line and the US-50/I-5 interchange. The total project length is approximately 20.8 miles.

Purpose and Need

The purpose of the proposed project is to:

- Ease congestion and improve overall freight and person throughput[1]
- Improve freeway operation on the mainline, ramps, and at system interchanges
- Support reliable transport of goods and services throughout the region
- Improve modality[2] and travel time reliability
- Provide expedited traveler information and monitoring systems.

The proposed project is needed for the following reasons:

- Recurring congestion during the morning and afternoon peak periods exceeds current design capacity limiting person throughput.
- Operational inefficiencies lead to the formation of bottlenecks due to short weaving and merging areas and lane drops.
- Inefficient movement of goods and services impedes regional and interstate economic sustainability.
- The corridor users rely heavily on single-occupancy vehicles with limited multi-modal options such as transit, carpool, bicycle, and pedestrian facilities, resulting in unreliable travel times.
- Lack of real-time traveler information and coordinated traffic communication systems impedes timely response to roadway incidents resulting in secondary collisions and increased non-recurring congestion.

Proposed Action

The project would add managed lanes on I-80 and US-50 by a combination of lane conversion, restriping, and shoulder and median reconstruction with a concrete barrier. Drainage modifications would be required due to median reconstruction in the locations to which sheet flow currently drains. The existing Intelligent Transportation System, (ITS) elements and infrastructure would be expanded and modified and would include ramp meters, fiber-optic conduit and cables, and overhead signs. Utility relocation would also occur as further described below.

[1] Throughput is the number of people moving efficiently through a region.
[2] Modality is the variety in modes of transportation. This includes access and multiple options for the movement of people and goods. Examples include access to transit, carpool, bicycle, and pedestrian facilities.

PROJECT ALTERNATIVES

This section describes alternatives developed to meet the project's purpose and need. The No Build Alternative is Alternative 1. Build Alternatives 2a, 3a, 4a, 5a, and 6a propose the same geometric footprint, but would incorporate different managed lane types. Build Alternatives 2b, 3b, 4b, 5b, and 6b propose the same geometric footprint, include an I-80 managed lane direct connector, but would incorporate different managed lane types. Build Alternatives 7a and 7b would not construct new lanes but would repurpose an existing lane instead; however, Build Alternative 7b would include the I-80 managed lane direct connector.

- Build Alternative 2a: Add a high-occupancy vehicle lane in each direction for use by vehicles with two or more riders (HOV 2+).
- Build Alternative 2b: Add a high-occupancy vehicle lane in each direction for use by vehicles with two or more riders (HOV 2+) and build an I-80 managed lane direct connector.
- Build Alternative 3a: Add a high-occupancy toll lane in each direction for free use by vehicles with two or more riders (HOT 2+). Single-occupied vehicles would pay a fee for lane usage.
- Build Alternative 3b: Add a high-occupancy toll lane in each direction for free use by vehicles with two or more riders (HOT 2+) and build an I-80 managed lane direct connector. Single-occupied vehicles would pay a fee for lane usage.
- Build Alternative 4a: Add a high-occupancy toll lane in each direction for free use by vehicles with three or more riders (HOT 3+). Vehicles with less than three riders would pay a fee for lane usage.
- Build Alternative 4b: Add a high-occupancy toll lane in each direction for free use by vehicles with three or more riders (HOT 3+) and build an I-80 managed lane direct connector. Vehicles with less than three riders would pay a fee for lane usage.
- Build Alternative 5a: Add an express lane in each direction (i.e., everyone would pay a fee to use the lane, regardless of the number of riders).
- Build Alternative 5b: Add an express lane in each direction (i.e., everyone would pay a fee to use the lane, regardless of number of riders), and build an I-80 managed lane direct connector.
- Build Alternative 6a: Add a transit-only lane in each direction.
- Build Alternative 6b: Add a transit-only lane in each direction and build an I-80 managed lane direct connector.
- Build Alternative 7a: Repurpose the current number one general-purpose lane for use by vehicles with two or more riders (HOV 2+); no new lanes would be constructed.

- Build Alternative 7b: Repurpose the current number one general-purpose lane for use by vehicles with two or more riders (HOV 2+); no new lanes would be constructed. Build an I-80 managed lane direct connector.

This project contains several standardized project features, which are employed on most, if not all, Caltrans projects and were not developed in response to any specific environmental impact resulting from the proposed project. These measures are addressed in more detail in the Environmental Consequences sections found in Chapter 2 and included as Appendix E.

Alternatives 2a, 2b, 7a, and 7b include HOV lane alternatives. If a HOT lane alternative is chosen as the preferred alternative (Build Alternatives 3a, 3b, 4a, and 4b), then additional advanced HOT lane signs will need to be placed from I-80/El Camino Avenue to I-80/Truxel Road and between US-50/I-5 and US-50/SR-99 (Sac 80 PM M1.4/3.64 and SAC 50 PM L0.60/R0.20). If necessary, the Environmental Document and the Utility Certification will be revalidated during the PS&E phase.

The Build Alternatives consist of the following three geographic segments:

Segment 1: Segment 1 stretches from Kidwell Road in Eastern Solano County through Davis to the Eastern end of the Yolo Causeway east of Enterprise Boulevard in West Sacramento. Segment 1 consists of three sub-segments:

- *Segment 1a* is from Kidwell Road to Solano County/Yolo County Line.
- *Segment 1b* is from the Solano/Yolo County Line to the west end of the Yolo Causeway.
- *Segment 1c* is from the start of the Yolo Causeway to east of Enterprise Boulevard.

Segment 2: Segment 2 starts just east of Enterprise Boulevard and continues north on I-80 to West El Camino Avenue.

Segment 3: Segment 3 starts at the I-80/US-50 Separation and continues east along US-50 to I-5 near downtown Sacramento. Segment 3 consists of two sub-segments:

- *Segment 3a* is the I-80/US-50 Separation to Jefferson Boulevard Undercrossing.
- *Segment 3b* is the Jefferson Boulevard Undercrossing to just east of I-5.

Identification of a Preferred Alternative

Build Alternative 4B (HOT 3+ with managed lane connector ramp) is the preferred alternative for meeting the project's purpose and need. While Build Alternatives 2–6 offer similar results in terms of impacts on the environment and vehicle miles traveled, Build Alternative 4B provides the highest benefit with respect to revenue generation while still meeting the project's purpose and need to reduce congestion and improve mobility across the corridor. Further, Build Alternative 4B is consistent with local government transportation goals and the project's partner agency's (Yolo Transportation District) declaration of HOT 3+ with connector ramp as their preferred alternative.

Joint California Environmental Quality (CEQA) Act/National Environmental Policy Act (NEPA) Documentation

The proposed project is a joint project by the California Department of Transportation (Department) and the Federal Highway Administration (FHWA) and is subject to state and federal environmental review requirements. Project documentation, therefore, was prepared in compliance with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The Department is the lead agency under NEPA. Caltrans is the lead agency under CEQA. In addition, FHWA's responsibility for environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 United States Code Section 327 (23 USC 327) and the Memorandum of Understanding dated May 27, 2022, and executed by FHWA and Caltrans.

Some impacts determined to be significant under CEQA may not lead to a determination of significance under NEPA. Because NEPA is concerned with the significance of the project as a whole, often a "lower level" document is prepared for NEPA. One of the most common joint document types is an Environmental Impact Report/Environmental Assessment (EIR/EA).

After receiving comments from the public and reviewing agencies, this Final EIR/EA was prepared. The Final EIR/EA includes responses to comments received on the Draft EIR/EA and identifies the preferred alternative. If the decision is made to approve the project, a Notice of Determination will be published for compliance with CEQA, and the Department will decide whether to issue a Finding of No Significant Impact (FONSI) or require an Environmental Impact Statement (EIS) for compliance with NEPA. A Notice of Availability (NOA) of the FONSI will be sent to the affected units of federal, state, and local government, and to the State Clearinghouse in compliance with Executive Order 12372.

Potential Environmental Consequences and Avoidance, Minimization, and/or Mitigation Measures

Project impacts would potentially occur in the following resource areas: aesthetics, air quality, biological resources, cultural resources, hazardous materials, energy and greenhouse gases, hydrology and water quality, noise, paleontology, transportation, and utilities and service systems. The project would not contribute to cumulatively considerable effects to the resources analyzed. Project effects under NEPA are discussed fully in Chapter 2, *Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures*. Table S-1 summarizes the impacts of the project under NEPA. Chapter 3, *California Environmental Quality Act Evaluation*, and Table S-2 addresses impacts under CEQA.

Coordination with Other Public Agencies

NOTICE OF PREPARATION

Caltrans filed a Notice of Preparation (NOP) of an EIR with the State Clearinghouse on June 7, 2021. An NOP memorandum was filed with the State Clearinghouse on June 6, 2021, which

was revised on August 17, 2021, to notify that the scoping meeting was rescheduled. Caltrans accepted scoping comments until September 24, 2021. A revised NOP was also distributed on October 17, 2022, that included clarification of the proposed managed lane strategies and Build Alternatives. A copy of the NOP is included in Appendix G.

Agency consultation and public participation for the Yolo 80 Corridor Improvements Project have been accomplished through a variety of formal and informal methods, including project development team meetings, interagency coordination meetings, and correspondence with other interested parties.

Comments from the public that were submitted during the meeting included questions regarding proposed bicycle facilities, project funding, projects in the nearby area, project timing, proposed lane configuration, proposed sound wall locations, and proposed work within the Yolo causeway. In addition, written comment letters included requests to consider potential air quality effects to sensitive receptors, increased flood risks, potential fish passage impacts, Native American Tribal consultation, utility relocation, etc.

PERMITS AND APPROVALS NEEDED

Table S-3 details the permits, licenses, agreements, and certifications required for project construction.

Table S-1 Comparison of Alternatives – Impacts Summary (NEPA)

Impact	No Build Alternative 1	Build Alternatives 2a and 2b	Build Alternatives 3a and 3b	Build Alternatives 4a and 4b	Build Alternatives 5a and 5b	Build Alternatives 6a and 6b	Build Alternatives 7a and 7b	Avoidance, Mitigation, and/or Minimization Measures (AMMs)
Land Use								
Existing and Future Land Use	No effect	Construction and operation of Build Alternatives 2a and 2b would have no effect on existing or future land uses.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	None
Conflict with any land use plan, policy, or regulation	No effect	Consistent or partially consistent.	Consistent or partially consistent.	Consistent or partially consistent.	Consistent or partially consistent, some inconsistent.	Consistent or partially consistent, some inconsistent.	Consistent or partially consistent, some inconsistent.	None
Parks and Recreational Facilities								
Parks and Recreational Facilities	No effect	Construction and operation of Build Alternatives 2a and 2b may result in temporary traffic delays and ramp closures that could cause temporary delays in access to recreational facilities. None of the temporary construction-related impacts would adversely affect the activities, features, or attributes of the park. Build Alternatives 2a and 2b would not require acquisition of a park or recreational facilities.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	None
Farmlands								
Effects on farmland	No effect	Build Alternatives 2a and 2b would occur almost entirely within the Caltrans ROW and would not result in the conversion of any important farmland or Williamson Act land to non-agricultural uses. Therefore, Build Alternatives 2a and 2b would have no effect on farmland or Williamson Act land in the project area.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b	Same as effects described under Build Alternatives 2a and 2b	Same as effects described under Build Alternatives 2a and 2b	Same as effects described under Build Alternatives 2a and 2b	None
Growth								
Growth	No effect	Build Alternatives 2a and 2b would not remove an impediment to growth, provide an entirely new public facility, or provide new access to previously unserved areas. Build Alternatives 2a and 2b would not directly increase development of residential land uses, encourage growth outside of existing growth boundaries, or alter existing access to residential and employment areas; therefore, no adverse effect associated with population growth would be anticipated with implementation of Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Build Alternative 6a and 6b would not improve US-50 corridor traffic performance compared to the No-Build Alternative, so they would not accommodate planned growth. No adverse effects associated with growth would be anticipated.	Build Alternatives 7a and 7b would not improve US-50 corridor traffic performance compared to the No-Build Alternative, so they would not accommodate planned growth. No adverse effects associated with growth would be anticipated.	None

Impact	No Build Alternative 1	Build Alternatives 2a and 2b	Build Alternatives 3a and 3b	Build Alternatives 4a and 4b	Build Alternatives 5a and 5b	Build Alternatives 6a and 6b	Build Alternatives 7a and 7b	Avoidance, Mitigation, and/or Minimization Measures (AMMs)
Community Impacts								
Effects on community character, population, and cohesion	No effect	Build Alternatives 2a and 2b would not alter the zoning, layout, or access within the community. Build Alternatives 2a and 2b would not divide an existing neighborhood or result in additional barriers within the Community Study Area.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	None
Effects on relocation and real property acquisition	No effect	Build Alternatives 2a and 2b would require two permanent right-of-way easements. No displacement of any residences or businesses would be required.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	None
Effects on environmental justice populations	No effect	The expected increases of environmental justice community travel would be like the increases in non-environmental justice community travel and would, therefore, would not cause disproportionately high and adverse direct effects on environmental justice travelers.	Construction effects would be the same as Build Alternatives 2a and 2b. Although the congestion relief and enhanced accessibility would benefit all I-80/US-50 travelers, environmental justice travelers may not realize the equivalent benefit from Build Alternatives 3a and 3b as non-environmental justice travelers due to the tolling.	Construction effects would be the same as described under Build Alternatives 2a and 2b. As Build Alternatives 4a and 4b are toll-based alternatives, effects on environmental justice travelers would be like Build Alternatives 3a and 3b.	Construction effects would be the same as described under Build Alternatives 2a and 2b. Build Alternatives 5a and 5b would involve adding an Express Lane in each direction. As Build Alternatives 5a and 5b are also toll-based alternatives, effects on Environmental Justice Travelers would be like Build Alternatives 3a and 3b, respectively. However, there would be no reduced payment option from carpooling or high vehicle occupancy.	Construction effects would be the same as described under Build Alternatives 2a and 2b. While improved traffic flow and movement of persons on I-80/US-50 within the project limits would benefit a wide range of communities including those defined as environmental justice communities, with a transit-only alternative, the projected increases of environmental justice community travel are less than the projected increases of non-environmental justice community travel	Build Alternatives 7a and 7b would not cause disproportionately high and adverse direct effects on environmental justice communities during construction. There would be an expected increase of environmental justice community travel that is similar the increases in non-environmental justice community travel and would, therefore, not cause disproportionately high and adverse direct effects on environmental justice travelers since the benefits of these alternatives would be equally shared by travelers from all income levels.	Caltrans would implement AMM EJ-1, EJ-2, and EJ-3 for Build Alternatives 3a, 3b, 4a, 4b, 5a, and 5b.
Equity	No effect	Would not substantially affect community character or quality of life in underserved communities in the study area. The Build alternatives would not exacerbate air pollutant conditions and associated health disparities or affect socioeconomic conditions. Residents in these neighborhoods may be initially challenged by the toll-related signage and the process for obtaining toll transponders.	Like effects described under Build Alternatives 2a and 2b. Build Alternatives 3a and 3b may present challenges to linguistically isolated households.	Like effects described under Build Alternatives 2a and 2b. Build Alternatives 4a and 4b may present challenges to linguistically isolated households.	Like effects described under Build Alternatives 2a and 2b. Build Alternatives 5a and 5b may present challenges to linguistically isolated households.	A transit lane would be added in each direction, which would benefit underserved communities using public transit.	Same as effects described under Build Alternatives 2a and 2b.	None

Impact	No Build Alternative 1	Build Alternatives 2a and 2b	Build Alternatives 3a and 3b	Build Alternatives 4a and 4b	Build Alternatives 5a and 5b	Build Alternatives 6a and 6b	Build Alternatives 7a and 7b	Avoidance, Mitigation, and/or Minimization Measures (AMMs)
Utilities/Emergency Services								
Effects on public and private utilities	No effect	Planned or accidental temporary service interruptions during relocation of utilities will occur during construction.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	None
Effects on police, fire, and emergency service providers	No effect	Temporary traffic delays and ramp closures on I-80 and US-50 will occur during construction.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	None
Traffic and Transportation/Pedestrian and Bicycle Facilities								
Existing (2018) operations	No effect	Temporary traffic delays and ramp closures on I-80 and US-50 will occur during construction.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	None, although VMTs are expected to be reduced by implementing the measures in Table 2.1.27.
Opening Year (2029) operations	No effect	Congestion would be eliminated in some areas under Alternatives 2a and 2b. However, congestion in other areas would extend outside the peak period. Alternative 2b (Add HOV with Median Ramps) would have less upstream congestion on I-80 in comparison to Alternative 2a.	Alternative 3a (Add HOT2+) would not perform as well as Alternatives 2a, 4a, and 5a because more vehicles would be eligible for the managed lane than in the alternatives, so congestion would be higher where vehicles are entering and leaving the managed lane. Alternative 3b (Add HOT2+ with Direct Connector) would have less upstream congestion on I-80 in comparison to Alternative 3a.	Alternative 4a (Add HOT3+) would perform well, except for increased VMT. Alternative 4b (Add HOT3+ with Direct Connector) would have less upstream congestion on I-80 in comparison to Alternative 4a.	Same as effects described under Build Alternatives 2a and 2b.	Alternative 6a (Add Transit) would not perform well compared to the other alternatives. Passenger vehicle volume would be constrained by the network capacity resulting in performance like Alternative 1 (No Build) Alternative 6b (Add Transit with Direct Connector) would have less upstream congestion on I-80 in comparison to Alternative 6a.	Alternative 7a would have worse congestion extending into downtown Sacramento on US 50 than the other Build Alternatives. Alternative 7b would have less upstream congestion on I-80 in comparison to Alternative 7a.	None, although VMTs are expected to be reduced by implementing the measures in Table 2.1.27.
Horizon Year (2049) operations	Peak hour demand volume is expected to increase. By horizon year 2049, I-80 and US 50 in the project area would become so congested that travelers would seek longer paths to have a lower travel time.	Under alternatives 2a and 2b, congestion at the Yolo Causeway bottleneck would be lower, but a new bottleneck would form at the lane drop after the US 50 off-ramp. The combined congested area would extend outside the peak period and extend upstream to Harbor Boulevard on US 50. Alternative 2b (Add HOV with Median Ramps) would have the least upstream congestion on both US 50 and I-80 with the additional capacity provided by the median ramp from I-80 and the reduced volume in the weaving section on I-80 between US 50 and West Capitol Avenue.	Alternative 3a (Add HOT2+) would not perform as well as Alternatives 2a, 4a, and 5a because more vehicles would be eligible for the managed lane than in the alternatives, so congestion would be higher where vehicles are entering and leaving the managed lane. Alternative 3b (Add HOT2+ with Direct Connector) would have	Alternative 4a (Add HOT3+) would perform well, except for increased VMT. Alternative 4b (Add HOT3+ with Direct Connector) would have less upstream congestion on US 50 and I-80 in comparison to Alternative 4a.	Same as effects described under Build Alternatives 2a and 2b.	Alternative 6a (Add Transit) would not perform well compared to the other alternatives. Passenger vehicle volume would be constrained by the network capacity resulting in performance similar to Alternative 1 (No Build) Alternative 6b (Add Transit with Direct Connector) would have less upstream congestion on US 50 and	Alternative 7a would have worse congestion extending into downtown Sacramento on US 50 than the other Build Alternatives. Alternative 7b would have less upstream congestion on US 50 and I-80 in comparison to Alternative 7a.	None, although VMTs are expected to be reduced by implementing the measures in Table 2.1.27.

Impact	No Build Alternative 1	Build Alternatives 2a and 2b	Build Alternatives 3a and 3b	Build Alternatives 4a and 4b	Build Alternatives 5a and 5b	Build Alternatives 6a and 6b	Build Alternatives 7a and 7b	Avoidance, Mitigation, and/or Minimization Measures (AMMs)
			less upstream congestion on US 50 and I-80 in comparison to Alternative 3a.			I-80 in comparison to Alternative 6a.		
Visual/Aesthetics								
Effects on scenic resources, visual character, and visual quality	No effect	Overall visual impacts for Build Alternative 2a and 2b would be moderate-low but would range from very low to moderate-high.	Overall visual impacts would be moderate but would range from low to high.	Overall visual impacts would be moderate but would range from low to high.	Overall visual impacts would be moderate but would range from low to high.	Overall visual impacts would be moderate but would range from very low to moderate-high.	Overall visual impacts would be moderate but would range from very low to moderate-high.	AMM AES-1, AMM AES-2, AMM AES-3, AMM AES-4, AMM AES-5
Cultural Resources								
Effects on cultural resources	No effect	Project construction would create subsurface disturbances that could result in damage to or destruction of previously undiscovered subsurface archaeological deposits or unmarked burials.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	None
Water Quality								
Hydrology and floodplain	No effect	Caltrans would need an encroachment permit from the CVFPB and a Section 408 permit from the USACE prior to construction of Build Alternatives 2a and 2b. Build Alternatives 2a and 2b would not promote incompatible development within the floodplain and would not contribute to adverse effects to floodplains. AMM HF-1 will require installation of a detention basin riser to tie into existing storm drains on the upstream side at two locations in the city of Davis—one detention basin rise inlet is proposed at the storm drain crossing on Mace Boulevard south of I-80 and the other will be at the WB I-80 off-ramp to Chiles Road.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Caltrans will implement AMM HF-1 for all Build Alternatives
Water Quality and Stormwater Runoff	No effect	Potential for short-term discharges of sediments, oil, grease, and chemical pollutants into nearby storm drains generated during construction; Potential long-term impacts from increased impervious area, operation, and maintenance activities. Construction and operation would not adversely affect water quality.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	None
Geology/Soils/Seismicity/Topography								
Surface Conditions	No effect	Potential construction and operation effects on erosion, siltation, and runoff would be minimal under Build Alternatives 2a and 2b. Once construction is completed, operation	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Caltrans would implement AMM GEO-1, AMM GEO-2, and AMM GEO-3for all Build Alternatives.

Impact	No Build Alternative 1	Build Alternatives 2a and 2b	Build Alternatives 3a and 3b	Build Alternatives 4a and 4b	Build Alternatives 5a and 5b	Build Alternatives 6a and 6b	Build Alternatives 7a and 7b	Avoidance, Mitigation, and/or Minimization Measures (AMMs)
		of Build Alternatives 2a and 2b would not result in in significant disruptions, displacements, compaction or overcrowding of on-site soils, or change in topography or ground surface features						
Subsurface Conditions and Groundwater	No effect	Groundwater is not anticipated to be encountered during culvert replacement excavation but may be encountered during excavation of footings for the connector ramp under Build Alternative 2b. Build Alternatives 2a and 2b would construct five new culverts and replace or improve 21 existing culverts located beneath the roadway, fill, and embankments at depths unlikely to encounter groundwater.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Caltrans would implement AMM GEO-1, AMM GEO-2, and AMM GEO-3 for all Build Alternatives.
Seismic Hazards	No effect	Liquefaction is expected to be high in the project area due to ground shaking. However, Build Alternatives 2a and 2b would be designed in accordance with Caltrans' Standard Specifications and current Seismic Design Criteria. Construction would have no adverse effect on the geology and soils present at the project site.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Caltrans would implement AMM GEO-1, AMM GEO-2, and AMM GEO-3for all Build Alternatives.
Paleontology								
Damage to paleontological resources	No effect	Build Alternatives 2a and 2b would require excavations greater than 4 feet for installation of retaining, signs, and sound walls. In addition, foundation work for signs, structures, underground utilities, and culvert/drainage installations could also encounter sensitive paleontological resources. Build Alternative 2b proposes pile driving during construction for installation of connector ramp footings to about 40 feet deep. Such activities would be deep enough to reach potentially unknown sensitive paleontological resources.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Caltrans would implement AMM PALEO-1, AMM PALEO-2, and AMM PALEO-3 for all Build Alternatives.
Hazardous Waste and Materials								
Exposure to hazardous materials to humans or the environment	No effect	Build Alternatives 2a and 2b would not affect known hazardous sites. Lead containing paint, asbestos-containing materials, aerially deposited lead, and treated wood waste could be encountered during Project construction. Construction would involve the use and storage of fuels, lubricants, solvents, and other possible contaminants with the potential to spill. No adverse effect would occur.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	None

Impact	No Build Alternative 1	Build Alternatives 2a and 2b	Build Alternatives 3a and 3b	Build Alternatives 4a and 4b	Build Alternatives 5a and 5b	Build Alternatives 6a and 6b	Build Alternatives 7a and 7b	Avoidance, Mitigation, and/or Minimization Measures (AMMs)
Air Quality								
Project-level conformity CO	No effect	Build Alternatives 2a and 2b would have similar effects on conformity	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	None
Project-level conformity PM2.5	No effect	The effects would be like those of Build Alternative 1.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Effects would be slightly less than described under Build Alternatives 2a and 2b,	Effects would be slightly less than described under Build Alternatives 2a and 2b,	Effects would be slightly less than described under Build Alternatives 2a and 2b,	None
Roadway Vehicle Emissions/Criteria Pollutant Emissions	No effect	The effects would be like those of Build Alternative 1.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	None
Noise								
Operational noise and vibration	No effect	The noise level increases from existing conditions are not considered substantial per the Caltrans Noise Analysis Protocol for New Highway Construction	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	None
Construction noise and vibration	No effect	No adverse noise impacts from construction are anticipated for Build Alternative 2a or 2b because construction would be conducted in accordance with Caltrans Standard Specifications Section 14-8.02. Build Alternative 2b alternatives would have greater noise and vibration impacts because of the use of pile drivers for the ramp construction.	Construction effects would be like effects described under Build Alternatives 2a and 2b.	Construction effects would be like effects described under Build Alternatives 2a and 2b.	Construction effects would be like effects described under Build Alternatives 2a and 2b.	Construction effects would be like effects described under Build Alternatives 2a and 2b.	Construction effects would be like effects described under Build Alternatives 2a and 2b.	Caltrans would implement AMM NOI-1 for all Build Alternatives.
Energy								
Energy demands	No effect	Build Alternatives 2a and 2b would consume energy and fuel for construction and would generate new vehicular traffic trips, as it would involve construction of additional managed lanes causing increased vehicle miles traveled (VMT). When balancing energy used during construction and operation against energy saved by relieving congestion and other transportation efficiencies, the project would not have substantial energy effects. Therefore, no adverse permanent effects are anticipated.	Construction effects would be like effects described under Build Alternatives 2a and 2b. Permanent effects would be slightly less than described under Build Alternatives 2a and 2b.	Construction effects would be like effects described under Build Alternatives 2a and 2b. Permanent effects would be slightly less than described under Build Alternatives 2a and 2b.	Construction effects would be like effects described under Build Alternatives 2a and 2b. Permanent effects would be slightly less than described under Build Alternatives 2a and 2b.	Construction effects would be like effects described under Build Alternatives 2a and 2b. Permanent effects would be slightly less than described under Build Alternatives 2a and 2b.	Construction effects would be like effects described under Build Alternatives 2a and 2b. Permanent effects would be slightly less than described under Build Alternatives 2a and 2b.	Caltrans would implement AMM Energy-1 for all Build Alternatives.
Natural Communities								
Natural Communities	No effect	Build Alternatives 2a and 2b would result in the temporary impacts of up to 2.12 acres of riparian habitat. Minimal permanent effects.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Caltrans would implement AMM BIO-1 for all Build Alternatives.

Impact	No Build Alternative 1	Build Alternatives 2a and 2b	Build Alternatives 3a and 3b	Build Alternatives 4a and 4b	Build Alternatives 5a and 5b	Build Alternatives 6a and 6b	Build Alternatives 7a and 7b	Avoidance, Mitigation, and/or Minimization Measures (AMMs)
Wetland and Other Waters								
Effects on Wetlands and Other Waters	No effect	Project construction would result in the temporary disturbance of 0.006 acre (15.70 linear feet) and the permanent impact of 0.079 acre (377.97 linear feet) of jurisdictional waters.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Caltrans would implement AMMs BIO-2 through BIO-4 for all Build Alternatives.
Plant Species								
Effects on Special-Status Plants	No effect	Build Alternatives 2a and 2b may result in the reduction in habitat suitability and quality from the introduction or spread of non-native plant species should Bolander's water-hemlock and wooly rose mallow occur.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	None
Animal Species								
Animal species	No effect	15 non-listed special status wildlife species were identified as potentially occurring in the project region. Project construction could result in the temporary or permanent loss of special status species habitat, displacement of individuals, or disturbance.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Caltrans would implement AMM BIO-5 through BIO-15 for all Build Alternatives.
Effects on Migratory Birds	No effect	Tree and vegetation removal would result in a temporary loss of nesting and foraging habitat for raptors, nesting birds, and migratory birds. Effects would be temporary and minimal.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Caltrans would implement AMM BIO-6 through AMM BIO-11 for all Build Alternatives.
Threatened and Endangered Species								
Effects on threatened and endangered species	No effect	29 threatened or endangered species were identified as potentially occurring in the project region. Project construction could result in the temporary or permanent loss of special status species habitat, displacement of individuals, or disturbance.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Caltrans would implement AMM BIO-6, AMM BIO-16 through BIO-28 for all Build Alternatives.
Invasive Species								
Introduction and spread of invasive plant species	No effect	Build Alternative 2 could contribute to the spread or introduction of invasive species.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	Same as effects described under Build Alternatives 2a and 2b.	None

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Table S-2 SUMMARY OF CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) IMPACTS

Environmental Topic	No Build Alternative 1	Build Alternatives 2a and 2b	Build Alternatives 3a and 3b	Build Alternatives 4a and 4b	Build Alternatives 5a and 5b	Build Alternatives 6a and 6b	Build Alternatives 7a and 7b
Aesthetics							
a) Have a substantial adverse effect on a scenic vista.	No Impact	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
c) In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	No Impact	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.
d) Would the project create a new source of substantial light or glare that would adversely affect day or nighttime public views?	No Impact	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.

Environmental Topic	No Build Alternative 1	Build Alternatives 2a and 2b	Build Alternatives 3a and 3b	Build Alternatives 4a and 4b	Build Alternatives 5a and 5b	Build Alternatives 6a and 6b	Build Alternatives 7a and 7b
Agriculture and Forest Resources							
Agriculture and Forest Resources	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Air Quality							
a) Conflict with or obstruct implementation of the applicable air quality plan?	No Impact	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.
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?	No Impact	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.
c) Expose sensitive receptors to substantial pollutant concentrations?	No Impact	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	No Impact	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.

Environmental Topic	No Build Alternative 1	Build Alternatives 2a and 2b	Build Alternatives 3a and 3b	Build Alternatives 4a and 4b	Build Alternatives 5a and 5b	Build Alternatives 6a and 6b	Build Alternatives 7a and 7b
Biological Resources							
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	No Impact	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.
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 Game or US Fish and Wildlife Service?	No Impact	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	No Impact	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.

Environmental Topic	No Build Alternative 1	Build Alternatives 2a and 2b	Build Alternatives 3a and 3b	Build Alternatives 4a and 4b	Build Alternatives 5a and 5b	Build Alternatives 6a and 6b	Build Alternatives 7a and 7b
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	No Impact	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	No Impact	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	No Impact	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.
Cultural Resources							
a) Cause a substantial adverse change in the significance of a historical resource pursuant to in §15064.5?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? or	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.

Environmental Topic	No Build Alternative 1	Build Alternatives 2a and 2b	Build Alternatives 3a and 3b	Build Alternatives 4a and 4b	Build Alternatives 5a and 5b	Build Alternatives 6a and 6b	Build Alternatives 7a and 7b
Energy							
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	No Impact	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
Geology and Soils							
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.	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
ii) Strong seismic ground shaking?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
iii) Seismic-related ground failure, including liquefaction?	No Impact	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.

Environmental Topic	No Build Alternative 1	Build Alternatives 2a and 2b	Build Alternatives 3a and 3b	Build Alternatives 4a and 4b	Build Alternatives 5a and 5b	Build Alternatives 6a and 6b	Build Alternatives 7a and 7b
iv) Landslides?	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
b) Result in substantial soil erosion or the loss of topsoil?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
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?	No Impact	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	No Impact	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.

Environmental Topic	No Build Alternative 1	Build Alternatives 2a and 2b	Build Alternatives 3a and 3b	Build Alternatives 4a and 4b	Build Alternatives 5a and 5b	Build Alternatives 6a and 6b	Build Alternatives 7a and 7b
Greenhouse Gas Emissions							
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
Hazards and Hazardous Materials							
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.

Environmental Topic	No Build Alternative 1	Build Alternatives 2a and 2b	Build Alternatives 3a and 3b	Build Alternatives 4a and 4b	Build Alternatives 5a and 5b	Build Alternatives 6a and 6b	Build Alternatives 7a and 7b
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	No Impact	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.
Hydrology and Water Quality							
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.

Environmental Topic	No Build Alternative 1	Build Alternatives 2a and 2b	Build Alternatives 3a and 3b	Build Alternatives 4a and 4b	Build Alternatives 5a and 5b	Build Alternatives 6a and 6b	Build Alternatives 7a and 7b
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such the project may impede sustainable groundwater management of the basin?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
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 off-site; iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	No Impact	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.	Less-than-significant impact with mitigation.
iv) impede or redirect flood flows?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.

Environmental Topic	No Build Alternative 1	Build Alternatives 2a and 2b	Build Alternatives 3a and 3b	Build Alternatives 4a and 4b	Build Alternatives 5a and 5b	Build Alternatives 6a and 6b	Build Alternatives 7a and 7b
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
Land Use and Planning							
a) Physically divide an established community?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
Mineral Resources							
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact

Environmental Topic	No Build Alternative 1	Build Alternatives 2a and 2b	Build Alternatives 3a and 3b	Build Alternatives 4a and 4b	Build Alternatives 5a and 5b	Build Alternatives 6a and 6b	Build Alternatives 7a and 7b
Noise							
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?	No Impact	Less-than-significant impact with mitigation	Less-than-significant impact with mitigation	Less-than-significant impact with mitigation	Less-than-significant impact with mitigation	Less-than-significant impact with mitigation	Less-than-significant impact with mitigation.
b) Generation of excessive groundborne vibration or groundborne noise levels?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
Population and Housing							
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	No Impact	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.	Less than significant impact.

Environmental Topic	No Build Alternative 1	Build Alternatives 2a and 2b	Build Alternatives 3a and 3b	Build Alternatives 4a and 4b	Build Alternatives 5a and 5b	Build Alternatives 6a and 6b	Build Alternatives 7a and 7b
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
Public Services							
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: Fire protection? Police protection? Schools? Parks? Other public facilities?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
Recreation							
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact

Environmental Topic	No Build Alternative 1	Build Alternatives 2a and 2b	Build Alternatives 3a and 3b	Build Alternatives 4a and 4b	Build Alternatives 5a and 5b	Build Alternatives 6a and 6b	Build Alternatives 7a and 7b
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
Transportation							
a) Conflict with program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)	No Impact	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable	Significant and unavoidable
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
d) Result in inadequate emergency access	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.

Environmental Topic	No Build Alternative 1	Build Alternatives 2a and 2b	Build Alternatives 3a and 3b	Build Alternatives 4a and 4b	Build Alternatives 5a and 5b	Build Alternatives 6a and 6b	Build Alternatives 7a and 7b
Tribal Cultural Resources							
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k),	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
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.	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.

Environmental Topic	No Build Alternative 1	Build Alternatives 2a and 2b	Build Alternatives 3a and 3b	Build Alternatives 4a and 4b	Build Alternatives 5a and 5b	Build Alternatives 6a and 6b	Build Alternatives 7a and 7b
Utilities and Service Systems							
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.

Environmental Topic	No Build Alternative 1	Build Alternatives 2a and 2b	Build Alternatives 3a and 3b	Build Alternatives 4a and 4b	Build Alternatives 5a and 5b	Build Alternatives 6a and 6b	Build Alternatives 7a and 7b
Wildfire							
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project: a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.

Environmental Topic	No Build Alternative 1	Build Alternatives 2a and 2b	Build Alternatives 3a and 3b	Build Alternatives 4a and 4b	Build Alternatives 5a and 5b	Build Alternatives 6a and 6b	Build Alternatives 7a and 7b
Mandatory Findings of Significance							
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
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)? [confirmation pending]	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? [confirmation pending]	No Impact	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.	Less-than-significant impact.

Table S-3. Permits, Reviews, and Approvals Anticipated to be Required for Project Construction

Agency	Permits, Licenses, Agreements, and Certifications	Status
Federal Highway Administration	Air Quality Conformity Determination	Regional will be met by listing in the Regional Transportation Plan and its associated regional emissions analysis.
United States Fish and Wildlife Service	Endangered Species Act, Section 7 Biological Opinion for Valley Elderberry Longhorn Beetle	Issued April 12, 2024
United States Army Corps of Engineers	Clean Water Act Section 404 Permit/408 Permit	Permit application will be submitted if required after the environmental document is approved.
California Department of Fish and Wildlife	1602 Agreement for Streambed Alteration	Permit application and consultation will be submitted and initiated after the environmental document is approved.
	California Endangered Species Act Consultation for Giant Garter Snake	Consultation will be submitted and initiated after the environmental document is approved.
	Incidental Take Permit (ITP) for active Swainson's hawk nest(s)	If needed, an ITP will be obtained prior to initiation of any activities that are likely to result in take.
Central Valley Regional Water Quality Control Board	Clean Water Act Section 401 Water Quality Certification	Permit application will be submitted if required after the environmental document is approved.
	Construction General Permit	Issued during the final design phase
Central Valley Flood Protection Control Board	Encroachment Permit	Issued during the final design phase
Federal Highway Administration	Air Quality Conformity Determination	FHWA determined not a POAQC on October 18, 2021; reaffirmed by IAC 4/26/2024
State Historic Preservation Officer (SHPO)	Concurrence on Eligibility Determinations/Finding of Effect	SHPO concurred with the findings on January 12, 2022. As such, the undertaking would not result in any Section 4(f) use or de minimis finding to any historic properties or historical resources, regardless of alternative.