State Route 46 Corridor Improvement Project
Antelope Grade Section

On State Route 46 in San Luis Obispo and Kern Counties

05-SLO/KER-46-PM 57.3/60.8, 0.0/0.4

Project EA: 05-3307E, Project ID: 0518000075

State Clearinghouse Number: 2003041036

Subsequent Initial Study with Proposed Mitigated Negative Declaration/ Updated Environmental Assessment

Prepared by the

State of California Department of Transportation

The environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 U.S. Code 327 and the Memorandum of Understanding dated May 27, 2022 and executed by the Federal Highway Administration and Caltrans.

September 2023

General Information About This Document

What's in this document:

The California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration, has prepared this Subsequent Initial Study/Updated Environmental Assessment which examines the potential environmental impacts of the proposed Antelope Grade Section of the State Route 46 Corridor Improvement Project in San Luis Obispo and Kern counties in California and the changes that have been made to the design since finalization of the Mitigated Negative Declaration/Finding of No Significant Impact in 2005 (*2005 ND/FONSI*).

What you should do:

- Please read the document. A copy of this document and the 2005 ND/FONSI are available for review at the Caltrans District Office at 50 Higuera Street, San Luis Obispo, California 93401, Monday through Friday from 8:00 a.m. to 5:00 p.m. Additional copies are located at the Shandon Library at 195 North 2nd Street in Shandon, California and the Paso Robles Library at 1000 Spring Street in Paso Robles, California. If you would like to receive a printed version of these documents, please contact Dianna Beck at 805-459-9406 or by email at Dianna.Beck@dot.ca.gov.
- Attend the virtual public information meeting on October 2, 2023. The meeting details can be found on the project website at https://dot.ca.gov/caltrans-near-me/district-5.
- Tell us what you think. If you have any comments regarding the proposed project, please attend the virtual public information meeting and/or send your written comments to Caltrans by the deadline. Submit comments via U.S. mail to: Dianna Beck, District 5 Environmental, California Department of Transportation, 50 Higuera Street, San Luis Obispo, California 93401. Submit comments via email to: Dianna.Beck@dot.ca.gov.
- Submit comments by the deadline: October 13, 2023, at 5:00 p.m.

What happens next:

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

Accessibility Assistance

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State Clearinghouse Number: 2003041036
05-SLO/KERN-46-57.3/60.8, 0.0/0.4
EA: 05-3307E, Project ID: 0518000075

Convert the existing two-lane highway to a four-lane divided expressway on State Route 46 from post mile 57.3 to post mile 0.4 (Antelope Grade Section) in San Luis Obispo and Kern Counties

Subsequent INITIAL STUDY with Proposed Mitigated Negative Declaration/Updated ENVIRONMENTAL ASSESSMENT

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

THE STATE OF CALIFORNIA
Department of Transportation

Responsible Agencies: U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, California Transportation Commission, California Department of Fish and Wildlife, State Water Resources Control Board

Jason Wilkinson

Jason Wilkinson
Acting Deputy District Director, Environmental Analysis, District 5
California Department of Transportation
CEQA and NEPA Lead Agency

9/6/23

Date

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DRAFT
Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

State Clearinghouse Number: 2003041036

District-County-Route-Post Mile: 05- SLO/KERN-46-57.3/60.8, 0.0/0.4

EA/Project Number: 05-3307E/0518000075

Project Description

The California Department of Transportation (Caltrans) proposes to convert a 3.6-mile portion of State Route 46 in San Luis Obispo and Kern counties to an expressway. The project would construct a four-lane expressway with a 62-foot median on a new alignment that roughly parallels the existing highway corridor to the north. The project would connect the existing four-lane expressway section in Kern County with the four-lane expressway currently under construction, the Wye segment, creating a continuous east-west corridor of four-lane expressway from Interstate 5 to U.S. 101.

Determination

This proposed Mitigated Negative Declaration is included to give notice to interested agencies and the public that it is Caltrans' intent to adopt a Mitigated Negative Declaration for this project. This does not mean that Caltrans' decision regarding the project is final. This Mitigated Negative Declaration 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 project would have no effect on cultural resources, forest resources, land use and planning, mineral resources, noise levels, population and housing, public services, parks and recreation facilities, tribal cultural resources, and transportation.

The project would have less than significant effects to air quality, agricultural land, energy, geology and soils, hazards and hazardous materials, hydrology and water quality, greenhouse gas emissions, utilities and service systems, and wildfire.

With the incorporation of mitigation measures listed below, the project would not have a significant effect on aesthetics/visual resources, biological resources, and paleontological resources:

Aesthetics/Visual Resources

- Mitigation Measure AES 1 – Preserve as much existing vegetation as possible. Prescriptive clearing and grubbing and grading techniques which save the most existing vegetation possible shall be employed.
- Mitigation Measure AES 2 – Revegetate all disturbed areas with native plant species appropriate to each specific work location.
- Mitigation Measure AES 3 – Replacement planting shall include aesthetic considerations as well as the inherent biological goals. Revegetation shall include native trees and plants as determined by Caltrans District 5 Biology and Landscape Architecture. Revegetation shall occur at the maximum extent horticulturally viable and maintained until established.
- Mitigation Measure AES 4 – All visible concrete drainage elements including but not limited to headwalls, drain inlet aprons, etc. should be colored to blend with the surroundings and reduce reflectivity. The specific colors of these concrete elements shall be determined by Caltrans District 5 Landscape Architecture.
- Mitigation Measure AES 5 – All visible metal drainage components related to down drains and inlets, including but not limited to flared end sections, connectors, anchorage systems, safety cable systems, etc. should be darkened or colored to blend with the surroundings and reduce reflectivity. The specific color shall be determined by Caltrans District 5 Landscape Architecture.
- Mitigation Measure AES 6 – The Type 842 Bridge Barrier and related components shall be colored and/or darkened to blend with the natural setting. The specific color shall be determined by Caltrans District 5 Landscape Architecture.
- Mitigation Measure AES 7 – All metal roadside elements associated with the bridges including but not limited to guardrail, guardrail transitions, and end treatments shall be stained or darkened to be visually compatible with the rural setting. The color shall be determined and approved by District 5 Landscape Architecture.
- Mitigation Measure AES 8 – The earthen berm shall be constructed to appear as naturally occurring as possible. The height and length of the berm shall be the minimum required. Side slopes shall be constructed as flat as possible, contour grading shall be used, and the alignment shall be subtly varied.
- Mitigation Measure AES 9 – The height of the earthen berm shall not block views of the surrounding hillsides or horizon lines. Berms shall have undulating profiles, footprints, and side slopes to replicate a natural landform.
- Mitigation Measure AES 10 – The earthen berm shall be constructed in such a way that it does not require the addition of guardrail or concrete barrier.
- Mitigation Measure AES 11 – Following construction, re-grade and re-contour all new construction staging areas and other temporary uses as necessary to match the surrounding pre-project topography.

Biological Resources

- Mitigation Measure WET 2 – Restoration for impacts to jurisdictional waters shall occur at a 1 to 1 ratio (acreage) for temporary impacts and compensatory mitigation shall occur at a 3 to 1 ratio (acreage) for permanent impacts. Restoration and mitigation shall be achieved through onsite restoration (re-establishment) and/or pursuing purchase of offsite mitigation credits from an in-lieu fee program, depending on the impact location within the project area and in accordance with the associated permit requirements.
- Mitigation Measure WET 3 – Impacts to red willows in jurisdictional areas shall be replaced at a minimum of three replacement trees for every tree with a trunk greater than 4 inches in diameter at breast height removed. Final compensatory mitigation will be determined during the consultation process with the regulatory agencies.
- Mitigation Measure TES 16 – Final compensatory mitigation shall be determined in coordination with the California Department of Fish and Wildlife during the California Endangered Species Act 2081 Incidental Take Permit permitting process. Caltrans anticipates that California tiger salamander mitigation credits will be purchased from the Palo Prieto Conservation Bank.
- Mitigation Measure TES 49 – Final compensatory mitigation shall be determined in coordination with the California Department of Fish and Wildlife during the California Endangered Species Act 2081 Incidental Take Permit permitting process. Caltrans anticipates that San Joaquin kit fox mitigation credits will be purchased from the Palo Prieto Conservation Bank.

Paleontological Resources

- Mitigation Measure PALEO 1 – Caltrans shall retain a Principal Paleontologist that meets Caltrans qualifications to prepare or oversee preparation of a Paleontological Mitigation Plan during the project Plans, Specifications, and Estimates phase once more detailed project plans are available. Elements of the Paleontological Mitigation Plan should conform to Caltrans guidelines (Standard Environmental Reference, Volume 1, Chapter 8).
- Mitigation Measure PALEO 2 – Caltrans shall retain a Principal Paleontologist that meets Caltrans qualifications to implement the prepared Paleontological Mitigation Plan during construction. Implementation of the Paleontological Mitigation Plan will follow Caltrans standards and involve:
    - Conducting Worker Environmental Awareness Training.
    - Paleontological monitoring of earthwork operations that disturb high paleontological potential deposits. Monitoring will be conducted by qualified paleontological monitors under the direction of the Principal Paleontologist. Monitors will inspect exposures and record data. The Principal Paleontologist has the authority to adjust the level of effort for monitoring based on the results in the field.

- Evaluating fossil discoveries and collecting scientifically significant fossils. Paleontological monitors have the authority to temporarily halt or divert earthwork in the vicinity of a fossil discovery.
- Preparation, identification, and cataloguing collected fossils. Fossils will be curated into an accredited scientific repository as designated in the Paleontological Mitigation Plan.
- Preparation of a final Paleontological Mitigation Report that summarizes results of construction monitoring and conforms with Caltrans guidelines. Copies of the report shall be filed with Caltrans and the designated repository (if fossils are discovered).

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Jason Wilkinson
Acting Deputy District Director, Environmental Analysis, District 5
California Department of Transportation

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Date

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Chapter 1 Proposed Project

1.1 Introduction

Initial planning for the conversion of a 63-mile corridor along State Route 46 east from U.S. 101 to State Route 99 from a two-lane highway to a four-lane expressway began in 1998 with the adoption of the California Department of Transportation (Caltrans) Interregional Transportation Strategic Plan. Since then, Caltrans and our partners have worked toward the conversion of the State Route 46 corridor through 12 previous corridor segments.

On May 12, 2005, Caltrans approved the Initial Study with Negative Declaration/Environmental Assessment with Finding of No Significant Impact (*2005 ND/FONSI*) for the San Luis Obispo and Kern Counties State Route 46 4-Lane Widening Project from post mile 55.1 in San Luis Obispo County to post mile 33.5 in Kern County. This included three separate projects that covered a 39.3-mile segment of State Route 46. The majority of two projects totaling approximately 35.9 miles has been constructed by District 6, starting near the Kern County line heading east toward the community of Lost Hills and ending at Interstate 5 at the West Side Canal. One remaining project, referred to as Project 1 or the San Luis Obispo Project in the *2005 ND/FONSI*, was reevaluated during the design phase and changes to the build alternative were developed.

The Antelope Grade North Alternative is now proposed to avoid a known cultural site, reduce extraordinarily high utility relocation costs associated with expanding the existing alignment, and reduce the grade to increase the design speed to be consistent with the surrounding segments. A subsequent Mitigated Negative Declaration was determined to be the appropriate environmental document under the California Environmental Quality Act Guidelines Section 15162 due to substantial changes of the proposed project as described in Section 1.4.1 Build Alternative. However, this subsequent document is intended to be a supplement to the prior environmental document; there are sections in the *2005 ND/FONSI* that have not changed as a result of the proposed project, and the conclusions made remain the same after further environmental review. The *2005 ND/FONSI* sections that remain unchanged are incorporated by reference in this Subsequent Initial Study/Updated Environmental Assessment in accordance with the California Environmental Quality Act Guidelines Section 15150.

This Subsequent Initial Study/Updated Environmental Assessment evaluates the newly proposed Build Alternative, also referred to as the Antelope Grade North Alternative, as well as analyzes changes in the environmental setting, best management practices, minimization and mitigation measures, and laws, regulations, and guidance since finalization of the *2005 ND/FONSI*. A

summary of the changes identified is provided in Section 2.1 and the changes are discussed in more detail in each resource section within Chapter 2.

The State Route 46 4-Lane Widening Project was jointly funded by Caltrans and the Kern Council of Governments using Proposition 1B funding for construction of previous segments. This project is included in the 2020 Federal Statewide Transportation Improvement Program with Interregional Transportation Strategic Plan funds allocated to a portion of the total project cost. The project is included in the 2019 San Luis Obispo Council of Governments Regional Transportation Plan and is listed as a cost-constrained highway project. Additional funding will be needed as the project moves forward to begin construction. Construction is currently anticipated in 2026 and is estimated to cost approximately $118,800,000.

NEPA Assignment

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

California participated in the “Surface Transportation Project Delivery Pilot Program” (Pilot Program) pursuant to 23 U.S. Code 327, for more than five years, beginning July 1, 2007, and ending September 30, 2012. MAP-21 (Public Law 112-141), signed by President Barack Obama on July 6, 2012, amended 23 U.S. Code 327 to establish a permanent Surface Transportation Project Delivery Program. As a result, Caltrans entered into a Memorandum of Understanding pursuant to 23 U.S. Code 327 with the Federal Highway Administration. The NEPA Assignment Memorandum of Understanding became effective October 1, 2012, and was renewed on May 27, 2022, for a term of 10 years. In summary, Caltrans continues to assume Federal Highway Administration responsibilities under NEPA and other federal environmental laws in the same manner as was assigned under the Pilot Program, with minor changes. With NEPA Assignment, the Federal Highway Administration assigned and Caltrans assumed all of the U.S. Department of Transportation Secretary’s responsibilities under NEPA. This assignment includes projects on the State Highway System and Local Assistance projects off of the State Highway System within the State of California, except for certain categorical exclusions that the Federal Highway Administration assigned to Caltrans under the 23 U.S Code 326 Categorical Exclusion Assignment Memorandum of Understanding, projects excluded by definition, and specific project exclusions.

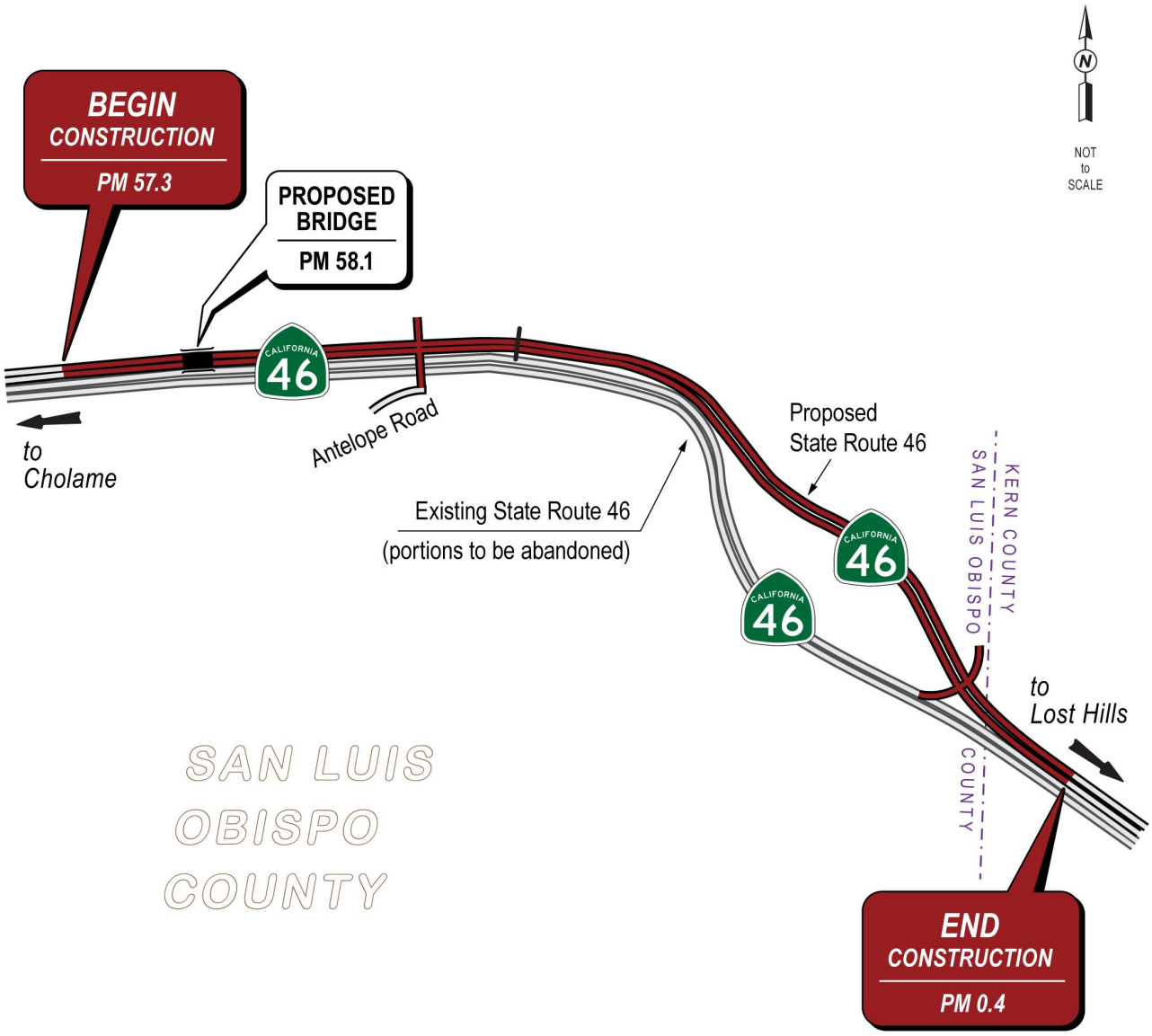
The Federal Highway Administration evaluated the 2005 Environmental Assessment and determined that the project would not have a significant impact on the human environment and concurrently made a Finding of No

Significant Impact determination based on this assessment. The Finding of No Significant Impact was signed by the Federal Highway Administration on May 12, 2005, prior to Caltrans assuming NEPA Assignment under the NEPA Assignment Memorandum of Understanding. However, now that Caltrans assumes federal lead under NEPA, this Updated Environmental Assessment has been evaluated and signed by Caltrans.

See Figures 1-1 and 1-2 for vicinity and location maps of the proposed project.

Figure 1-1 Project Vicinity Map

Figure 1-2 Project Location Map



1.2 Purpose and Need

Construction of the Antelope Grade Section would improve the State Route 46 corridor by converting the existing two-lane conventional highway to a four-lane divided expressway. The purpose and need of the project remain the same as what is described in the *2005 ND/FONSI* and is described in more detail in the following sections. This expressway conversion will provide safe passing opportunities, reduce driver frustration associated with speed differentials between passenger vehicles and trucks, improve the facilitation

and reliability of goods movement, and provide system resiliency by enhancing an east-west highway connector that is critical to the statewide freight system.

1.2.1 Purpose

The purpose of the project is to improve safety, reduce the potential for severe collisions, relieve traffic congestion, improve level of service, and provide route continuity on State Route 46.

1.2.2 Need

State Route 46 is a heavily used east-west freight corridor. The project is needed because there are currently limited opportunities for passing slow-moving trucks climbing the steep grades, leading to traffic delay for motorists and increased collision severity.

1.2.3 Collision History

Limited passing opportunities cause traffic to back up behind slower moving vehicles along the remaining two-lane sections of the corridor. Impatient drivers often take unnecessary risks as they attempt to pass slower vehicles by using the opposite lane, and distracted drivers may inadvertently drift into oncoming traffic. There is currently no center median to divide the lanes to reduce these conflicts, and the existing 4-foot shoulder widths are below current design standards.

Adding a lane in each direction would help eliminate the traffic conflicts by providing a safer opportunity to pass slower vehicles. Four-lane roadways generally have fewer collisions per mile than two-lane conventional highways. Separating the eastbound and westbound traffic with a 62-foot-wide divided median will further reduce the potential for head-on collisions, allow for safe recovery of vehicles, and reduce consequences of lane departures. Also, the proposed intersection improvements would help increase safety for vehicles crossing traffic or turning left onto local access roads. Proposed safety features include safety edge technology on roadway shoulders, left and right edge rumble strips, partial access control, significant reductions in conflict points, and channelized turn lanes, acceleration lanes, and deceleration lanes. The project would increase shoulder widths to current design standards to provide a space for lane departure recovery as well as to facilitate emergency stopping and emergency vehicle operations. This would also reduce impacts from trucks and other vehicles experiencing brake failure and other mechanical problems.

Table 1-1 shows the actual number of collisions within the project limits compared to the average collision rate statewide for similar highway segments. Collision data is broken into two segments based on the county boundary; collision rates in Kern County have been adjusted to reflect a spot location less than 0.5 mile in length. The collision history from January 1, 2018 to December 31, 2022 indicates the rate for fatal collisions and the combined rate of fatal and injury crashes is below the statewide average for similar facilities.

Table 1-1 Comparison of Collision Rates

Data from January 1, 2018 to December 31, 2022	Total Number of Collisions	Actual Collision Rate (per million vehicle miles)	Statewide Average Collision Rate (per million vehicle miles)
San Luis Obispo County Post miles 57.3 to 60.8	17	Fatal Rate 0.00 Fatal + Injury 0.08 Overall Rate 0.33	Fatal Rate 0.019 Fatal + Injury 0.23 Overall Rate 0.68
Kern County Post miles 0.0 to 0.4	1	Fatal Rate 0.0 Fatal + Injury 0.0 Overall Rate 0.07	Fatal Rate 0.016 Fatal + Injury 0.23 Overall Rate 0.55

There were 18 total reported collisions within the project study limits during the 5-year analysis period, including 0 fatal, 4 injury, 13 property damage only, 7 multi-vehicle, 9 dry condition, 1 wet condition, 9 dark/dusk/dawn lighting condition, and 4 daylight condition collisions. The risk of collision would be substantially reduced by building a divided highway with a standard median width.

1.2.4 Traffic Congestion

Peak-hour traffic congestion has diminished substantially within the other completed sections along State Route 46 since improvements were constructed. This area does not see a high number of commuters that would cause typical directional “rush hour” traffic. Traffic is mostly interregional, serving a substantial number of recreational visitors and a high level of goods movement to and from the Central Valley.

The remaining two-lane section of the corridor at Antelope Grade creates a bottleneck and continues to experience peak hour congestion at varying times depending on the day of the week. Traffic tends to be the heaviest on Friday and Monday in the winter months and Friday, Saturday, Sunday, and Monday during the summer months, as show in Table 1-2.

Table 1-2 Peak Hour by Direction on Antelope Grade Section

Baseline Traffic Counts	Eastbound Direction	Westbound Direction
Winter Morning Peak Time	10:00 a.m. to 11:00 a.m. 11:00 a.m. to 12:00 p.m.	11:00 a.m. to 12:00 p.m.
Winter Morning Peak Days	Monday, Friday	Friday, Saturday
Winter Afternoon Peak Time	2:00 p.m. to 3:00 p.m. 4:00 p.m. to 5:00 p.m.	12:00 p.m. to 1:00 p.m. 2:00 p.m. to 3:00 p.m.
Winter Afternoon Peak Days	Monday	Friday, Saturday
Summer Morning Peak Time	11:00 a.m. to 12:00 p.m.	10:00 a.m. to 11:00 p.m. 11:00 a.m. to 12:00 p.m.
Summer Morning Peak Days	Sunday, Monday	Saturday
Summer Afternoon Peak Time	2:00 p.m. to 3:00 p.m. 4:00 p.m. to 5:00 p.m. 5:00 p.m. to 6:00 p.m.	3:00 p.m. to 4:00 p.m. 4:00 p.m. to 5:00 p.m. 6:00 p.m. to 7:00 p.m.
Summer Afternoon Peak Days	Sunday	Friday, Sunday

The annual average daily traffic count within the project limits increased from 7,000 vehicles per day in 2002 to 8,550 vehicles per day in 2019. Of this, about 29 percent of the traffic volume are trucks and 66 percent of the trucks are 5-axle and larger. This percentage is almost three times the statewide average (10 percent) for a two-lane conventional highway. This volume also represents the highest percentage of truck traffic seen in the Central Coast region. The projected annual average daily traffic count is 14,034 for the design year 2046, which represents an increase of 64 percent in traffic over 27 years.

Tractor-trailers and other heavy vehicles are slowed significantly when climbing the steep grades along the corridor, leading to queueing (long lines of traffic) and delays for users. The existing corridor has limited opportunities for passing the slow-moving vehicles when approaching the grade in each direction. Although the lanes are marked with a broken yellow center line to indicate passing is allowed in the opposing lane of traffic when safe, there are typically insufficient gaps in oncoming traffic to safely pass.

Level of Service was previously used to analyze traffic in the *2005 ND/FONSI,* though CEQA Guidelines Section 15064.3 now uses vehicle miles traveled to determine transportation impacts. Pursuant to the Caltrans Vehicle Miles Traveled CEQA Determinations Guidance Memorandum dated May 8, 2020, projects that reach the M020 Begin Environmental milestone prior to December 28, 2018 are not subject to vehicle miles traveled analysis

under CEQA Guidelines Section 15064.3. Level of Service is a rating in the Highway Capacity Manual that takes into account factors such as travel speed, freedom to maneuver, and proximity to other vehicles as important parameters in determining a ranking. For comparison, Level of Service conditions are defined by Caltrans as follows:

- Level of Service A: Highest quality of service. Traffic flows freely with little or no restrictions on speed or maneuverability (no delays).
- Level of Service B: Traffic is stable and flows freely. The ability to maneuver in traffic is only slightly restricted (no delays).
- Level of Service C: Few restrictions on speed. Freedom to maneuver is restricted. Drivers must be more careful making lane changes (minimal delays).
- Level of Service D: Speeds decline slightly and density increases. Freedom to maneuver is noticeably limited (minimal delays).
- Level of Service E: Vehicles are closely spaced, with little room to maneuver. Driver comfort is poor (significant delays).
- Level of Service F: Very congested traffic with traffic jams, especially in areas where vehicles have to merge (significant delays).

Table 1-3 shows the Level of Service rating presented in the *2005 ND/FONSI*. In 2021, the Caltrans Division of Traffic Operations analyzed the Level of Service rating within the project limits with and without construction of the proposed project in Table 1-4. The Level of Service has declined from a "C" rating in 2002 to an "E" rating in 2019. Analysis in the *2005 ND/FONSI* showed the rating would increase to a "B" with construction of the proposed project; the proposed Build Alternative, the Antelope Grade North Alternative, would further increase that rating to an "A."

Table 1-3 Level of Service Analysis for *2005 ND/FONSI*

2005 Analysis	Existing 2002	Forecast 2014	Forecast 2034
Annual Average Daily Traffic	7,000	9,980	18,026
Level of Service without Project	C	D	E
Level of Service with Project	Not applicable	A	B

Table 1-4 Level of Service Analysis for Antelope Grade North Alternative

Current Analysis	Existing 2019	Forecast 2026	Forecast 2046
Annual Average Daily Traffic	8,550	10,027	14,034
Level of Service without Project	E	E	E
Level of Service with Project	Not applicable	A	A

1.2.5 Route Continuity

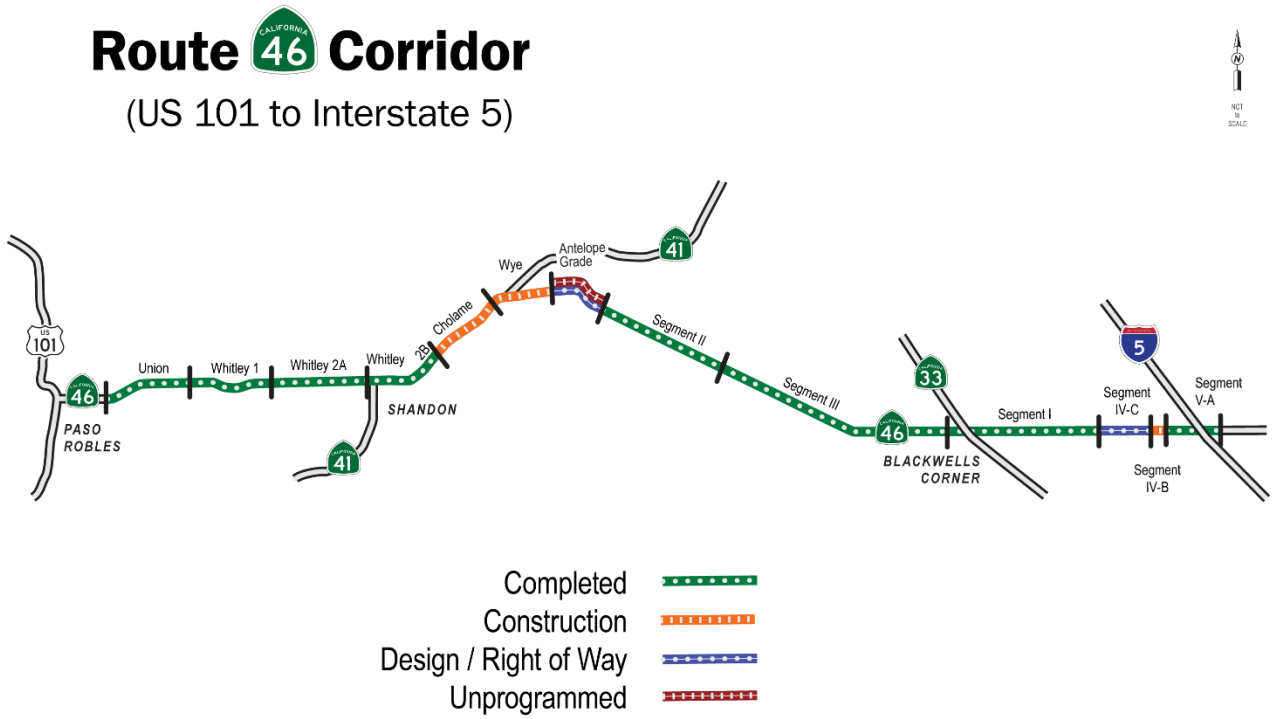
The proposed project will address increasing freight demands associated with the highway's role in connecting two of the state's largest and most productive agricultural regions, the Central Valley and the Central Coast. State Route 46 serves as a major corridor for heavy trucks and recreational traffic traveling along a 63-mile corridor from the Central Valley and Interstate 5 to the Central Coast and U.S. 101. The route supports the annual movement of $7 billion of goods shipments between the two regions, accounting for an estimated 575,000 jobs, as well as $6.7 billion in tourism within the Central Coast region. Each year, over 3.1 million tons of goods are estimated to move through the Antelope Grade segment, according to the Federal Highway Administration Freight Analysis Framework. Intrastate freight movement and resiliency are vital for the ability to increase the state's economic competitiveness by bettering freight reliability, reducing congestion, and enabling increased truck volumes. This project will facilitate intrastate freight movement by improving freight efficiency between U.S. 101 and Interstate 5.

The Central Coast and the Central Valley are significant trading partners for agricultural and other products. Also, products originating in the Central Coast rely on the State Route 46 connection to Interstate 5, Union Pacific, and railroad hubs located in the Central Valley to reach other regions throughout the state, nation, Mexico, Canada, and overseas. The State's long-term vision in the State Rail Plan for State Route 46 does not foresee any rail lines being added along the corridor between the Central Coast and Central Valley, therefore leading to a dependence on trucks for goods movement.

State Route 46 is identified as a key east-west Strategic Interregional Corridor in the Interregional Transportation Strategic Plan and a key freight route in the California Freight Mobility Plan. It is also the only highway designated as a Critical Rural Freight Corridor in the Central Coast. As discussed above, heavy trucks compose about 29 percent of the traffic volumes within the project limits. By converting the roadway to an expressway, the project would address a key freight system bottleneck to improve safety and freight efficiency along State Route 46 for freight and passenger vehicles.

As shown in Figure 1-3, all other segments along State Route 46 are either completed, currently in construction, or fully programmed for construction. Antelope Grade is the final link of this decades-long effort to improve State Route 46, leading to enhanced statewide system resiliency and interregional connectivity between the Central Coast and Central Valley. This final section would connect the existing four-lane expressway sections mentioned above with U.S. 101 in Paso Robles and span east to Interstate 5 near Lost Hills.

Figure 1-3 Corridor Map



Independent Utility and Logical Termini

Federal Highway Administration regulations (23 Code of Federal Regulations 771.111[f]) require that the action evaluated should:

1. Connect logical termini (defined as rational end points for a transportation improvement and rational end points for a review of environmental impacts) and be of sufficient length to address environmental matters on a broad scope.
2. Have independent utility or independent significance (in other words, be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made).
3. Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

As shown in Figure 1-2, the project's termini along State Route 46 allow for an evaluation of potential environmental effects for an area large enough to cover the Antelope Grade project area. The project is considered to have independent utility as the final section remaining to be improved. Further, the project would not restrict consideration of alternatives for other reasonably foreseeable local transportation improvements in proximity to this section on State Route 46.

1.3 Project Description

This section describes the proposed action and the project alternatives developed to meet the purpose and need of the project while avoiding or minimizing environmental impacts. The alternatives are the Build Alternative and the No-Build Alternative. Further details that pertain to the description of the Build Alternative components are provided in Section 1.4.1 Build Alternative.

The aim of the proposed project is to convert a 3.6-mile section of State Route 46 at Antelope Grade from a two-lane highway to a four-lane expressway. The project spans from post mile 57.3 in San Luis Obispo County to post mile 0.4 in Kern County. The Antelope Grade section will connect the proposed four-lane expressway and updated interchange at State Route 46 (known as the "Wye," currently in construction) with the expanded four-lane expressway already constructed from the Kern County boundary to Interstate 5 as part of the *2005 ND/FONSI*. Figure 1-2 shows the project vicinity map, and Figure 1-3 shows the project location map.

1.4 Project Alternatives

A Build Alternative and a No-Build Alternative are under consideration for this project.

1.4.1 Build Alternative

Highway alignment modifications to the *2005 ND/FONSI* preferred alternative for the Antelope Grade section are being proposed to avoid a known cultural site, reduce extraordinary costs associated with utility relocation, and reduce the grade to increase the design speed to be consistent with surrounding sections. The *2005 ND/FONSI* proposed to parallel the existing highway for the entirety of the new alignment. The newly proposed Build Alternative, the Antelope Grade North Alternative, would follow the existing highway for a portion of the alignment but would deviate at the eastern portion of the highway at post mile 59.3 to the north as shown in Figure 1-4.

The Antelope Grade North Alternative would use approximately 1.5 miles of the existing two-lane highway as the eastbound lanes with two new westbound lanes constructed north of the existing highway.

The roadway would include two at-grade intersections at post mile 58.3 and post mile 60.8 with channelized turn lanes to provide driveway access to adjacent parcels. A 62-foot wide median would separate the eastbound and westbound travel lanes. Landform grading would blend the cut slopes into the surrounding topography. About 1 mile of the existing roadway from post mile 59.25 to post mile 60.15 would be abandoned and graded to the original contours. Approximately 0.67 mile of original roadway from post mile 59.7 to

60.4 within the existing right-of-way would also be abandoned and graded to the original contours. A remaining 0.5 mile of the existing roadway from post mile 60.15 to post mile 60.75 would become a local access road maintained by San Luis Obispo County for access to existing properties. See Figure 1-5 for project elements.

The existing highway has 6 percent grades, making it difficult to climb for slower moving vehicle traffic. The project would reduce the grade to a maximum grade of 3.84 percent. The grade reduction would allow for increased truck traveling speed and also increase sight distance to the current design standards.

Development of the project would require partial acquisition of approximately 109.25 acres of privately held property on 13 parcels in San Luis Obispo County and two parcels in Kern County. See Table 2-1 in Section 2.2.2 Farmland for more information on acquisitions.

The project will require approximately 2,400,000 cubic yards of cut (excavation) and fill (embankment) to construct the new alignment. The largest cut is approximately 296 feet at post mile 59.1; the largest fill slope is approximately 106 feet at post mile 59.5. The proposed earthwork is balanced, meaning that soil would not need to be imported or exported, which further reduces construction costs, air quality impacts, and energy use.

An earthen berm would be constructed on the eastern end of the proposed alignment. A berm is a mound of compacted material that can be used as a barrier. The proposed berm is intended to screen a nearby stock pond that serves as breeding habitat for special-status species from the sight and sound of the proposed roadway. Excess cut material from other areas within the project would be used to construct the berm. The finer details of the earthen berm will be refined during the subsequent design phase.

Figure 1-4 Comparison of Proposed Project with Previous Build Alternative (*2005 ND/FONSI*)

Figure 1-5 Project Elements

Drainage Crossings

The existing highway relies on several drainage culverts to convey water under the roadway from one side to the other. These culverts consist of reinforced concrete pipe or concrete box structures of various sizes.

The project proposes to replace an existing drainage culvert (Caltrans Drainage Identification 490460005812) at post mile 58.1 with one set of single-span concrete box girder bridges. Each bridge would carry two lanes for eastbound and westbound traffic with a 10-foot outside shoulder and a 5-foot inside shoulder. The eastbound bridge would be approximately 112 feet long, and the westbound bridge would be approximately 160 feet long. The bridges would each be approximately 43 feet wide. New guardrail would be added in this location to comply with safety standards. The proposed bridges would be designed to facilitate wildlife movement under the roadway. Additional detail can be found in Section 2.2.5 Visual/Aesthetics, Section 2.4 Animal Species, 2.4.5 Threatened and Endangered Species, and 2.4.2 Wetlands and Other Waters.

Sixteen drainage culverts would be installed or modified where the proposed highway crosses small streams at the locations shown in Table 1-5. This includes the addition of several concrete box culverts and 36-inch or larger reinforced concrete culvert pipe that are suitable as undercrossings for wildlife as discussed in Section 2.4 Biological Environment. Approximately six existing drainage culverts would be removed or abandoned in place where the existing highway would be abandoned, but three remaining culverts with a 24-inch diameter would stay in place along the local access road.

Table 1-5 describes the proposed modifications needed to upgrade the existing culverts as well as the culverts to be removed, in order from west to east. Rock slope protection would be placed at outlets as needed.

Table 1-5 Culvert Locations

Caltrans Drainage Identification	Site Location (Post Mile)	Proposed Activity	Detail
490460005812	58.12	Replace	Remove 42-inch culvert and replace with single-span bridge for eastbound and westbound lanes
490460005825	58.31	Replace	245-foot-long, 48-inch reinforced concrete culvert pipe
490460005855	58.59	Replace	404-foot-long, 60-inch reinforced concrete culvert pipe
490464005876	58.78	Replace	345-foot-long, 42-inch reinforced concrete culvert pipe
490464005922	59.21	Replace	219-foot-long, 36-inch reinforced concrete culvert pipe
490464005939	59.41	Replace	323-foot-long, 36-inch reinforced concrete culvert pipe
490464005932	59.50	Replace	338-foot-long, 60-inch reinforced concrete culvert pipe
To be assigned	59.60	New	620-foot-long, 36-inch reinforced concrete culvert pipe
To be assigned	59.68	New	624-foot-long, 36-inch reinforced concrete culvert pipe
To be assigned	59.82	New	426-foot-long, 36-inch reinforced concrete culvert pipe
To be assigned	60.01	New	400-foot-long, 36-inch reinforced concrete culvert pipe
To be assigned	60.08	New	425-foot-long, 36-inch reinforced concrete culvert pipe
To be assigned	60.48	New	632-foot-long, 11-foot by 11-foot concrete box culvert
To be assigned	60.74	New	88-foot-long, 3.5-foot by 2.5-foot concrete box culvert
To be assigned	60.76	New	394-foot-long, 7-foot by 6-foot concrete box culvert
500464000007	0.07	Remove	Existing 76-foot-long 24-inch double culvert
500464000019	0.19	Replace	208-foot-long, 36-inch existing double culvert, replace with double 6-foot by 5-foot concrete box culvert
490464005886	58.86	Remove	Existing 140-foot-long, 24-inch culvert
490464005950	59.50	Remove	Existing 135-foot-long, 24-inch culvert
490464005958	59.58	Remove	Existing 195-foot-long, 24-inch culvert
490460005986	59.86	Remove	Existing 85-foot-long, 36-inch culvert
490464006008	60.08	Remove	Existing 95-foot-long, 36-inch culvert

Geotechnical Investigations

Prior to final design of the project, more detailed subsurface geotechnical investigation may be required to evaluate existing soil and site conditions and to inform design. Vertical borings would be drilled throughout the project area to collect soil samples for testing and classification, and to develop a subsurface soil profile. Borings would be located around the proposed bridge

location and areas where grading is proposed to determine the type of rock or subsurface material, how fractured it is, and the level of difficulty to excavate.

The subsurface borings would be obtained via a truck-mounted auger and associated support vehicles. Access to the boring locations would be from existing roads and driving within the proposed project footprint. Soil cuttings would be removed from the site for disposal. The boreholes would be abandoned and sealed in accordance with state requirements upon completion. Specific boring locations will be evaluated by Caltrans District 5 Environmental as the project design is refined.

1.4.2 No-Build (No-Action) Alternative

The No-Build Alternative would not expand any portion of the existing two-lane highway to a divided four-lane expressway in the Antelope Grade section. This alternative would not alleviate traffic congestion or bring the roadway up to design standards for safety.

The No-Build Alternative would not result in any construction or changes to existing conditions. Therefore, it would not result in any temporary or permanent impacts to environmental resources as discussed in Chapter 2.

The No-Build Alternative does not satisfy the purpose and need for the project. As discussed in the Purpose and Need section above, if the improvements to State Route 46 are discontinued, the Level of Service for the Antelope Grade section would remain at a rating of “E.” An “E” rating indicates significant delays are experienced by motorists and there are nearly no safe passing opportunities as the highway is at or near capacity. This area would continue to be a bottleneck for passenger and freight vehicles traveling between the Central Coast and Central Valley. Collisions would continue to occur and have the potential to be more severe due to unsafe passing and the lack of a center median.

1.5 Alternatives Considered but Eliminated from Further Discussion

Two alternatives were considered in this subsequent analysis but eliminated from further examination as described below.

Project 1 – San Luis Obispo Project

This alternative was analyzed in the *2005 ND/FONSI* and proposed to widen the roadway by adding two lanes to the north of the existing alignment. This alternative was selected as the preferred build alternative in 2005 but has since been eliminated due to adverse impacts to a known cultural site, extraordinarily high costs associated with relocating utilities, and identified impacts to wetlands. Also, this alternative would result in below-standard

horizontal curve radii when raising the design speed from 55 miles per hour to 65 miles per hour.

Following Section 106 consultation and approval of the *2005 ND/FONSI*, Caltrans worked with the State Historic Preservation Officer to execute a Finding of Adverse Effect/Memorandum of Agreement and Treatment Plan. Adverse impacts in the identified cultural site were not able to be mitigated to below significance, so either a subsequent draft environmental impact report would be needed to proceed with the project or the project would need to be redesigned to avoid the site. Caltrans has now redesigned the project, resulting in the proposed Antelope Grade North Alternative to avoid impacts to this location.

Antelope Grade South Alternative

This alternative was considered during more recent project design in 2020. It proposed to widen the roadway to the south of the existing alignment. After further analysis by Caltrans, the Antelope Grade South Alternative was eliminated as a viable route due to required design exceptions for sharp curvature, high costs associated with utility relocation, and adverse impacts to a waterway.

1.5.1 Reversible Lanes

Assembly Bill 2542 amended California Streets and Highways code to require, effective January 1, 2017, that Caltrans, or a regional transportation planning agency, demonstrate that reversible lanes were considered when submitting a capacity-increasing project or a major street or highway lane realignment project to the California Transportation Commission for approval (California Streets and Highways Code, Section 100.015).

Reversible lanes are most appropriate in corridors with high directional splits. Substantially higher volumes of vehicles traveling in one direction are needed for this type of treatment. While the highway does see peak periods of traffic that tend to favor one direction over the other during the weekends, these periods last for upwards of 12 hours depending on the time of year, making it challenging to determine the operating hours for a reversible lane. The existing corridor is a two-lane conventional highway with no median, making it impractical to consider a reversible lane for this project.

1.6 Standard Measures and Best Management Practices Included in All Build Alternatives

Caltrans has developed standard measures, standard special provisions, and Best Management Practices that are implemented on all or most Caltrans projects. These measures are addressed in more detail in the Environmental

Consequences sections found in Chapter 2. The following list is relevant to this project:

- **7-1.02A General**: Contractor will comply with laws, regulations, orders, and decrees applicable to the project**.**
- **7-1.02C Emissions Reduction**: Contractor will submit a certification acknowledging compliance with emissions reduction regulations managed by the California Air Resources Board.
- **7-1.02M(2) Fire Protection**: Includes development of a fire prevention plan, which would minimize the risk of starting a wildfire during construction**.**
- **13-2 Water Pollution Control Program**: This section provides specifications for the development and implementation of a Water Pollution Control Program.
- **13-4 Job Site Management**: This section includes specifications for performing job site management work such as spill prevention and control, material management, waste management, non-stormwater management, and dewatering activities**.**
- **13-5 Temporary Soil Stabilization**: This section includes specifications for placing temporary soil stabilization materials on stockpiles or disturbed soil areas.
- **13-6 Temporary Sediment Control**: This section covers specifications for installing temporary sediment controls such as check dams and drainage inlet protections**.**
- **13-9 Temporary Concrete Washouts**: This section covers specifications for installing temporary concrete washouts to receive and dispose of concrete waste.
- **13-10 Temporary Linear Sediment Barriers:** This section covers specifications for installing temporary linear barriers to control sediment, like high-visibility fencing, fiber rolls, and temporary large sediment barriers**.**
- **14-1.02 Environmentally Sensitive Area**: Caltrans will mark areas that are environmentally sensitive. These areas cannot be entered unless authorized. If an environmentally sensitive area is breached, work near the area would stop immediately and the resident engineer would be notified.
- **14-2.03 Archaeological Resources**: If archaeological resources are discovered within or near the construction limits, the resources would not be further disturbed and all work near the discovery would stop

immediately. The area would be secured, and the resident engineer notified**.**

- **14-6.03 Species Protection**: This specification includes instructions for the protection of regulated species and their associated habitat, including migratory and nongame birds. If a protected species is discovered, work would stop near the discovery and the engineer would be notified so that Caltrans biologists could investigate the discovery and take appropriate action.

- **14-7.03 Discovery of Unanticipated Paleontological Resources**: If unanticipated paleontological resources are discovered, the resources would not be further disturbed and all work near the discovery would stop immediately. The area would be secured, and the resident engineer notified**.**

- **14-8.02 Noise Control**: Noise from work activities would be controlled and monitored. Noise would not exceed 86 decibels at 50 feet from the job site from 9:00 p.m. to 6:00 a.m.

- **14-9.02 Air Pollution Control**: The project would comply with applicable air pollution control rules, regulations, ordinances, and statutes**.**

- **14-10.02: Solid Waste Disposal and Recycling Report**: The types and amounts of solid waste taken to or diverted from landfills or reused on the project would be tracked and reported on each calendar year.

- **14-11.03 Hazardous Waste Management**: This specification outlines the procedures for the handling, storage, transport, and disposal of hazardous waste, which would comply with 22 California Code of Regulations Division 4.5**.**

- **14-11.04 Dust Control**: Excavation, transportation, and handling of material containing hazardous waste or contamination must result in no visible dust migration. When clearing, grubbing, and performing earthwork operations in areas containing hazardous waste or contamination, a water truck or tank would be provided on the job site. See Section 18 if dust palliative materials other than water are to be used.

- **14-11-06: Contractor-Generated Hazardous Waste**: This specification provides instructions to the contractor for the management of hazardous wastes that may be generated during construction such as petroleum materials, paints, stains, and wood preservatives. Instructions for the management of contaminated soils that may be created due to accidental leaks or spills are also included**.**

- **14-11.13C Safety and Health Protection Measures**: Applies to worker protective measures for potential lead exposure.

- **Transportation Management Plan:** A standard measure implemented on every Caltrans project that prescribes specific lane closures, public information programs, and other procedures to manage traffic flow through project work areas during construction periods.

1.7 Permits and Approvals Needed

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

Table 1-6 Required Permits for Project

Agency	Permit/Approval	Status
U.S. Fish and Wildlife Service	Section 7 Consultation for Threatened and Endangered Species	Biological Opinion and Incidental Take Statement must be obtained prior to construction.
U.S. Army Corps of Engineers	Section 404 Nationwide Permit for impacts to jurisdictional waters	Application for Section 404 permit expected after approval of environmental document and prior to construction.
California Department of Fish and Wildlife	Section 1602 Streambed Alteration Agreement	Application for 1602 agreement expected after approval of environmental document and prior to construction.
California Department of Fish and Wildlife	2081 Incidental Take Permit for Threatened and Endangered Species	Application for 2081 permit expected after approval of environmental document and prior to construction.
California State Water Resources Control Board	Section 401 Water Quality Certification for impacts to “Waters of the State and the U.S.” and Waste Discharge Requirements	Application for Section 401 certification and Waste Discharge Requirements expected after approval of environmental document and prior to construction.
California Transportation Commission	Vote to approve funds, to approve a route adoption, and for future consideration of funding	Following the approval of the environmental document.

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

This chapter explains impacts the project would have on the physical, biological, and socio-economic environments in the project area. It describes the existing environment that could be affected by the project, potential impacts, and avoidance, minimization, and/or mitigation measures.

As part of the environmental analysis conducted for the project, only new information or substantial changes are discussed at length. Where applicable, the analysis and findings from the *2005 ND/FONSI* are incorporated by reference. Also, several environmental issues as noted below were considered, but no adverse impacts were identified. As a result, there is no further discussion of these issues in this document.

- **Coastal Zone:** The project is not located within the Coastal Zone (California Coastal Zone Map).
- **Community Character and Cohesion:** The *2005 ND/FONSI* found that the project would not impact the local population or community. The proposed design changes would not change this finding.
- **Environmental Justice and Equity**: The findings in the *2005 ND/FONSI* remain valid. No minority or low-income populations have been identified within the project area that would be adversely affected by the project. No underserved communities exist within the footprint of the proposed project.
- **Floodplains**: The project is not located within the 100-year floodplain of Cholame Creek or other waterbodies, and there will be no impacts to the 100-year floodplain.
- **Land Use:** The findings in the *2005 ND/FONSI* remain valid; the project is consistent with existing and future land use and with state, regional, and local plans (2015 San Luis Obispo County General Plan, 2009 Kern County General Plan, 2014 and 2019 Regional Transportation Plans, 2021 Federal Transportation Improvement Program).
- **Mineral Resources**: No known mineral resources exist within the project area, therefore the findings in the *2005 ND/FONSI* remain valid.
- **Noise:** The findings in the *2005 ND/FONSI* remain valid. Although the project is a Type 1 highway project, there are no sensitive receptors within

the project area. No impacts to sensitive receptors are expected to occur as a result of the project (Noise Memorandum, March 2021).

- **Parks and Recreational Facilities and 4(f) Resources:** No historic sites, parks and recreational resources, wildlife or waterfowl refuges that meet the definition of a Section 4(f) resource exist within the project vicinity. Therefore, the project is not subject to Section 4(f) provisions of the Department of Transportation Act of 1966.
- **Population and Housing; Growth:** The findings in the *2005 ND/FONSI* remain valid. Due to existing environmental constraints, the San Luis Obispo County and Kern County General Plan land use policies and underlying zoning, and the lack of adequate existing infrastructure (such as water and sewer lines to undeveloped properties), the project is not expected to measurably accelerate growth in the project area.
- **Relocation and Real Property Acquisition**: The previous *2005 ND/FONSI* found four residences and four businesses would be affected; however, those displacements occurred in segments east of the alignment near the community of Lost Hills. The proposed project would require property acquisition from private landowners, as detailed in Section 2.2.2 Farmland. All property owners affected by the project would be compensated for this loss at a price equal to fair market value. Access to the private parcels would not be affected by the project because the project would include intersections at county roads and private driveways. No new residences or businesses exist within the Antelope Grade segment; therefore, the finding of no impact in the *2005 ND/FONSI* remains unchanged.
- **Transportation/Traffic/Senate Bill 743**: Level of Service was used to analyze traffic in the *2005 ND/FONSI*, and the findings remain valid. Updated traffic information is provided in Section 1.2.3. Pursuant to Caltrans Vehicle Miles Traveled CEQA Determinations Guidance Memorandum dated May 8, 2020, projects that reach the M020 Begin Environmental milestone prior to December 28, 2018 are not subject to vehicle miles traveled analysis under CEQA Guidelines Section 15064.3.
- **Timberland:** No forests are present within the project area (Supplemental Natural Environment Study, August 2023).
- **Wild and Scenic Rivers:** There are no wild and scenic rivers in or near the project area, according to the Wild and Scenic Rivers System list, provided by the National Park Service. Therefore, no impacts to wild and scenic rivers will occur.

2.1.1 Summary of Changes Since Finalization of *2005 ND/FONSI*

The list below includes changes that have occurred to the environmental setting, best management practices, minimization and mitigation measures, and changes in laws, regulations, and guidance since finalization of the *2005*

ND/FONSI. Additional detail on these changes can be found in each respective resource discussion in this chapter.

- San Luis Obispo County was designated as a nonattainment area for the 2008 and 2015 federal 8-hour and the state 1-hour and 8-hour ozone standards, as well as the state 24-hour and 1-year standards for respirable particulate matter or fugitive dust (PM_{10}). See Section 2.3.5 Air Quality.
- The U.S. Environmental Protection Agency finalized a rule in 2007 to reduce hazardous air pollutants from mobile sources. Nine compounds were identified as priority mobile source air toxics: 1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter, ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter. In California, sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride were also regulated. See Section 2.3.5 Air Quality.
- The California tiger salamander was listed in the California Endangered Species Act as a state threatened species in 2010. See Section 2.4.5 Threatened and Endangered Species.
- The tricolored blackbird was listed in the California Endangered Species Act as a state threatened species in 2018. See Section 2.4.5 Threatened and Endangered Species.
- The Crotch bumble bee was listed in the California Endangered Species Act as a state candidate species in 2022. See Section 2.4.5 Threatened and Endangered Species.
- The monarch butterfly was listed in the California Endangered Species Act as a state candidate species in 2020. See Section 2.4.5 Threatened and Endangered Species.
- The U.S. Fish and Wildlife Service finalized the proposed designation of critical habitat for the California red-legged frog in 2010. See Section 2.4.5 Threatened and Endangered Species.
- The CEQA Guidelines were amended in 2018 to require analysis of a project's energy usage, greenhouse gas emissions, and wildfire hazard. See Section 2.3.7 Energy, 2.3.5 Air Quality, 3.3 Climate Change, and 3.2.22 Wildfire.
- Caltrans was identified as a Municipal Separate Storm Sewer System Operator and has since been issued a National Pollutant Discharge Elimination System permit. See Section 2.3.1 Water Quality and Storm Water Runoff.
- The State Water Resources Control Board adopted policy that became effective in 2020 that defines state-regulated wetlands and outlines implementation procedures for their dredge or fill policy.

2.2 Human Environment

2.2.1 Land Use (Incorporate by Reference)

2.2.2 Farmland

Regulatory Setting

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

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

Affected Environment

The affected environment remains very similar to what was described in the *2005 ND/FONSI*. An updated Community Impacts Assessment Memorandum was prepared in August 2023 to evaluate the potential impacts to farmland due to construction of the Antelope Grade North Alternative. Information obtained from the Natural Resources Conservation Service, the California Department of Conservation, the San Luis Obispo County Planning and Building Department, and the Kern County Planning and Natural Resources Department was used in this assessment.

Agriculture is one of San Luis Obispo County's and Kern County's economic leaders. According to the California Department of Food and Agriculture, San Luis Obispo County and Kern County farms and ranches reached $9.78 million and $7.66 billion in total overall crop value in 2020, respectively.

According to the Natural Resources Conservation Service, in 2021, approximately 257,935 acres of land in San Luis Obispo County and 2,120,267 acres in Kern County were designated as farmland under the Farmland Protection Policy Act. Regional crop production between the two counties includes top crops such as wine grapes, strawberries, almonds, and pistachios in addition to the use of agricultural land for livestock grazing.

The project is in a rural setting in the northeastern corner of San Luis Obispo County and the northwestern corner of Kern County. The main land use in the project area is rural agricultural. Land use within the Antelope Grade section is zoned rural agricultural in San Luis Obispo County and exclusive agricultural in Kern County. The existing and proposed alignment within the Antelope Grade section is composed mostly of grazing land on both sides.

Federal Farmland Classification

The federal process for assessing farmland impacts is guided by the provisions of the Farmland Protection Policy Act, which calls for completion of Form CPA-106 Farmland Conversion Impact Rating for Corridor Projects. This form was previously included in the *2005 ND/FONSI* in Appendix C. The updated form dated August 8, 2023 can be found in Appendix C of this document with a copy of the prior form as well for comparison. The U.S. Department of Agriculture Natural Resources Conservation Service office in Salinas assisted in the completion of Form CPA-106 for the new proposed Build Alternative.

The Natural Resources Conservation Service Web Soil Survey database was used to develop Figure 2-1 identifying soil type and the federal farmland classification within a 1-mile radius (Area of Interest) of the proposed Build Alternative.

The Area of Interest encompasses approximately 6,583 acres. Of the 6,583 acres, 94 percent (6,180 acres) of the land is classified as “not prime farmland.” Not prime farmland can be defined as land that is composed of soils that do not support prime farmland, farmland of statewide or local importance or unique farmland. Roughly 4 percent (292 acres) of the farmland within the Area of Interest is composed of prime farmland if irrigated, and 2 percent (111 acres) is classified as farmland of statewide importance.

Prime farmland is defined as land that has the best combination of physical and chemical characteristics for the production of food feed, fiber, forage or oilseed crops. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management, according to current farming methods. Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops. Farmland of statewide or local importance is farmland other than prime or unique, that is of statewide or local importance for the production of food feed, fiber, forage or oilseed crops, as determined by the state.

California Farmland Classification

In California, farmland is classified by the Department of Conservation through the Farmland Mapping and Monitoring Program. This classification is based on the land’s soil quality and irrigation status. Agricultural land includes prime farmland, farmland of statewide importance, unique farmland, farmland

of local importance, and grazing land. Grazing land is included in this definition in California, compared to the federal criteria, which do not include grazing.

According to the Farmland Mapping and Monitoring Program, farmland totals approximately 1,586,357 acres or 75 percent of property within San Luis Obispo County and approximately 2,750,325 acres or 53 percent of property within Kern County.

The Farmland Mapping and Monitoring Program 2018 shapefiles for San Luis Obispo and Kern counties were used to analyze the farmland classification and acreage as shown in Figure 2-2. Approximately 91 percent (6,020 acres) of land within the Area of Interest is composed of grazing land and 6 percent (387 acres) is identified as farmland of local potential. In San Luis Obispo County, farmland of local potential is defined as land having the potential for farmland, which has prime or statewide characteristics but is not cultivated. The remainder is identified as nonagricultural and natural vegetation, urban and built-up land, and other.

Agricultural Preserves and Williamson Act Lands

An agricultural preserve defines the boundary of an area within which a city or county will enter into Williamson Act contracts with landowners. The Williamson Act of 1965 is the state's principal policy for the preservation of agricultural, open-space, and range land. Landowners can enroll parcels that are a minimum of 40 acres in size for a minimum of 10 years. This program helps local governments restrict land to agriculture and compatible open-space use. In doing so, land is assessed for property taxes at a rate consistent with its actual use, rather than the potential value of the land.

Most of the land immediately surrounding the Antelope Grade section is in a designated Agricultural Preserve in San Luis Obispo or Kern County. Eight parcels within the project limits are encumbered by a Williamson Act contract. Figure 2-3 identifies parcels under Williamson Act contract that are adjacent to the existing and proposed alignment.

Figure 2-1 Federal Farmland Classification Map

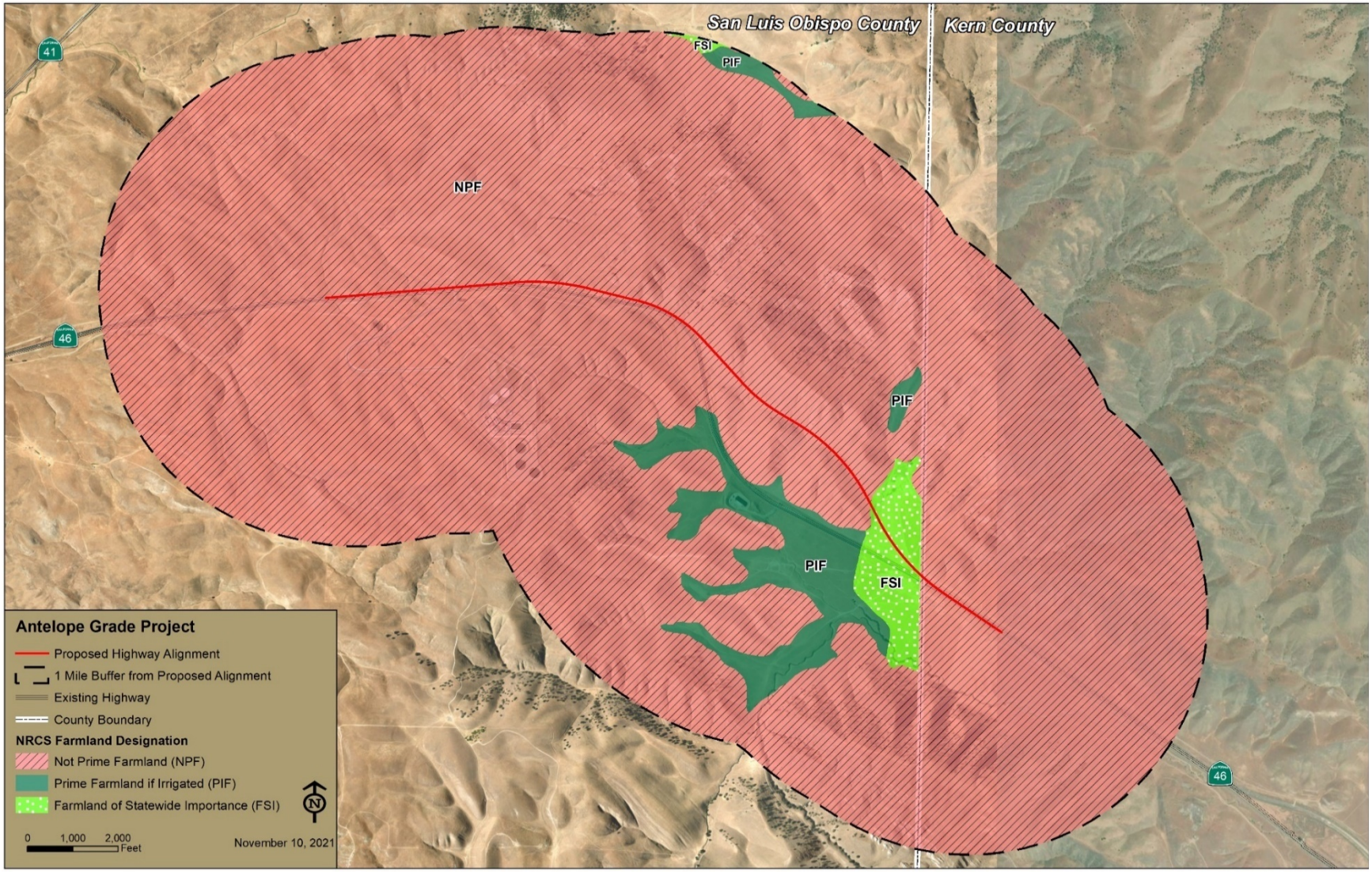


Figure 2-2 California Farmland Classification Map

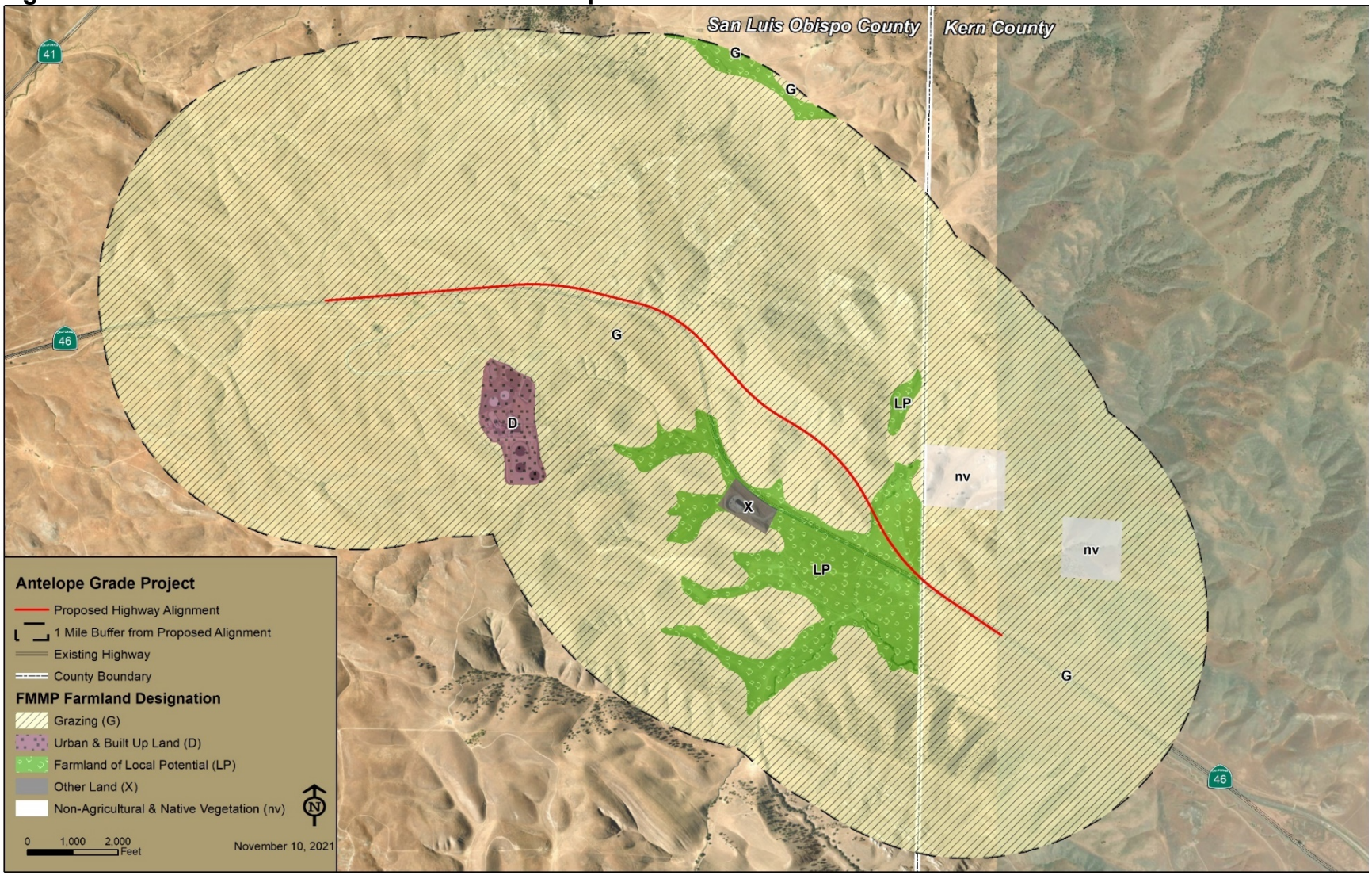


Figure 2-3 Land Under Williamson Act Contract

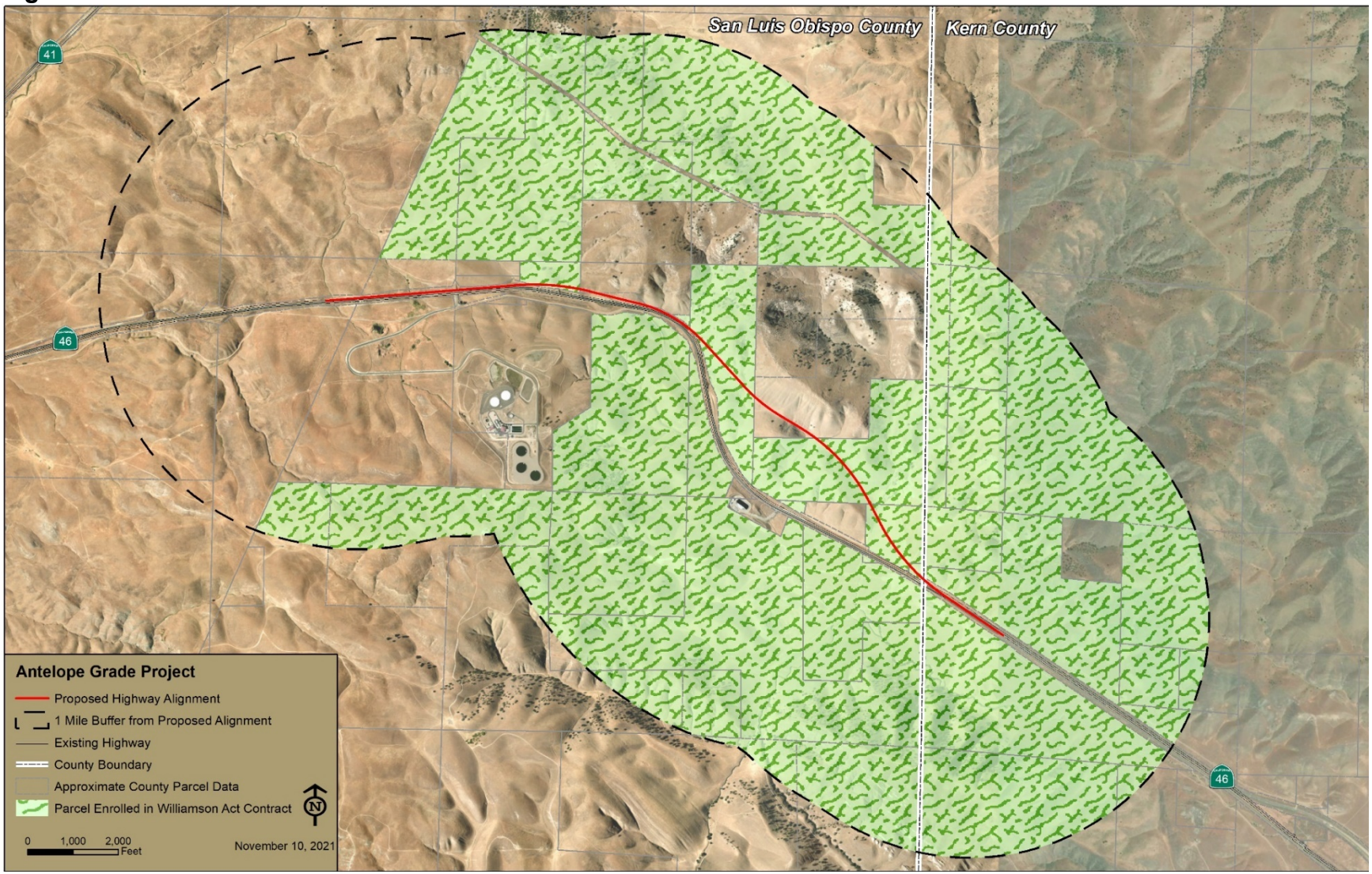


Table 2-1 Property Acquisition for Build Alternative

County	Williamson Act Contract	Assessor's Parcel Number	Total Property (acres)	Property Acquired (acres)	Percentage of Property Acquired	Remaining Parcel Acreage
San Luis Obispo	Yes	017-071-020	100.00	27.53	28%	72.47
San Luis Obispo	Yes	017-071-022	32.0	7.87	25%	24.13
San Luis Obispo	Yes	017-071-024	4.0	0.97	24%	3.03
San Luis Obispo	Yes	017-071-026	150.0	18.71	12%	131.29
San Luis Obispo	Yes	017-111-002	135.32	1.79	1%	133.59
San Luis Obispo	Yes	017-111-018	32.0	14.44	45%	17.57
San Luis Obispo	No	017-031-030	356.0	1.09	0.3%	354.91
San Luis Obispo	No	017-071-028	29.14	4.39	15%	24.75
San Luis Obispo	No	017-071-027	278.19	1.57	0.6%	276.62
San Luis Obispo	No	017-071-009	6.54	2.39	37%	4.15
San Luis Obispo	No	017-071-029	3.00	0.07	2%	2.93
San Luis Obispo	No	017-071-014	70.0	15.78	23%	54.22
San Luis Obispo	No	017-071-031	160.00	11.64	7%	148.36
Kern	Yes	043-060-53	233.30	0.48	0.2%	232.82
Kern	Yes	043-060-54	239.45	0.53	0.2%	238.92

Environmental Consequences

Federal Farmland Classification

Form CPA-106 Farmland Conversion Impact Rating for Corridor Projects was completed to evaluate farmland impacts as a result of the new proposed Build Alternative and submitted to the Natural Resources Conservation Service for review of the San Luis Obispo County and Kern County portions of the project in August 2021. A revised form was submitted for the San Luis Obispo County portion of the project to the Natural Resources Conservation Service in August 2023.

The site assessment evaluation is based on various criteria, including the percentage of a site being farmed, the protection provided by state and local governments, and the availability of agricultural support services nearby. The form assigns the affected farmland a combined score of up to 260 points, composed of up to 100 points for relative value and up to 160 points for the site assessment. A score of 160 points is used as the minimum impact rating indicator to evaluate and consider the impacts to farmland as a result of a proposed alternative. For scores 160 and above, there is the potential for an adverse impact.

The Natural Resources Conservation Service determined that no protected farmland as defined by 7 Code of Federal Regulations 658 exists within the Kern County portion of the project; therefore, no further evaluation is required under the Farmland Protection Policy Act. The Natural Resources Conservation Service determined that 15.8 acres of Farmland of Statewide Importance exists within the San Luis Obispo County portion of the project and assigned it a total score of 114 points. This represents a 0.006 percent reduction in the acreage of designated Farmland under the Farmland Protection Policy Act in San Luis Obispo County. Natural Resources Conservation Service farmland conversion guidance indicates that sites receiving a total score of less than 160 need not be given further consideration for protection and no additional sites need to be evaluated.

During preparation of the *2005 ND/FONSI*, Form CPA-106 indicated the farmland impact rating for the Antelope Grade section (Project 1 -San Luis Obispo) was determined to be 144.6. Table 2-2 shows a comparison between rating scores of the *2005 ND/FONSI* and the proposed Build Alternative. The 2002 Form CPA-106 and the 2023 Form CPA-106 can be found in Appendix C of this document.

Table 2-2 Farmland Conversion Impact Rating Comparison

Rating Values	2002 Form CPA-106 Project 1 – San Luis Obispo (*2005 ND/FONSI*)	2023 Form CPA-106 Antelope Grade North Alternative (San Luis Obispo County)
Relative Value of Farmland	72.6	33
Total Corridor Assessment	72	81
Total Points	**144.6**	**114**

Though the total impacted acreage protected by the Farmland Protection Policy Act has increased from 10.6 acres to 15.8 acres based on the development of the Antelope Grade North Alternative, the proposed project includes 34.92 acres of existing right-of-way in San Luis Obispo County that would be relinquished to appropriate local agencies as access roads and private landowners. Following completion of the project and removal of the existing roadbed, this land will be appraised and sold at public auction or to an adjoining property owner. Of this acreage, approximately 25.9 acres are mapped as farmland, including 10.6 acres of not prime farmland and 15.3 acres of prime farmland if irrigated. This land is anticipated to return to grazing land, which would minimize the impact to designated farmland to more comparable value as previously proposed.

California Farmland Classification

The project would convert approximately 93.45 acres of grazing land and 15.8 acres of farmland of local potential to transportation use. Appendix G of the CEQA Guidelines states that a project that would "convert prime agricultural land to non-agricultural use or impair the agricultural productivity, would normally have a significant effect on the environment." No prime agricultural land is within the Area of Interest or project footprint, and no prime agricultural land would be impacted by the proposed project.

Table 2-3 Comparison of Farmland Impacts

Farmland Type	Project 1 – San Luis Obispo (*2005 ND/FONSI*)	Antelope Grade North Alternative
Prime or Unique	7.7 acres	0 acres
Statewide or Local Importance	2.9 acres	15.8 acres
Total	10.6 acres	15.8 acres

Agricultural Preserves and Williamson Act Lands

Table 2-1 summarizes the acreage that would be required for partial acquisition of each of the 15 parcels as a result of the project. All parcels within the project footprint sit within an agricultural preserve designated by San Luis Obispo County or Kern County. A total of 13 parcels in San Luis Obispo County and two parcels in Kern County would be impacted by the project. Approximately 108 acres of land in the Shandon Agricultural Preserve

Area in San Luis Obispo County and 1 acre in Agricultural Preserve #01 in Kern County would be impacted.

Two parcels in Kern County and six parcels in San Luis Obispo County with Williamson Act contracts are within the limits of the Antelope Grade North Alternative. A total of approximately 70.5 acres of farmland, primarily designated as grazing land, encumbered by Williamson Act contracts would be impacted by the Antelope Grade North Alternative. None of the land impacted within a Williamson Act contracted parcel is designated as prime agricultural land. Also, approximately 25.9 acres of land in the existing right-of-way would be returned to grazing land. It is expected that this land would enter the Shandon Agricultural Preserve in San Luis Obispo County and potentially be added to an existing Williamson Act contract at the landowner's discretion.

The Williamson Act, California Government Code Section 51295 states:

The land actually taken shall be removed from the contract. Under no circumstances shall land be removed that is not actually taken for a public improvement, except that when only a portion of the land or less than a fee interest in the land is taken or acquired, the contract may be canceled with respect to the remaining portion or interest upon petition of either party and pursuant to the provisions of Article 5 (commencing with Section 51280).

CEQA Guidelines Section 15206(b)(3) indicates that projects that result in the cancellation of a Williamson Act contract for any parcel of 100 or more acres meets the criteria of a project of statewide, regional, or areawide significance and requires distribution to state agencies for review and comment. At a local level, San Luis Obispo County requires a minimum of 320 acres of grazing land to be eligible to maintain a Williamson Act contract. One parcel under Williamson Act contract in San Luis Obispo County as shown in Table 2-1, Assessor's Parcel Number 017-071-020, may be reduced to under 100 acres after property acquisition. However, this parcel is one of several parcels under the same contract and will not require cancellation due to the overall acreage under contract.

It is anticipated that the project's property acquisition would not prevent the properties from maintaining their Williamson Act contracts or prevent the continuation of existing agricultural grazing practices on the properties. Regardless, the project's environmental document will be circulated through the State Clearinghouse to comply with Section 15206(b)(3) and the appropriate notifications will be made to the Department of Conservation as the project continues to move forward.

Pursuant to California Government Code Section 51292, the project location was not based on the lower cost of acquiring land in an agricultural preserve or under Williamson Act contract. Agricultural land is found completely

surrounding this section of State Route 46, with most of the adjacent properties under a Williamson Act contract. No feasible route exists that would entirely avoid agricultural land or would locate the alignment on properties outside of an Agricultural Preserve or Williamson Act contracted land.

Any property acquisition is anticipated to follow Caltrans standard property acquisition process. The Caltrans standard property acquisition process requires a Caltrans Right-of-Way agent to coordinate and negotiate with property owners to develop appropriate compensation. Adequate compensation would be provided for property acquisition, including relocation assistance for residents and businesses as required by law. Caltrans Right-of-Way agents would work with affected property owners to address issues of concern and compensation for their properties' fair market value and any temporary loss of production due to the project construction. Projects under a Williamson Act contract would need to comply with all conditions of the act including, but not limited to, the following:

- California Government Code Section 51291(c): When land in an agricultural preserve is acquired by a public entity, the public entity will notify the Director of Conservation within 10 working days. The notice will include a general explanation of the decision and the findings made pursuant to Section 51292.
- California Government Code Section 51291(d): If, after giving the notice required under subdivision (c) and before the project is completed within an agricultural preserve, the public agency or person proposes any significant change in the public improvement, it will give notice of the changes to the Director of Conservation and the local governing body responsible for the administration of the preserve. Within 30 days thereafter, the Director of Conservation and the local governing body may forward to the public agency or person their comments with respect to the effect of the change to the public improvement on the land within the preserve and the compliance of the changed public improvements with this article. Those comments will be considered by the public agency or person, if available within the time limits set by this subdivision.

While the proposed Build Alternative would convert approximately 93.45 acres of grazing land and 15.8 acres of farmland of local potential to transportation use and conflict with land currently held under Williamson Act contract, this conversion represents a relatively small area and percentage in county and statewide totals as discussed above. The impacts to agriculture in San Luis Obispo and Kern counties would be less than significant.

Avoidance, Minimization, and/or Mitigation Measures

Measures discussed in Section 2.4.6 Invasive Species would also help reduce impacts to grazing land in the project area. The following additional

measures are proposed to further minimize impacts to agriculture and farmland resources:

Minimization Measure AG-1 – The proposed project shall limit the amount of new right-of-way acquisition from adjacent farmland properties and only acquire new right-of-way necessary for project completion.

Minimization Measure AG-2 – Infill materials to be used in the project shall not be obtained from borrow sites comprised of prime agricultural soils.

Minimization Measure AG-3 – Construction activities would be coordinated with local farmland operations to ensure that access to adjacent farmland properties is maintained during project construction.

2.2.3 Relocations and Real Property Acquisition (*Incorporate by Reference*)

2.2.4 Utilities

Affected Environment

The project area is mostly rural grazing land and lacks significant development that requires common utilities such as water, sewer, and electricity. Despite this, several known utilities in the vicinity have been identified through preliminary mapping and location surveys, including multiple crude oil and natural gas pipelines, overhead powerlines, as well as the California Aqueduct (underground in this area).

Environmental Consequences

The Antelope Grade North Alternative has been designed to reduce impacts to utilities, potential associated hazardous waste concerns, as well as the costs associated with relocation. Many of the existing utilities are located on the south side of the existing State Route 46 alignment and are not anticipated to be in conflict with the proposed Build Alternative.

Phillips 66 owns and operates multiple crude oil and natural gas pipelines in the project vicinity that generally run parallel to the existing highway. Several pipelines are south of the existing highway alignment and would not be impacted by the proposed project; see Section 2.3.4 Hazardous Waste and Materials for more discussion. One pipeline running north of the existing highway may be in conflict with the proposed Antelope Grade North Alternative based on preliminary discussions with Phillips 66. This conflict includes a segment approximately 1,300 feet long that may be abandoned, protected in place, or relocated. The preliminary relocation has been reviewed by Caltrans and would occur within the identified project footprint discussed throughout this document; therefore, no additional impacts resulting from this relocation would be anticipated at this time.

Further utility investigation to identify specific conflicts and resolution measures shall be conducted during the Plans, Specifications, and Estimates phase of the project. Caltrans would continue to coordinate with utility providers throughout the design and construction of the proposed improvements. If additional utilities are discovered during the project Plans, Specifications, and Estimates phase, they will be reviewed by Caltrans to determine if there are any potential impacts.

Avoidance, Minimization, and/or Mitigation Measures

No additional measures are proposed.

2.2.5 Visual/Aesthetics

Regulatory Setting

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

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

California Streets and Highways Code Section 92.3 directs Caltrans to use drought-resistant landscaping and recycled water when feasible and incorporate native wildflowers and native and climate-appropriate vegetation into the planting design when appropriate.

Affected Environment

The following analysis regarding potential impacts to visual resources resulting from development of the Antelope Grade North Alternative comes from the Supplemental Visual Impact Assessment dated October 2021 and the Reevaluation Scenic Resource Evaluation and Visual Assessment Update dated July 2023. The existing visual character in the Antelope Grade section has not changed significantly from what was studied in the prior Visual Impact Assessment and 2005 ND/FONSI. However, the proposed Build Alternative has changed from what was previously proposed and now includes a set of single-span bridges and an earthen berm.

The existing visual quality along State Route 46 is moderately high. This view quality is due mostly to the rural character, rolling hills, and overall scarcity of

built development. Roadside views along State Route 46 through the project area generally include the full range of long-distance horizon views as well as the immediate roadside environment and mid-ground. It is expected that many viewers of the project changes would have moderate sensitivity regarding scenic quality of the route due to long distance travel through a continuous type of landscape.

The project area is characterized by rolling to moderately steep topography, with sparse oak savanna visible on the distant hillsides. The landcover of the adjacent roadside is mostly grasses and forbs with few shrubs and trees. The highway is most curvy through this portion of State Route 46. The elevated and curved alignment allows increased long-distance views from the roadway. Along with the associated cuts and fills, the roadway itself is the most visible built development through this section. Most of the existing roadside excavation slopes are constructed at a ratio of approximately 1.5 to 1 (horizontal to vertical ratio), and generally do not include horizontal benching. No night lighting currently exists.

The section of State Route 46 within the project limits is not designated as an Official State Scenic Highway nor is it listed as an Eligible State Scenic Highway.

Environmental Consequences

A Supplemental Visual Impact Assessment was prepared to evaluate the change in the degree of visual impacts as a result of the proposed Build Alternative.

Visual impact is a function of assessing the amount of physical change (resource change) and comparing that with the degree of viewer sensitivity (viewer response). To understand and predict viewer response to the appearance of a highway project, viewers who may see the project are identified. For highway projects, there are two general viewer groups: those with views from the road (motorists) and those with views of the road (residents). The physical location of each viewer group, the number of people in each group and the duration of their view are also taken into account. In this case, there are no nearby residences, so the main viewer group is motorists on the road.

The project would shift the highway alignment north from the existing centerline due to the steep topography, existing utilities, and environmental constraints on the south side of the highway. The roadway would include two at-grade intersections with channelized turn lanes to provide driveway access to adjacent parcels. Landform grading would blend the cut slopes into the surrounding topography. About 1 mile of the existing roadway would be abandoned and graded to the original contours. An additional 0.5 mile of the existing roadway would become a local access road.

One set of single-span bridges would be installed to replace an existing drainage culvert at post mile 58.1. Each bridge would carry two lanes for eastbound and westbound traffic with a 10-foot outside shoulder and a 5-foot inside shoulder. The eastbound bridge would be approximately 112 feet long; the westbound bridge would be approximately 159 feet long. Concrete Barrier Type 842 Modified is proposed. As part of the bridge construction, there would be willow and other vegetation removal. All disturbed areas would be revegetated and replanted.

An earthen berm is proposed on the eastern end of the proposed alignment. The berm is intended to screen a nearby stock pond that serves as breeding habitat for special-status species from the sight and sound of the proposed roadway. Excess cut material from other areas within the project would be used to construct the berm. The earthen berm could be a highly visible engineered feature without contour grading and would appear inconsistent with the natural slopes.

The proposed Build Alternative results in visible cut slopes reaching as much as 296 feet high along the northern side of the roadway. The new alignment would be slightly curvier than the existing highway and, combined with the newly excavated slopes, would slightly open up long distance views.

As seen from along this section of State Route 46, the proposed bridges would be viewed parallel to the route as the driver approaches the structure. Because of distance and intervening topography, it is not anticipated that the structure would be visible from the nearby State Route 41. Though bridges are a commonly seen structure in the roadway environment, they can contribute to a more urbanizing quality.

No new night lighting is proposed, and glare is not anticipated from any project elements (if lighting is considered during the design process at access road intersections, no nearby residences exist within the immediate vicinity of the project). Further, lighting is not uncommon at rural intersections. Therefore, no impacts are anticipated from light or glare as a result of the project.

Compared to the prior Build Alternative in the *2005 ND/FONSI*, the proposed cut and fill slopes would substantially increase and would contribute to a reduction in visual quality. Visual changes were previously identified for this area in the prior Visual Impact Assessment. However, the proposed Build Alternative would result in a greater degree of visual character impacts compared to the previous design due to increased grading, bridge elements, and the earthen berm.

A review of applicable planning documents indicates that both the Counties of San Luis Obispo and Kern value their rural and agricultural heritage and visual character. The changes proposed by this project would add large

slopes and more hardscape to the existing highway corridor. Because of the fundamental alteration of the existing character and quality of the setting, the project has the potential to result in substantial visual impacts. These potential impacts can be reduced and the project made consistent with scenic planning objectives as well as viewers' expectations with the implementation of the mitigation measures listed below.

With implementation of the measures in the following section, the appearance of the new highway facility would still be within the viewer's expectations for the route and the impacts would be less than significant. The proposed changes would be visually absorbed into the viewshed and would remain subordinate to the overall rural landscape character.

Avoidance, Minimization, and/or Mitigation Measures

Mitigation measures in the *2005 ND/FONSI* included slope rounding, slope stabilization and erosion control, topsoil salvage, and native tree replacement. Slope rounding has been incorporated into the proposed design of the project; the remaining measures are included and discussed in Section 2.4 Biological Environment.

The following mitigation measures would be implemented to reduce adverse effects to visual resources:

Mitigation Measure AES 1 – Preserve as much existing vegetation as possible. Prescriptive clearing and grubbing and grading techniques which save the most existing vegetation possible shall be employed.

Mitigation Measure AES 2 – Revegetate all disturbed areas with native plant species appropriate to each specific work location.

Mitigation Measure AES 3 – Replacement planting shall include aesthetic considerations as well as the inherent biological goals. Revegetation shall include native trees and plants as determined by Caltrans District 5 Biology and Landscape Architecture. Revegetation shall occur at the maximum extent horticulturally viable and maintained until established.

Mitigation Measure AES 4 – All visible concrete drainage elements including but not limited to headwalls, drain inlet aprons, etc. should be colored to blend with the surroundings and reduce reflectivity. The specific colors of these concrete elements shall be determined by Caltrans District 5 Landscape Architecture.

Mitigation Measure AES 5 – All visible metal drainage components related to down drains and inlets, including but not limited to flared end sections, connectors, anchorage systems, safety cable systems, etc. should be darkened or colored to blend with the surroundings and reduce reflectivity.

The specific color shall be determined by Caltrans District 5 Landscape Architecture.

Mitigation Measure AES 6 – The Type 842 Bridge Barrier and related components shall be colored and/or darkened to blend with the natural setting. The specific color shall be determined by Caltrans District 5 Landscape Architecture.

Mitigation Measure AES 7 – All metal roadside elements associated with the bridges including but not limited to guardrail, guardrail transitions, and end treatments shall be stained or darkened to be visually compatible with the rural setting. The color shall be determined and approved by District 5 Landscape Architecture.

Mitigation Measure AES 8 – The earthen berm shall be constructed to appear as naturally occurring as possible. The height and length of the berm shall be the minimum required. Side slopes shall be constructed as flat as possible, contour grading shall be used, and the alignment shall be subtly varied.

Mitigation Measure AES 9 – The height of the earthen berm shall not block views of the surrounding hillsides or horizon lines. Berms shall have undulating profiles, footprints, and side slopes to replicate a natural landform.

Mitigation Measure AES 10 – The earthen berm shall be constructed in such a way that it does not require the addition of guardrail or concrete barrier.

Mitigation Measure AES 11 – Following construction, re-grade and re-contour all new construction staging areas, other temporary uses, and the existing roadbed as necessary to match the surrounding pre-project topography.

2.2.6 Cultural Resources

Regulatory Setting

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

The National Historic Preservation Act of 1966, as amended, sets forth national policy and procedures for historic properties, defined as districts, sites, buildings, structures, and objects included in or eligible for listing in the National Register of Historic Places. Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effects of

their undertakings on historic properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 Code of Federal Regulations 800). On January 1, 2014, the First Amended Section 106 Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and Caltrans went into effect for department projects, both state and local, with Federal Highway Administration involvement. The Programmatic Agreement implements the Advisory Council on Historic Preservation's regulations, 36 Code of Federal Regulations 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. The Federal Highway Administration's responsibilities under the Programmatic Agreement have been assigned to Caltrans as part of the Surface Transportation Project Delivery Program (23 United States Code 327).

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

Public Resources Code Section 5024 requires state agencies to identify and protect state-owned historical resources that meet the National Register of Historic Places listing criteria. It further requires Caltrans to inventory state-owned structures in its rights-of-way. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the State Historic Preservation Officer before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the National Register of Historic Places or are registered or eligible for registration as California Historical Landmarks. Procedures for compliance with Public Resources Code Section 5024 are outlined in a Memorandum of Understanding between Caltrans and the State Historic Preservation Officer, effective January 1, 2015. For most federal-aid projects on the State Highway

System, compliance with the Section 106 Programmatic Agreement will satisfy the requirements of Public Resources Code Section 5024.

Affected Environment

The proposed Build Alternative would convert the existing two-lane highway to a divided four-lane expressway, with the new lanes located to the north of the existing highway. Shifting the lanes north required changes to the Area of Potential Effect that was previously studied in the *2005 ND/FONSI*. The Area of Potential Effect is the physical area in which a project may directly or indirectly cause impacts to cultural resources. The prior Area of Potential Effect was focused on the existing highway, the existing right-of-way and proposed right-of-way, with some work required south of the existing highway at post mile 59.3 due to steep topography to accommodate the additional lanes.

The effort to identify resources within the revised Area of Potential Effect included a search of pertinent documents and records, followed by field surveys. The results of these efforts are discussed below and are documented in the 2021 Supplemental Historic Property Survey Report and 2022 Supplemental Archeological Survey Report. The project area does not include any “built environment” structures such as bridges or railroads, so these reports focused on prehistoric and historic cultural resources.

One prehistoric cultural site, CA-SLO-1355, was identified within the Area of Potential Effect in the original Archeological Survey Report (Caltrans 2001; Glover et al. 1999; Mikkelsen et al. 2001). This prehistoric site exhibited sparse scatter of chert debitage and a single bedrock mortar on the surface. An Extended Phase I/Phase II report was subsequently prepared to evaluate CA-SLO-1355; which determined the site was eligible for listing on the National Register of Historic Places under Criterion D. In 2020, a Caltrans contractor conducted a Phase I/II of a portion of CA-SLO-1355 that was within the previous project footprint (Enright and Kidwell 2020) to determine the extent of the site and potential impacts as a result of the previously proposed alignment.

Since that time, the project footprint has been changed to the Antelope Grade North Alternative, removing the entire Area of Potential Effect south of the current highway, thus avoiding all impacts to the site. No other archaeological resources have been identified either within the previous Area of Potential Effect or current Area of Potential Effect.

Caltrans has consulted with the Native American Heritage Commission and local Native American groups known to have knowledge of or ties to the project area. The dates, methods, and content of the contacts are detailed in the Archeological Survey Report (Glover at al. 1999) and in the Historic Property Survey Report (Caltrans 2001). Also, as part of the 2020 Phase I/II effort at CA-SLO-1355, representatives of the Salinan Nation of San Luis

Obispo County provided comment and review of testing proposals, all reports, and provided Native American monitors during the field effort (Enright and Kidwell 2020).

Environmental Consequences

Under Section 106 of the National Historic Preservation Act Stipulation IX.A, Caltrans, acting on behalf of the Federal Highway Administration as assigned under 23 United States Code 327 must take into account the effects of its undertakings on historic properties and resources. One prehistoric cultural resource was identified previously in the *2005 ND/FONSI* but updates to the project design avoid impacts to this site; therefore, Caltrans has determined "No Historic Properties Affected."

Section 4(f) of the Department of Transportation Act of 1966 provides protection for historic properties. There are no historic properties present within the Area of Potential Effect; therefore, there are no Section 4(f) historic sites affected by the proposed project.

Caltrans applies standard specifications to all projects in the event of discovery of unanticipated cultural materials. If cultural materials are discovered during project construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.

If human remains are discovered, California Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. If the remains are thought by the coroner to be Native American, the coroner will notify the Native American Heritage Commission, who, pursuant to Public Resources Code Section 5097.98, will then notify the Most Likely Descendent. At this time, the person who discovered the remains will contact the District 5 Environmental Branch staff so that they may work with the Most Likely Descendent on the respectful treatment and disposition of the remains. Further provisions of Public Resources Code Section 5097.98 are to be followed as applicable.

Avoidance, Minimization, and/or Mitigation Measures

Although Caltrans does not anticipate impacts to cultural resources based on consultation, studies, and surveys, tribal monitoring would be included throughout construction of the project to be consistent with monitoring efforts on previous sections of State Route 46 construction for the Cholame and Wye sections. Therefore, the following measure is proposed:

Minimization Measure CUL 1 – A tribal monitor approved by the Salinan Tribe shall be present during ground-disturbing activities. Monitoring of work in modern fill or bedrock is not necessary. Once the tribal monitor determines

that there is no danger of encountering archaeological or sacred resources in the project area, work may continue without a tribal monitor.

2.3 Physical Environment

2.3.1 Water Quality and Stormwater Runoff

Regulatory Setting

Federal Requirements: Clean Water Act

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

- Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the U.S. to obtain certification from the state that the discharge will comply with other provisions of the act. This is most frequently required in tandem with a Section 404 permit request (see below).
- Section 402 establishes the National Pollutant Discharge Elimination System, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards administer this permitting program in California. Section 402(p) requires permits for discharges of stormwater from industrial/construction and municipal separate storm sewer systems.
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S. This permit program is administered by the U.S. Army Corps of Engineers.

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

The U.S. Army Corps of Engineers issues two types of 404 permits: general and individual. There are two types of general permits: regional and nationwide. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect.

Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a regional or nationwide permit may be permitted under one of U.S. Army Corps of Engineer's individual permits. There are two types of individual permits: standard permits and letters of permission. For individual permits, the U.S. Army Corps of Engineers decision to approve is based on compliance with the U.S. Environmental Protection Agency's Section 404 (b)(1) Guidelines (Guidelines) (40 Code of Federal Regulations Part 230), and whether the permit approval is in the public interest. The guidelines were developed by the Environmental Protection Agency in conjunction with the U.S. Army Corps of Engineers, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative that would have less adverse effects. The guidelines state that the U.S. Army Corps of Engineers may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S. and not have any other significant adverse environmental consequences. According to the guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The guidelines also restrict permitting activities that violate water quality or toxic effluent standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition, every permit from the U.S. Army Corps of Engineers, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 Code of Federal Regulations 320.4.

State Requirements: Porter-Cologne Water Quality Control Act

California's Porter-Cologne Water Quality Control Act (Porter-Cologne Act), enacted in 1969, provides the legal basis for water quality regulation within California. The Porter-Cologne Act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface water and/or groundwater of the state. It predates the Clean Water Act and regulates discharges to waters of the state. Waters of the state is a broader category than waters of the U.S., including groundwater and surface waters not considered waters of the U.S. Also, it prohibits discharges of "waste" as defined, and this definition is broader than the Clean Water Act definition of "pollutant." Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements and may be required even when the discharge is already permitted or exempt under the Clean Water Act.

State Water Resources Control Board and Regional Water Quality Control Boards

The State Water Resources Control Board administers water rights, sets water pollution control policy, issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, Total Maximum Daily Loads, and National Pollutant Discharge Elimination System permits. Regional Water Quality Control Boards are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

The State Water Resources Control Board and Regional Water Quality Control Boards are responsible for establishing the water quality standards (objectives and beneficial uses) required by the Clean Water Act and regulating discharges to ensure compliance with the water quality standards. Details about water quality standards in a project area are included in the applicable Regional Water Quality Control Board Basin Plan. In California, Regional Water Quality Control Boards designate beneficial uses for all water body segments in their jurisdictions and then set criteria necessary to protect those uses. As a result, the water quality standards developed for particular water segments are based on the designated use and vary depending on that use. In addition, the State Water Resources Control Board identifies waters failing to meet standards for specific pollutants. These waters are then state-listed in accordance with Clean Water Act Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-point source controls (National Pollutant Discharge Elimination System permits or Waste Discharge Requirements), the Clean Water Act requires the establishment of Total Maximum Daily Loads. Total Maximum Daily Loads specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed. The State Water Resources Control Board implemented the requirements of the Clean Water Act Section 303(d) through Attachment D of the Caltrans Statewide MS4 (Order No. 2022-XXXX-DWQ NPDES No. CAS000003), as it includes specific Total Maximum Daily Loads for which Caltrans is named a responsible party.

National Pollutant Discharge Elimination System Program

Municipal Separate Storm Sewer Systems

Section 402(p) of the Clean Water Act requires the issuance of National Pollutant Discharge Elimination System permits for five categories of stormwater discharges, including Municipal Separate Storm Sewer Systems. A Municipal Separate Storm Sewer System is defined as “any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that is designed or used for collecting or

conveying storm water." The State Water Resources Control Board has identified Caltrans as an owner/operator of a Municipal Separate Storm Sewer System under federal regulations. Caltrans' Municipal Separate Storm Sewer System permit covers all Caltrans rights-of-way, properties, facilities, and activities in the state. The State Water Resources Control Board or the Regional Water Quality Control Board issues National Pollutant Discharge Elimination System permits for five years, and permit requirements remain active until a new permit has been adopted.

On June 22, 2022, the State Water Resources Control Board adopted Caltrans National Pollutant Discharge Elimination System Permit (Order 2022-0033-DWQ NPDES NO. CAS000003). This project would be subject to the latest permit requirements, including the following:

1. Caltrans must comply with the requirements of the Construction General Permit (see below);
2. Caltrans must implement a year-round program in all parts of the State to effectively control stormwater and non-stormwater discharges;
3. Caltrans stormwater discharges must meet water quality standards through implementation of permanent and temporary (construction) best management practices, to the maximum extent practicable, and other measures as the State Water Resources Control Board determines to be necessary to meet the water quality standards; and
4. Caltrans must treat 100 percent of new net and replaced impervious surface area.

To comply with the permit, Caltrans developed the Statewide Stormwater Management Plan to address stormwater pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The Stormwater Management Plan assigns responsibilities within Caltrans for implementing stormwater management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The Stormwater Management Plan describes the minimum procedures and practices Caltrans uses to reduce pollutants in stormwater and non-stormwater discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of best management practices. The proposed project would be programmed to follow the guidelines and procedures outlined in the latest Stormwater Management Plan to address stormwater runoff.

Construction General Permit

The National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (General Permit), Order WQ 2022-0057-DWQ (adopted on September 8, 2022 and effective on September 1, 2023),supersedes

Order 2009-0009-DWQ as amended by Order No. 2010-0014-DWQ (effective February 14, 2011) and Order No. 2012-0006-DWQ (effective on July 17, 2012).The permit regulates stormwater discharges from construction sites that result in a disturbed soil area of 1 acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all stormwater discharges associated with construction activity where clearing, grading, and excavation result in soil disturbance of at least 1 acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than 1 acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the Regional Water Quality Control Board. Operators of regulated construction sites are required to develop Stormwater Pollution Prevention Plans; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The Construction General Permit separates projects into Risk Levels 1, 2, and 3. Risk levels are determined during the planning and design phases and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory stormwater runoff pH and turbidity monitoring, and aquatic biological assessments before and after construction during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective Stormwater Pollution Prevention Plan. In accordance with the Caltrans' Stormwater Management Plan and Standard Specifications, a Water Pollution Control Program is necessary for projects with disturbed soil area less than 1 acre.

Section 401 Permitting

Under Section 401 of the Clean Water Act, any project requiring a federal license or permit that may result in a discharge to a water of the U.S. must obtain a 401 Certification, which certifies that the project will be in compliance with state water quality standards. The most common federal permits triggering 401 Certification are Clean Water Act Section 404 permits issued by the U.S. Army Corps of Engineers. The 401 permit certifications are obtained from the appropriate Regional Water Quality Control Board, dependent on the project location, or by the State Water Resources Control Board in certain situations and are required before the U.S. Army Corps of Engineers issues a 404 permit.

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

protecting or benefiting water quality. Waste Discharge Requirements can be issued to address both permanent and temporary discharges of a project.

Affected Environment

The western portion of the project sits within the Estrella River Hydrologic unit from post mile 57.3 to post mile 59.0. This section of the project is in an Undefined Hydrologic Sub-Area (Number 317.00). Cholame Creek is the receiving water body for the western portion of the project. This portion of the project crosses unnamed tributaries that flow to Cholame Creek. Cholame Creek joins with San Juan Creek south of State Route 46 near Shandon, then flows to the Estrella River, then to the Salinas River. However, Cholame Creek is about 2.4 miles west from the project start limits; any tributaries that could flow to Cholame Creek are typically dry, with no water flowing most of the year.

The eastern portion of the project sits within the Temblor Hydrologic unit from post mile 59.0 to post mile 60.4. This section of the project is within an Undefined Hydrologic Sub-Area (Number 573.00). The receiving water bodies for the eastern portion of the project are unnamed ephemeral headwater streams that flow eastward toward Franciscan Creek. Franciscan Creek is in Kern County and heads 0.4 mile east of Palo Prieto Pass. The creek flows northeast to end in Antelope Valley on the southeast end of Sawtooth Ridge.

Cholame Creek is listed on the 2014 and 2016 303(d) list of impaired waters as being impaired for Boron, Chloride, Escherichia coli (E.coli), Fecal Coliform, Dissolved Oxygen, Sodium, and Specific Conductivity. Of those impairments, Total Maximum Daily Loads have been established for Boron, E.coli, and Fecal Coliform. Caltrans is not a named stakeholder in those Total Maximum Daily Loads, nor does stormwater runoff from the highway facility contain any of those constituents currently impairing Cholame Creek.

There are no Drinking Water Reservoirs and/or Recharge Facilities within the project limits. There are no existing Treatment Best Management Practices within the project limits, although existing Treatment Best Management Practices abut the western edge of the project area. These features have been identified on the project plans and would be protected during construction.

Environmental Consequences

The information in this section is from the Water Quality Technical Memorandum, dated August 2023, prepared for the project. A Water Quality Report was previously prepared for the 2005 ND/FONSI. Also, a Stormwater Data Report was completed in 2023 to evaluate potential impacts to water quality and stormwater runoff as a result of construction and operation of the project.

The findings in the *2005 ND/FONSI* remain unchanged. The project could result in impacts to water quality as a result of construction due to grading and operation of the project due to increased impervious surface area.

By incorporating appropriate engineering design and robust stormwater Best Management Practices during construction, the project would not result in significant impacts to water quality. Effective combinations of temporary and permanent erosion and sediment controls would be used throughout construction of the project. Stormwater management for the site would be coordinated through the contractor with Caltrans construction personnel to effectively manage erosion from the disturbed soil areas by implementing a Stormwater Pollution Prevention Plan. Implementation of stormwater best management practices is a required standard specification on all Caltrans projects; proposed measures are described in more detail below.

Also, areas that are disturbed by the project for activities like grading would be required to be stabilized to prevent soil erosion. These areas would be treated with appropriate erosion control material, including erosion control blankets installed with fiber, compost, seed, fertilizer and stabilizing emulsion with hydroseed application. Fiber rolls and/or compost socks would be installed on the slopes as well to stabilize the soil. Additional soil amendments may also be needed to stabilize the soil. Where feasible, topsoil would be collected and seeds of native plant species would be used to revegetate the exposed cut slopes.

The proposed project would result in an increase of impervious area, through which rainwater would be unable to pass, leading to increased velocity and volume of flow within the project limits. However, the project has been designed to include infiltration treatment best management practices to accommodate for the increase in water flow. A combination of infiltration areas and infiltration strips have been positioned specifically throughout the project area to allow water to soak into the ground. This would work to improve water quality by reducing the discharge velocity and allowing for pollutant removal.

Design pollution prevention treatment best management practices would also be implemented to promote infiltration, remove pollutants, and prevent scour and erosion from stormwater. This includes a combination of techniques, such as dikes to route runoff to drainage inlets and rock slope protection at culvert outlets and around bridge abutments to reduce velocity and minimize erosion.

By incorporating appropriate measures during construction of the proposed project and implementing design techniques discussed above, the project will have less than significant impacts on water quality and stormwater runoff.

Avoidance, Minimization, and/or Mitigation Measures

Best management practices would be implemented during construction and include the following standard measures:

Best Management Practice Measure 1 – Minimize active disturbed soil areas during the rainy season by using scheduling techniques.

Best Management Practice Measure 2 – Preserve existing vegetation to the maximum extent feasible.

Best Management Practice Measure 3 – Implement temporary protective cover/erosion control on all non-active disturbed soil areas and soil stockpiles.

Best Management Practice Measure 4 – Control erosive forces of stormwater runoff with effective storm flow management such as temporary concentrated flow conveyance devices, earthen dikes, drainage swales, lined ditches, outlet protection/velocity dissipation devices, and slope drains as determined feasible.

Best Management Practice Measure 5 – Implement linear sediment controls such as fiber rolls, check dams, or gravel bag berms on all active and non-active disturbed soil areas during the rainy season.

Best Management Practice Measure 6 – To further help prevent sediment discharge, stabilized construction site entrances, temporary drainage inlet protection, street sweeping, and vacuuming will be necessary.

Best Management Practice Measure 7 – Implement appropriate wind erosion controls year-round.

Best Management Practice Measure 8 – Water conservation practices are implemented on all construction sites and wherever water is used.

Best Management Practice Measure 9 – Paving and grinding procedures are implemented where paving, surfacing, resurfacing, grinding, or saw cutting may pollute stormwater runoff or discharge to the storm drain system or watercourses.

Best Management Practice Measure 10 – Procedures and practices designed for construction contractors to recognize illicit connections or illegally dumped or discharged materials on a construction site and report incidents to the Resident Engineer.

Best Management Practice Measure 11 – The following activities must be performed at least 50 feet from concentrated flows of stormwater, drainage courses, and inlets: stockpiling materials, storing equipment and liquid waste containers, washing vehicles or equipment, fueling, and maintaining vehicles and equipment.

Best Management Practice Measure 12 – Concrete curing may be used during the installation and construction of concrete structures. Proper procedures will minimize pollution of runoff during concrete curing.

Best Management Practice Measure 13 – Proper procedures will be implemented to minimize pollution when culverts are removed/relocated from existing locations.

2.3.2 Geology, Soils, Seismicity and Topography

Regulatory Setting

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

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

Affected Environment

This section was not discussed in the *2005 ND/FONSI*; therefore, a Preliminary Geotechnical Design Report was prepared to assess the project area in April 2022. The project lies in the southern Coast Range geomorphic province, at the northern end of the Temblor Range and east of the San Andreas Fault. The complex geologic history of the southern Coast Ranges is dominated by the development of and lateral movement along the San Andreas Fault over the last 30 million years. The proposed project alignment goes through Quaternary alluvium and members of the Miocene marine sediments, including the Monterey Formation and Temblor Formation. Quaternary alluvium refers to recent stream deposits of sand, gravel, silt, and clay.

The U.S. Geological Survey regional geologic map reveals the members of the Monterey and Temblor formations generally strike N45W to N60W, and subparallel to the San Andreas Fault located approximately 3.4 miles southwest of the site. The fault shown on the geologic map near post mile 60 on State Route 46 is classified by the California Geologic Survey Fault Activity Map of California as pre-Quaternary. The geologic bedding within the

proposed alignment mainly dips between 18 to 45 degrees toward the northeast.

High seismic ground accelerations are the amount (strength and duration) of ground shaking that a site could be subjected to from a local or regional earthquake. The California Geological Survey's 2003 figure showing the Earthquake Shaking Potential for California indicates that the project area is within a region defined as more likely to experience stronger earthquake shaking due to its proximity to the San Andreas Fault.

Although specific groundwater data does not exist within the proposed project area, limited groundwater data from well completion reports for wells and environmental investigations in the region suggest static groundwater elevations are potentially as shallow as 40 feet deep underlying the valley and extend greater than 100 feet below the ground surface of State Route 46 near the summit of Antelope Grade. Loose, unconsolidated, and saturated soils may liquefy during an earthquake. Liquefaction potential under the existing soil and groundwater conditions in the project area is considered low to moderate, according to San Luis Obispo and Kern County mapping. Liquefaction is a soil characteristic whereby the soil behaves like a liquid during major ground motion associated with earthquakes. Liquefaction should be considered in the design of the roadway or structures to ensure the roadway or structures can withstand strong earthquake shaking.

According to data compiled from the University of California, Davis California Soil Resource Lab, interactive SoilWeb Apps, the U.S. Department of Agriculture, and the Natural Resources Conservation Service, there are 8 different soil types within the project study area. The soils within the project limits are identified as silt and clay loam formed in material weathered from sandstone and shale. The predominant soil units within the project limits are Balcom-Nacimiento association, Polonio clay loam, Nacimiento-Ayar complex, and Millsholm-Rock outcrop complex. These soils vary greatly according to their drainage, liquefaction, and erosive characteristics. Their suitability for cropland also varies greatly. No soils within the project area are considered highly productive for cropland and designated as prime soils. The soils are rated as having moderately high runoff potential when thoroughly wet. The soils in the project area are considered moderately susceptible to erosion, and the soil pH is mapped as moderately alkaline in the upper layers of soil. Risk of corrosion to concrete is low; risk of corrosion to steel is moderate.

Environmental Consequences

The proposed project is not within an Alquist-Priolo Earthquake Fault Zone as identified by the California Geologic Survey. Nor is it located within 1,000 feet of a mapped fault that is of Holocene/Latest Quaternary age or younger (active within the past 15,000 years). The San Andreas Fault is mapped as being more than 18,000 feet (3.4 miles) west of the project site. The potential for surface fault rupture from known surface faults occurring at the site is less

than significant. The proposed roadway and structures would be designed to Caltrans' current geotechnical design standards and current seismic standards and would take into consideration the increased potential for strong seismic ground shaking.

The proposed project would result in exposed cut and fill slopes that would be subject to erosion. These areas would be treated with appropriate erosion control material, including erosion control blankets installed with fiber, compost, seed, fertilizer and stabilizing emulsion with hydroseed application. Fiber rolls and compost socks would be installed on the slopes as well to stabilize the soil. Additional soil amendments may also be needed to stabilize the soil. Where feasible, topsoil would be collected and seeds of native plant species would be used to revegetate the exposed cut slopes.

Site-specific geotechnical studies as described in Section 1.4.1 would be conducted during the design phase to assure the integrity of the project features and structures would not be compromised by site conditions, liquefaction, unstable soils, or ground shaking. Structures would be designed to withstand ground motion or liquefaction of the foundation soils from earthquake activity on the nearby faults. If any foundation soils are found to be expansive, as defined in Table 18-1-B of the Uniform Building Code (1994), appropriate measures would be taken to prevent damage to project facilities. Cut slopes and embankments would be designed to minimize the potential for offsite landslides, subsidence of offsite structures, or damage from lateral spreading.

A set of single-span bridges is proposed at post mile 58.1 to cross an unnamed creek. These bridges would be designed to withstand the maximum credible earthquake associated with nearby faults without catastrophic failure.

Caltrans Standard Specifications contain provisions to prevent soil erosion during and after project construction. Section 1.6 discusses some of these standard conditions. Also, as discussed in Section 2.3.1 Water Quality, Caltrans would follow permit conditions from the Regional Water Quality Control Board to protect water quality and minimize soil erosion. With the implementation of these provisions, impacts would be less than significant.

Avoidance, Minimization, and/or Mitigation Measures

No measures are proposed.

2.3.3 Paleontology

Regulatory Setting

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

authorized projects. The following federal regulations are applicable to the proposed project:

- **Antiquities Act of 1906 (16 United States Code 431-433) -** states, in part: “That any person who shall appropriate, excavate, injure or destroy any historic or prehistoric ruin or monument, or any object of antiquity, situated on lands owned or controlled by the Government of the United States, without the permission of the Secretary of the Department of the Government having jurisdiction over the lands on which said antiquities are situated, shall upon conviction, be fined in a sum of not more than five hundred dollars or be imprisoned for a period of not more than ninety days, or shall suffer both fine and imprisonment, in the discretion of the court.” Although there is no specific mention of natural or paleontological resources in the act itself, or in the act's uniform rules and regulations (Title 43 Part 3, Code of Federal Regulations), “objects of antiquity” has been interpreted to include fossils.
- **Archaeological and Paleontological Salvage (23 United States Code 305) based on the Federal-Aid Highway Act of 1960 (Public Law 86-657) -** amends the Antiquities Act of 1906 and states: “Funds authorized to be appropriated to carry out this title to the extent approved as necessary, by the highway department of any State, may be used for archaeological and paleontological salvage in that state in compliance with the Act entitled "An Act for the preservation of American Antiquities," approved June 8, 1906 (Public Law 59-209; 16 United States Code 431-433), and State laws where applicable.” Therefore, this statute allows funding for mitigation of paleontological resources recovered pursuant to federal aid highway projects, provided that “excavated objects and information are to be used for public purposes without private gain to any individual or organization” (Federal Register 46(19): 9570).
- **Federal-Aid Highway Act of 1935 (20 United States Code 78) -** gives authority to use federal funds to salvage archaeological and paleontological sites affected by highway projects.
- **National Environmental Policy Act of 1969 (42 United States Code 4321) -** directs federal agencies to use all practicable means to “Preserve important historic, cultural, and natural aspects of our national heritage...” (Section 101(b) (4)). Regulations for implementing the procedural provisions of NEPA are found in 40 Code of Federal Regulations 1500-1508.

The following state regulations are applicable to the proposed project:

- **California Environmental Quality Act of 1970 (CEQA; Public Resources Code Section 21000 et seq.) -** Chapter 1, Section 21002 states: “It is the policy of the state that public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects, and that the procedures required

are intended to assist public agencies in systematically identifying both the significant effects of proposed projects and the feasible alternatives or feasible mitigation measures which will avoid or substantially lessen such significant effects." Paleontological resources are listed in the CEQA checklist as an environmental resource that must be evaluated.

- **Public Resources Code, Division 4, Chapter 1.7, Section 5097.5 -** states that "No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands." As used in this section, "public lands" means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof. Consequently, Caltrans as well as local project proponents, are required to comply with Public Resources Code 5097.5 for their own activities, including construction and maintenance, as well as for permit actions (e.g., encroachment permits) undertaken by others.

The 2010 San Luis Obispo County General Plan's Conservation and Open Space Element includes the following Goals, Policies, and Implementation Strategies relevant to paleontological resources:

- **Goal CR-4:** The county's known and potential Native American, archaeological and paleontological resources will be preserved and protected.
- **Policy CR 4.5 - Paleontological Resources:** Protect paleontological resources from the effects of development by avoiding disturbance where feasible.
- **Implementation Strategy CR 4.5.1 - Paleontological Studies**. Require a paleontological resource assessment and mitigation plan to 1) identify the extent and potential significance of the resources that may exist within the proposed development and, 2) provide mitigation measures to reduce potential impacts when existing information indicates that a site proposed for development may contain biological, paleontological, or other scientific resources.
- **Implementation Strategy CR 4.5.2 - Paleontological Monitoring.** Require a paleontologist and/or registered geologist to monitor site-grading activities when paleontological resources are known or likely to occur. The monitor will have the authority to halt grading to determine the appropriate protection or mitigation measures. Measures may include collection of paleontological resources, curation of any resources collected with an appropriate repository, and documentation with the County.

Affected Environment

The *2005 ND/FONSI* included a discussion of paleontological resources within the previous project footprint. A records search was previously conducted for fossil sites at the Los Angeles County Museum of Natural History. No fossil sites were previously recorded within the project area, although both institutions had vertebrate fossil material from the same geologic formations that crop out along State Route 46. Several formations identified in the project area were considered highly sensitive: the Plio-Pleistocene Paso Robles Formation (non-marine), Miocene Monterey Formation (marine), and the Temblor Formation (marine). Alluvial deposits found within the Antelope Valley and eastward are not likely to contain fossils.

A Paleontological Identification Report/Paleontological Evaluation Report was prepared in May 2022 to evaluate the proposed changes to the Build Alternative and potential impacts to paleontological resources. A new records search was not requested, but online databases at the University of California Museum of Paleontology and the PaleoBiology Database were reviewed for any updated records.

Geologic Setting

State Route 46 lies within the Coast Ranges Geomorphic Province of California. The Coast Ranges are a linear series of northwest-trending mountain ranges and intervening valleys that dominate the coastal region of California from the Klamath Mountains near the Oregon border to the Transverse Ranges near Point Arguello. The project is in the southern Coast Ranges just east of the San Andreas Fault Zone where basement rocks are composed of the Mesozoic Franciscan complex. Here, the Antelope Grade section crosses over Polonio Pass, which divides the Temblor Range to the south from the Diablo Range to the north.

The complex geologic history of the southern Coast Ranges is dominated by the development of and lateral movement along the San Andreas Fault Zone over the last 30 million years. Right-lateral movement along the fault initially opened up deep marine basins that filled with great thicknesses of marine sediments. Near the close of the Miocene, compressional tectonics across the region began a period of folding, faulting, and uplift of the Miocene and older sediments that initiated the emergence of the northwest-trending linear fabric that characterizes the modern Coast Ranges. During the Pliocene and Pleistocene, renewed subsidence resulted in the accumulation of thick sequences of marine and nonmarine sediments, many of which were subsequently uplifted and deformed by compressional tectonics.

The existing alignment through Polonio Pass cuts across folded Miocene marine sediments that consist of the early Miocene Temblor Formation and overlying middle Miocene Monterey Formation. The highway heads east into

Antelope Valley, which is underlain by newer Quaternary alluvial valley sediments that have been deposited over the older formations.

The proposed alignment is mostly underlain by the Monterey Formation, but portions of the project also intersect the Temblor Formation and Quaternary alluvium. The proposed Build Alternative has shifted from the proposed *2005 ND/FONSI* alignment, and the Paso Robles Formation is no longer within the project footprint and will not be discussed further in this section.

Evaluating the potential effects to paleontological resources involves assigning paleontological potential rankings to individual geologic units based on the potential for the unit to contain scientifically significant fossils. The ranking systems are based on both the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils, and the sensitivity of these fossils to adverse impacts, as described below:

- High potential includes rock units that contain or are likely to contain significant vertebrate, invertebrate, or plant fossils. These rock units can contain abundant vertebrate fossils, a few significant fossils that may provide new or significant data, datable organic remains older than Recent, unique new vertebrate deposits or traces.
- Low potential includes rock units that are potentially fossiliferous but have not yet yielded significant fossils in the past or contain common invertebrate fossils that are well understood.
- No potential includes either igneous rock or moderate to highly metamorphosed rock units that have no potential for containing significant paleontological resources.

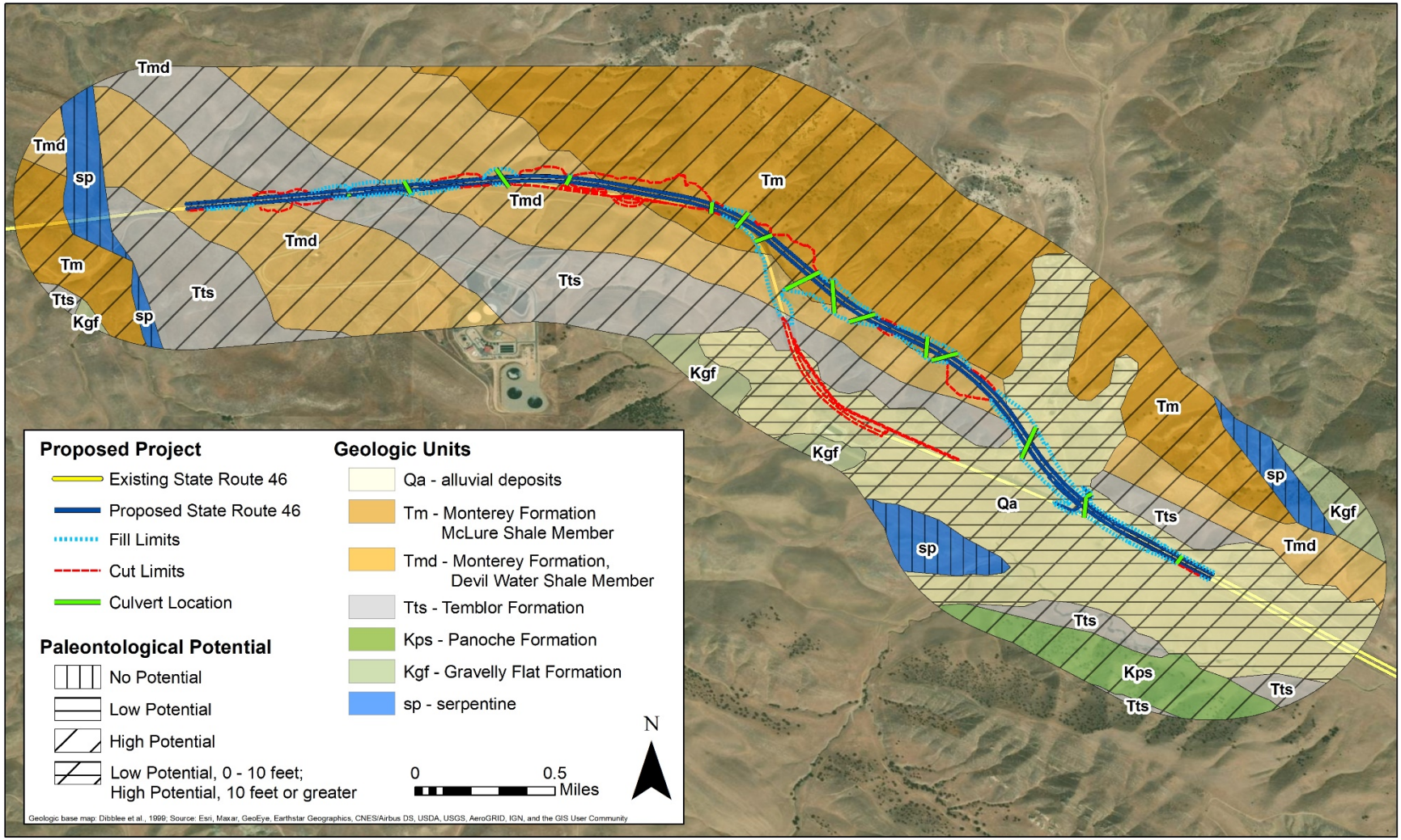
Table 2-4 describes the geologic formations found within the proposed project area and their sensitivity for paleontological resources.

Figure 2-4 provides a paleontological potential map with estimated cut-and-fill lines proposed for construction of the new alignment.

Table 2-4 Paleontological Potential Ranking of Geologic Formations in Project Area

Ranking	Formation	Age	Description	Known Fossils
None	Artificial Fill/ Previously Disturbed Deposits	Recent	Previously disturbed by human activity, expected in shallow subsurface along highway, embankments, and at existing drainage facilities.	Not applicable. Any discovered fossils have lost their context and are not scientifically significant.
Low Potential Holocene surficial deposits (0 to 10 feet below ground surface) High Potential Pleistocene deposits (Greater than 10 feet below ground surface)	Alluvial Deposits	Holocene to Late Pleistocene	Unconsolidated sands, silts, and clays deposited by streams/rivers in low lying areas. Surficial sediments overlying the Pleistocene-age deposits in active stream channels. Bulk of deposits are assumed to be Pleistocene in age.	Terrestrial land animals, including mammoth, horse, bison, camel, ground sloth. Deer and microvertebrates (rodents, rabbits, snakes, lizards) discovered in eastern sections of previous State Route 46 corridor projects at 12 feet or more below grade.
High	Monterey	Middle to Late Miocene	Marine deposits of siliceous, porcelaneous shales and sandstones and clay-rich shales	Abundant fossils of marine invertebrates, sharks, bony fish, sea birds, pinnipeds, toothed and baleen whales
High	Temblor	Late Oligocene to early Miocene	Marine sandstone and deep marine clay shales	Mostly marine invertebrates (clams, scallops, oysters, sand dollars; fish scales and teeth, shark teeth more rarely). Rare terrestrial mammal assemblage collected over 30 miles north of project location in Coalinga.

Figure 2-4 Paleontological Potential Map



Environmental Consequences

Direct impacts to paleontological resources occur when earthwork operations cut into the geologic units where fossils are buried and physically destroy the fossil remains. Only projects that involve earthwork such as grading or trenching in potentially fossil-bearing rocks have the potential to impact paleontological resources. Indirect impacts to paleontological resources include exposing a significant fossil horizon, which could lead to human-made destruction such as theft or vandalism or natural destruction such as weathering or erosion.

Though the project footprint has been modified from the *2005 ND/FONSI*, the sensitive paleontological resources and impacts are unchanged. Construction of the Antelope Grade section would involve substantial earthwork to widen the highway to four lanes and extend existing culverts or install new culverts. Over 2.4 million cubic yards of excavation are proposed, most of which would occur in previously undisturbed deposits of the high paleontological potential Temblor and Monterey formations within the western and central portions of the alignment as shown in Figure 2-4. These excavations have the potential to unearth scientifically significant fossils, the destruction of which would adversely affect paleontological resources.

Excavations into deposits with low or no paleontological potential (Holocene alluvium or artificial fill) would not adversely affect paleontological resources since these deposits are unlikely to contain scientifically significant fossils. For example, regrading of the abandoned highway to restore the area to its original contours is expected to involve mostly disturbance of artificial fill.

Placement of fill material is unlikely to affect paleontological resources because it would not disturb high paleontological potential deposits. However, placing fill material over high sensitivity deposits would make them inaccessible for future study. Most earthwork in the eastern portion of the alignment is underlain by Quaternary alluvial deposits and requires fill.

Construction of the Antelope Grade section has the potential to adversely impact paleontological resources. Preparation of a Paleontological Mitigation Plan prior to construction would be required to identify sensitive locations where monitoring would be required, procedures for collecting fossils, and provisions for the fossils to be curated at an appropriate repository and catalogued for scientific study in perpetuity. Preparation of the Paleontological Mitigation Plan and requirement for monitoring would reduce the potential for significant impacts to paleontological resources.

Avoidance, Minimization, and/or Mitigation Measures

The following mitigation measures would apply to the project to ensure fossil discoveries during project construction are assessed, collected, and treated by a qualified paleontologist.

Mitigation Measure PALEO 1 – Caltrans shall retain a Principal Paleontologist that meets Caltrans qualifications to prepare or oversee preparation of a Paleontological Mitigation Plan during the project Plans, Specifications, and Estimates phase once more detailed project plans are available. Elements of the Paleontological Mitigation Plan shall conform to Caltrans guidelines (Standard Environmental Reference, Volume 1, Chapter 8).

Mitigation Measure PALEO 2 – Caltrans shall retain a Principal Paleontologist that meets Caltrans qualifications to implement the prepared Paleontological Mitigation Plan during construction. Implementation of the Paleontological Mitigation Plan will follow Caltrans standards and involve:

a) Conducting Worker Environmental Awareness Training.
b) Paleontological monitoring of earthwork operations that disturb high paleontological potential deposits. Monitoring will be conducted by qualified paleontological monitors under the direction of the Principal Paleontologist. Monitors will inspect exposures and record data. The Principal Paleontologist has the authority to adjust the level of effort for monitoring based on the results in the field.
c) Evaluating fossil discoveries and collecting scientifically significant fossils. Paleontological monitors have the authority to temporarily halt or divert earthwork in the vicinity of a fossil discovery.
d) Preparation, identification, and cataloguing collected fossils. Fossils will be curated into an accredited scientific repository as designated in the Paleontological Mitigation Plan.
e) Preparation of a final Paleontological Mitigation Report that summarizes results of construction monitoring and conforms with Caltrans guidelines. Copies of the report shall be filed with Caltrans and the designated repository (if fossils are discovered).

2.3.4 Hazardous Waste and Materials

Regulatory Setting

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

The main federal laws regulating hazardous wastes/materials are the Comprehensive Environmental Response, Compensation and Liability Act of 1980, and the Resource Conservation and Recovery Act of 1976. The purpose of the Comprehensive Environmental Response, Compensation and Liability Act, often referred to as “Superfund,” is to identify and cleanup abandoned contaminated sites so that public health and welfare are not

compromised. The Resource Conservation and Recovery Act provides for "cradle to grave" regulation of hazardous waste generated by operating entities. Other federal laws include the following:

- Community Environmental Response Facilitation Act of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act
- Atomic Energy Act
- Toxic Substances Control Act
- Federal Insecticide, Fungicide, and Rodenticide Act

In addition to the acts listed above, Executive Order 12088, Federal Compliance with Pollution Control Standards, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

California regulates hazardous materials, waste, and substances under the authority of the California Health and Safety Code and is also authorized by the federal government to implement the Resource Conservation and Recovery Act in the state. California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning of hazardous waste. The Porter-Cologne Water Quality Control Act also restricts disposal of wastes and requires cleanup of wastes that are below hazardous waste concentrations but could impact groundwater and surface water quality. California regulations that address waste management and prevention and cleanup of contamination include Title 22 Division 4.5 Environmental Health Standards for the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

Worker and public health and safety are key issues when addressing hazardous materials that may affect human health and the environment. Proper management and disposal of hazardous material are vital if hazardous material is found, disturbed, or generated during project construction.

Affected Environment

The affected environment as it pertains to hazardous waste concerns is similar to what was previously described in the *2005 ND/FONSI*. An updated Initial Site Assessment was prepared in December 2021 to review changes in the project scope, physical environment, or regulatory requirements relating to hazardous waste. The project alignment is surrounded by undeveloped agricultural land used mostly for cattle grazing. Some oil and gas activity occurs in the region.

The *2005 ND/FONSI* identified 14 environmental conditions within the previous project area, but most of those conditions are outside of the current scope of the Build Alternative. Environmental records and agency databases such as GeoTracker were reviewed in December 2021 to identify potential hazardous waste concerns.

One contaminant cleanup site—Polonio Pass Pipeline #2—was identified within the updated project limits (GeoTracker Identification Number T10000013275). This site is associated with a release from a petroleum pipeline and is currently owned by Phillips 66. Two operational 8-inch-diameter pipelines and one abandoned pipeline parallel the existing highway to the south. The site is about 350 feet south of the existing State Route 46 alignment and involves soil contaminated by petroleum hydrocarbons. The Regional Water Quality Control Board closed the case in July 2021, ending further remediation activities and regulatory oversight of the site. While the site is now a closed case, it was closed because soil remediation was determined to be infeasible due to surface and subsurface conditions and given the low risk of groundwater contamination and migration of contaminants. Petroleum hydrocarbons are still present in the shallow subsurface based on 2005 soil testing though, a minimum of 7 to 19 feet below the ground surface.

Routine hazardous waste includes contaminants and waste streams that are frequently encountered or produced by Caltrans projects such as aerially deposited lead, lead-containing paint, naturally occurring asbestos, asbestos-containing materials, and treated wood waste. Investigation of these routine issues is typically done during the project Plans, Specifications, and Estimates phase, and Standard Special Provisions have been developed by Caltrans to ensure the proper handling, treatment, and disposal of these routine hazardous materials and wastes during construction to protect the health of workers, the public, and the environment.

Aerially deposited lead refers to increased concentrations of lead in soils along roadways due to the historic use of leaded gasoline. Soils determined to have concentrations exceeding stipulated thresholds must be managed under the July 1, 2016 Aerially Deposited Lead Agreement between Caltrans and the California Department of Toxic Substances Control. Previous studies completed in the area between 2001 and 2016 indicate that there are no regulated soils exceeding those specified thresholds or at hazardous levels.

Yellow traffic paint purchased by Caltrans prior to 1997 and yellow thermoplastic material for traffic striping until 2004-2006 contained high concentrations of lead making them hazardous wastes when removed. Older hazardous yellow traffic stripe along State Route 46 within the project limits was previously removed as of 2019 under Caltrans project EA 05-1K410; therefore, none of this hazardous material is anticipated to remain within the

project limits. The existing traffic paint to be removed when the highway is abandoned would be considered a non-hazardous waste.

Naturally occurring asbestos refers to silicate minerals that occur as asbestiform fibers and are found as a natural component of soils or rocks. Disturbance of rocks containing naturally occurring asbestos can release asbestos fibers into the air, which pose a human health risk when inhaled. In the project region, naturally occurring asbestos can be found within serpentine and ultramafic rocks of the Coast Ranges, and within fault zones. A review of geologic mapping and mineral hazard maps indicates that this material is unlikely to be present within the project limits. Also, asbestos-containing material typically found in bridges or structures is not anticipated to be found within the project site because there are no existing bridges or structures within the project limits.

Caltrans guardrail supports and signposts are typically composed of wood that has been treated with chemical preservatives to prevent rot or insect attack. Treated wood waste is considered a California hazardous waste and must be managed following the Alternate Management Standards set forth by Assembly Bill 332. Treated wood waste would be generated from the removal of guardrail and signs within the project limits and would be disposed of properly.

Environmental Consequences

It is unlikely that construction of the Build Alternative would encounter or disturb contaminated soils at the Polonio Pass Pipeline #2 site because the proposed alignment is north of the existing highway and the site is approximately 350 feet south of the existing highway. If it is determined during more detailed design that excavations would encounter contaminated soils, coordination of contamination cleanup would occur with the responsible party. If construction begins before cleanup is completed, or if petroleum hydrocarbons are unexpectedly encountered during construction, Caltrans may use the Emergency Construction Contract to remove and properly dispose of any petroleum hydrocarbon impacted soil encountered.

Routine hazardous waste issues as previously described may be encountered during construction but would be appropriately handled, treated, and disposed of following Caltrans standard specifications. The appropriate standard specifications would be determined during the Plans, Specifications, and Estimates phase. With the implementation of these standard specifications, adverse effects to human health and the environment would not be expected.

Avoidance, Minimization, and/or Mitigation Measures

No additional measures are proposed.

2.3.5 Air Quality

Regulatory Setting

The Federal Clean Air Act, as amended, is the main federal law that governs air quality; the California Clean Air Act is its companion state law. These laws, and related regulations by the U.S. Environmental Protection Agency and the California Air Resources Board, set standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards. National Ambient Air Quality Standards and state ambient air quality standards have been established for six criteria pollutants that have been linked to potential health concerns: carbon monoxide, nitrogen dioxide, ozone, lead, sulfur dioxide, and particulate matter (PM)—which is broken down for regulatory purposes into particles of 10 micrometers or smaller (PM10) and particles of 2.5 micrometers and smaller (PM2.5).

In addition, state standards exist for visibility-reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. The National Ambient Air Quality Standards and state standards are set at levels that protect public health with a margin of safety and are subject to periodic review and revision. Both state and federal regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics in their general definition.

Also, in 2007 the U.S. Environmental Protection Agency finalized a rule to reduce hazardous air pollutants from mobile sources. Nine compounds were identified as priority mobile source air toxics: 1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter, ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter.

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

Conformity

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

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

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

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the National Ambient Air Quality Standards for carbon monoxide, nitrogen dioxide, ozone, particulate matter (PM10 and PM2.5), and in some areas (although not in California), sulfur dioxide. California has nonattainment or maintenance areas for all of these transportation-related "criteria pollutants" except sulfur dioxide, and also has a nonattainment area for lead; however, lead is not currently required by the Federal Clean Air Act to be covered in transportation conformity analysis. Regional conformity is based on emission analysis of Regional Transportation Plans and Federal Transportation Improvement Programs that include all transportation projects planned for a region over a period of at least 20 years (for the Regional Transportation Plan) and 4 years (for the Federal Transportation Improvement Program). Regional Transportation Plan and Federal Transportation Improvement Program conformity uses travel demand and emission models to determine whether or not the implementation of those projects would conform to emission budgets or other tests at various analysis years showing that requirements of the Federal Clean Air Act and the State Implementation Plan are met. If the conformity analysis is successful, the Metropolitan Planning Organization, Federal Highway Administration, and Federal Transit Administration make the determinations that the Regional Transportation Plan and Federal Transportation Improvement Program are in conformity with the State Implementation Plan for achieving the goals of the Federal Clean Air Act. Otherwise, the projects in the Regional Transportation Plan and/or Federal Transportation Improvement Plan must be modified until conformity is attained. If the design concept and scope and the "open-to-traffic" schedule of a proposed transportation project are the same as described in the Regional Transportation Plan and Federal Transportation Improvement Plan, then the proposed project meets regional conformity requirements for purposes of project-level analysis.

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

Affected Environment

An Air Quality Report was prepared in 2005 to analyze air quality impacts resulting from the construction of the three projects proposed in the *2005 ND/FONSI*. An updated Air Quality Report was completed in November 2021 because a portion of eastern San Luis Obispo County was since identified as being within a federal nonattainment area for ozone. The 2021 Air Quality Report also addressed operational air pollutants and emissions (mobile source air toxics and climate change/carbon dioxide) that were not discussed in the *2005 ND/FONSI*. Emission calculations were updated using the latest Caltrans Construction Emissions Tool, CT-EMFAC model (v7.0).

Meteorology

The project footprint sits mostly within the South Central Coast Air Basin in San Luis Obispo County, with less than 0.5 mile of the project reaching into the San Joaquin Valley Air Basin in Kern County. The climate of the San Luis Obispo area is strongly influenced by its proximity to the Pacific Ocean. Warm, dry summers and cool winters with occasional rainy periods characterize the Mediterranean climate of the project area. Maximum summer temperatures in the county average about 70 degrees Fahrenheit near the coast, while inland valleys closer to the project area are often in the high 90s. Minimum winter temperatures in the county range from the low 30s near the coast to the low 20s inland.

Rainfall amounts can vary considerably among different regions in the county. In the Coastal Plain, annual rainfall averages 16 to 28 inches, while the Upper Salinas River Valley generally receives about 12 to 20 inches of rain. The Carrizo Plain is the driest area of the county with less than 12 inches of rain in a typical year. About 90 percent of the total annual rainfall is received from November through April. Winter conditions are usually mild, with intermittent periods of precipitation followed by mostly clear days.

Airflow around the region plays an important role in the movement and dispersion of pollutants. The speed and direction of local winds are controlled by the location and strength of the Pacific high-pressure system and other global weather patterns, topographical factors, and circulation patterns that result from temperature differences between the land and the sea.

The region is also subject to seasonal “Santa Ana” winds. These are typically hot, dry northerly winds that blow offshore at 15 to 20 miles per hour, but can reach speeds up to and over 60 miles per hour. In fall and winter during Santa Ana wind conditions in Southern California, pollutants may accumulate over the ocean for a period of one or more days and can then be carried onshore with the return of the sea breeze, where they combine with local emissions to cause high pollutant concentrations along the Central Coast. Strong inversions can form at any time, and can trap pollutants near the surface,

which can result in an increase in pollutant concentrations at nearby monitoring stations.

Pollutants

Under federal law and regulations, Metropolitan Planning Organizations that are in nonattainment of federal air quality standards must have a federal Transportation Improvement Program that conforms with an approved federal Air Quality Plan (also referred to as the State Implementation Plan).

The project lies within a nonattainment area for the 2008 and 2015 federal 8-hour and the state 1-hour and 8-hour ozone standards, as well as the state 24-hour and 1-year standards for respirable particulate matter or fugitive dust (PM10). All other federal and state standards are considered in attainment for San Luis Obispo County.

Ozone and particulate matter are generally categorized as regional pollutants because they, or their precursors, affect air quality across a region. Regional pollutants are those that cannot be attributed to any single project. Particulate matter is also considered a local pollutant because it tends to accumulate in the air locally. Sources of reactive organic gasses and nitrogen oxide, the principal components of ozone, are motor vehicles, fossil fuel combustion and industrial processes. Fugitive dust (PM10) may be composed of several types of fine solid or liquid particles, including dust, smoke, ash, mist and fumes. Sources of particulates include combustion of fuels, agricultural practices, construction activities, road dust, industrial processes, along with natural sources such as sea spray, forest fire smoke, and windblown dust.

Air quality monitoring is subject to rigorous federal and state quality assurance and quality control requirements, and equipment and data are audited periodically to ensure data validity. Air quality in San Luis Obispo County is measured by a network of ambient air monitoring stations throughout the county. Red Hills station is the closest station to the project area, located approximately 6 miles to the south. This station measures concentrations of ozone in the vicinity, as well as temperature, wind speed, and wind direction. The Paso Robles station is the closest station that monitors particulate matter in addition to ozone and is located in downtown Paso Robles.

Tables 2-5 and 2-6 provide a summary of seven years of monitoring data at each station.

Table 2-5 Red Hills Station Annual Ozone Summary

Year	Exceedance Days *(2015 Federal 8-hour Standard: 70 parts per billion)*	1-Hour Maximum Concentration *(parts per billion)*	8-Hour Maximum Concentration *(parts per billion)*
2013	9	87	81
2014	7	83	78
2015	4	82	75
2016	6	111	86
2017	6	79	72
2018	5	81	73
2019	3	74	73

Table 2-6 Paso Robles Station Annual Particulate Matter Summary

Year	Maximum 24-Hour PM_{10} *(State Standard: 50 micrograms/cubic-meter, Federal Standard: 150 micrograms/cubic-meter)*
2013	89.1
2014	82.5
2015	37.5
2016	43.0
2017	58.3
2018	66.9
2019	134.0

Data collected by permanent monitoring stations are used by the Environmental Protection Agency to identify regions within attainment, nonattainment, or maintenance, depending on whether the regions meet the requirements stated in the primary National Ambient Air Quality Standards. The Environmental Protection Agency imposes additional restrictions on nonattainment areas. Different classifications of nonattainment (marginal, moderate, serious, severe, and extreme) are used to classify each air basin on a pollutant-by-pollutant basis. The classifications are used to develop air quality management strategies to improve air quality and comply with the standards. Table 2-7 lists the standards for criteria pollutants and attainment status in the eastern portion of San Luis Obispo County. Brief descriptions of the sources and health effects associated with exposure are listed below:

- **Ozone:** High concentrations irritate lungs and long-term exposure may cause tissue damage and cancer, damages plant materials and reduces crop productivity. Precursor organic compounds include many known toxic air contaminants. Low-altitude ozone is almost entirely formed from reactive organic gases/volatile organic compounds and nitrogen oxides in the presence of sunlight and heat. Common precursor emitters include motor vehicles and other internal combustion engines, solvent evaporation, boilers, furnaces, and industrial processes.

- **Carbon Monoxide:** Interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. Carbon monoxide also is a minor precursor for photochemical ozone. Colorless, odorless. Combustion sources, especially gasoline-powered engines and motor vehicles. Carbon

monoxide is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.

- **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 and 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 nitrogen oxides, sulfur oxide, ammonia, and reactive organic compounds.

- **Nitrogen Dioxide:** Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain and nitrate contamination of storm water. Part of the nitrogen oxides group of ozone precursors. Sources include motor vehicles and other mobile or portable engines, especially diesel; refineries; industrial operations.

- **Sulfur Dioxide:** 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:** Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. 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.

- **Sulfate:** Premature mortality and respiratory effects. Contributes to acid rain. Some toxic air contaminants attach to sulfate aerosol particles. Sources include industrial processes, refineries, oil fields, mines, natural sources like volcanic areas, salt-covered dry lakes, and large sulfide rock areas.

- **Hydrogen Sulfide:** Colorless, flammable, poisonous gas. Respiratory irritant, headache, and nausea. Neurological damage and premature

death. Strong odor. Sources include industrial processes, refineries, oil fields, asphalt plants, livestock operations, sewage treatment plants, and mines. Some natural sources like volcanic areas and hot springs.

- **Visibility-Reducing Particles:** Reduces visibility and 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.

- **Vinyl Chloride:** Neurological effects, liver damage, cancer. Also considered a toxic air contaminant. Sources come from industrial processes.

Table 2-7 Criteria Pollutant Standards and Attainment Status

Pollutant	Averaging Time	State Standard	Federal Standard	State Project Area Attainment Status	Federal Project Area Attainment Status
Ozone	1 hour 8 hour	0.09 parts per million 0.070 parts per million	0.070 parts per million	Nonattainment	Nonattainment
Carbon Monoxide	1 hour 8 hour	20 parts per million 9.0 parts per million	35 parts per million 9 parts per million	Attainment	Unclassified
Respirable Particulate Matter (PM_{10})	24 hour Annual	50 micrograms per cubic meter 20 micrograms per cubic meter	150 micrograms per cubic meter No Annual value	Nonattainment	Unclassified
Fine Particulate Matter ($PM_{2.5}$)	24 hour Annual *Conformity Process:* 24 hour Annual	No 24-hour value 12 micrograms per cubic meter No 24-hour value No Annual value	35 micrograms per cubic meter 12.0 micrograms per cubic meter 65 micrograms per cubic meter 15 micrograms per cubic meter	Attainment	Unclassified
Nitrogen Dioxide	1 hour Annual	0.18 parts per million 0.030 parts per million	100 parts per billion 0.053 parts per million	Attainment	Unclassified
Sulfur Dioxide	1 hour 3 hour 24 hour Annual	0.25 parts per million No 3-hour value 0.04 parts per million No Annual value	75 parts per billion 0.5 parts per million 0.14 parts per million 0.030 parts per million	Attainment	Unclassified
Lead	30-day Average Calendar Quarterly Rolling 3 Month Average	1.5 micrograms per cubic meter No Calendar Quarterly value No Rolling 3-Month Average value	No 30-day Average 1.5 micrograms per cubic meter 0.15 micrograms per cubic meter	Attainment	No Attainment Information
Sulfate	24 hour	25 micrograms per cubic meter	No 24-hour value	Attainment	Not Applicable
Hydrogen Sulfide	1 hour	0.03 parts per million	No 1-hour value	Attainment	Not Applicable
Visibility Reducing Particles	8 hour	Visibility of 10 miles or more	No-8-hour value	Attainment	Not Applicable
Vinyl Chloride	24 hour	0.01 parts per million	No 24-hour value	No Attainment Information	Not Applicable

Environmental Consequences

Regional and Project-Level Air Quality Conformity

Conformity analysis does not apply for state standards. Therefore, conformity analysis for 1-hour ozone, 24-hour fugitive dust (PM_{10}), and 1-year fugitive dust (PM_{10}) is not required because San Luis Obispo County is in federal attainment for these pollutants. The project is in a nonattainment area for the federal 8-hour ozone standard.

As described in the Regulatory Setting above, regional conformity is demonstrated by showing the project is included in a conforming Regional Transportation Plan and Federal Transportation Improvement Program. If the design concept and scope and the "open-to-traffic" schedule of a proposed transportation project are the same as what is described, then the project meets regional conformity requirements for purposes of project-level analysis.

The Antelope Grade section is listed in the 2019 Regional Transportation Plan, which was found to conform by the San Luis Obispo Council of Governments on November 17, 2020. The 2021 Federal Transportation Improvement Program also lists the project. The Federal Highway Administration and Federal Transit Administration made a regional conformity determination finding on April 16, 2021.

The design concept and scope of the proposed project are consistent with the project description in the 2019 Regional Transportation Plan, 2020 Regional Transportation Improvement Plan, and the "open-to-traffic" assumptions of the San Luis Obispo County Council of Governments' regional emissions analysis. Also, there is currently no approved State Implementation Plan for ozone and no applicable Transportation Control Measures in the nonattainment area of San Luis Obispo County. Therefore, the proposed project conforms on the regional and project levels.

Mobile Source Air Toxics

The Federal Highway Administration released updated guidance since the release of the *2005 ND/FONSI* in October 2016 for determining when and how to address mobile source air toxics impacts in the NEPA process for transportation projects. The Federal Highway Administration identified three levels of analysis:

- No analysis for exempt projects or projects with no potential for meaningful mobile source air toxics effects;
- Qualitative analysis for projects with low potential mobile source air toxics effects; and
- Quantitative analysis to differentiate alternatives for projects with higher potential mobile source air toxics effects.

Projects with no impacts generally include those that qualify as a categorical exclusion under 23 Code of Federal Regulations 771.117, qualify as exempt under the Federal Clean Air Act conformity rule under 40 Code of Federal Regulations 93.126, or are not exempt, but have no meaningful impacts on traffic volumes or vehicle mix.

Projects that have low potential mobile source air toxics effects are those that serve to improve highway, transit, or freight operations or movement without adding substantial new capacity or creating a facility that is likely to substantially increase emissions. Most projects fall into this category.

Projects with high potential mobile source air toxics effects include those that:

- Create or significantly alter a major intermodal freight facility that has the potential to concentrate high levels of diesel particulate matter in a single location; or
- Create new or add significant capacity to urban highways such as interstates, urban arterials, or urban collector-distributor routes with traffic volumes where the Annual Average Daily Traffic count is projected to be in the range of 140,000 to 150,000, or greater, by the design year; and
- Are proposed to be located in proximity to populated areas or, in rural areas, in proximity to concentrations of vulnerable populations (i.e., schools, nursing homes, hospitals).

Based on the 2005 California Air Resources Board Air Quality and Land Use Handbook, it is generally recommended in California that projects perform an emissions analysis to address CEQA requirements if any of the following criteria are met:

- The project changes capacity or realigns a freeway or urban road with an Annual Average Daily Traffic count of 100,000 or more and there are sensitive land uses within 500 feet of the roadway.
- The project changes capacity or realigns a rural road (non-freeway) with an Annual Average Daily Traffic count of 50,000 or more and there are sensitive land uses within 500 feet of the roadway.

A quantitative emissions analysis was not conducted for the project because it does not involve meaningful mobile source air toxics effects for two main reasons. First, there are no sensitive air receptors within 500 feet of the existing highway or the new proposed highway alignment within the Antelope Grade section. Sensitive air receptors are typically defined as schools, daycare facilities, hospitals, healthcare facilities, convalescent homes, etc. Secondly, the predicted design year Annual Average Daily Traffic count is 14,034 vehicles, well under the 50,000-vehicle threshold for a rural roadway.

Operational Emissions

Emissions analysis is often conducted for long-term (operational) emissions, which result after a project is constructed. Operational emissions are considered long-term pollutants that are anticipated to occur continuously throughout the life of the project. In the case of this project, operational emissions would result from the operation of the new four-lane expressway.

The *2005 ND/FONSI* did not include long-term (operational) emissions analysis. However, due to changes in the environmental setting (recent nonattainment designation for 8-hour ozone in eastern San Luis Obispo County) as well as updated guidance, this analysis includes operational emissions analysis to ensure that the preferred Build Alternative would not cause new violations of the National Ambient Air Quality Standards, worsen existing violations, or delay timely attainment of the National Ambient Air Quality Standards. With respect to ozone, regional and project-level conformity has been met.

The CT-EMFAC 2017 model is used to support the California Air Resources Board's regulatory and air quality planning efforts and to meet the Federal Highway Administration's transportation planning requirements. Emission factors were adjusted to account for the Final Safer Affordable Fuel-Efficient Vehicle Rule for carbon dioxide emissions. The most recent model used peak-hour traffic data and emissions factors to calculate the carbon monoxide, reactive organic gas, nitrogen oxide, particulate matter (PM_{10} and $PM_{2.5}$), and carbon dioxide emissions for the Baseline (2019), Build Alternative 2046, and No-Build Alternative 2046. Results of the modeling are summarized in Table 2-8.

Table 2-8 Daily Peak-Hour Emission Estimates

Scenario	Carbon Monoxide (tons/day)	Fugitive Dust PM_{10} (tons/day)	Diesel Particulate Matter $PM_{2.5}$ (tons/day)	Nitrogen Oxide (tons/day)	Reactive Organic Gas (tons/day)	Carbon Dioxide (U.S. tons/day)
2019 Baseline	0.03	0.01	Less Than 0.01	0.03	Less Than 0.01	14.10
2046 Build Alternative	0.02	0.01	Less Than 0.01	0.01	Less Than 0.01	23.42
2046 No-Build Alternative	0.02	0.01	Less Than 0.01	0.01	Less Than 0.01	22.21

As shown in Table 2-8, the 2046 Build Alternative and the 2046 No-Build Alternative pollutant emission estimates are comparable to or lower than the 2019 Baseline existing conditions, with the exception of carbon dioxide. A reduction of many of these pollutants can be attributed to continued

regulatory efforts to reduce fossil-fuel consumption and increase vehicle efficiency. These regulations require upgrading or replacing on-road heavy-duty diesel vehicle engines, improving the fuel efficiency of heavy-duty vehicles, and increased control of emissions from passenger vehicles. Also, mobile source emission rates are expected to decline as engine efficiency improvements continue to be made and older, more polluting engines are phased out over time.

The increase in anticipated carbon dioxide emissions is related to the proposed project's increase in design vehicle speed. The optimum speed for fuel efficiency is 55 miles per hour. The CT-EMFAC 2017 model assumes traffic is flowing at 55 miles per hour, though the 2019 Level of Service for the project limits is rated as an "E," which indicates traffic is actually averaging 40 miles per hour or less. The project includes raising the design speed for the four-lane expressway to 65 miles per hour. This contributes to slightly lower fuel efficiency and a slight increase in modeled carbon dioxide emissions.

Construction Emissions

During construction, short-term degradation of air quality may occur due to the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other construction-related activities. Emissions from construction equipment also are expected and would include carbon monoxide, nitrogen oxides, volatile organic compounds, directly emitted particulate matter, and toxic air contaminants such as diesel exhaust particulate matter.

Site preparation and roadway construction typically involves clearing, cut-and-fill activities, grading, removing or improving existing roadways, building bridges, and paving roadway surfaces. Construction-related effects on air quality from most highway projects would be greatest during the site preparation phase because most engine emissions are associated with the excavation, handling, and transport of soils to and from the site. These activities could temporarily generate enough particulate matter and small amounts of carbon monoxide, sulfur dioxide, nitrogen oxides, and volatile organic compounds to be of concern. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site could deposit mud on local streets, which could be an added source of airborne dust after it dries. Fugitive dust emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. Fugitive dust emissions would 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 activities for large development projects are estimated by the U.S. Environmental Protection Agency to add 1.2 tons of fugitive dust per

acre of soil disturbed per month of activity. If water or other soil stabilizers are used to control dust, the emissions can be reduced by up to 50 percent. Section 14 of Caltrans Standard Specifications on dust minimization require use of water or dust palliative compounds and would reduce potential fugitive dust emissions during construction.

In addition to dust-related particulate matter emissions, heavy-duty trucks and construction equipment powered by gasoline and diesel engines would generate carbon monoxide, sulfur dioxide, nitrogen oxides, volatile organic compounds and some soot particulate matter in exhaust emissions. If construction activities were to increase traffic congestion in the area, carbon monoxide and other emissions from traffic would increase slightly while those vehicles are delayed. These emissions would be temporary and limited to the immediate area surrounding the construction site.

Sulfur dioxide is generated by oxidation during combustion of organic sulfur compounds contained in diesel fuel. Under California law and California Air Resources Board regulations, off-road diesel fuel used in California must meet the same sulfur and other standards as on-road diesel fuel (not more than 15 parts per million sulfur), so sulfur dioxide-related issues due to diesel exhaust would be minimal.

Some phases of construction, particularly asphalt paving, may result in short-term odors in the immediate area of each paving location. Such odors would quickly disperse to below detectable levels as distance from the project site increases. No sensitive receptors are within the project area.

The project contractor would likely require an equipment and material staging area, which could include a concrete batch plant in a location near the project site. The batch plant may require a permit from the local air district for using certain types of equipment, generators, or motors for periods of six months or longer.

Most construction impacts to air quality are short-term in duration and, therefore, would not result in long-term adverse conditions. Implementation of the standardized measures in the next section would reduce any air quality impacts resulting from construction activities, and impacts would be less than significant.

Construction Conformity

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

The CEQA determination found that no significant long-term air quality impacts would result from the construction of the Build Alternative.

Avoidance, Minimization, and/or Mitigation Measures

The construction contractor must comply with the Caltrans' Standard Specifications in Section 14-9, which specifically requires compliance with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances. Implementation of the following standardized measures, some of which may also be required for other purposes such as storm water pollution control, would also reduce air quality impacts resulting from construction activities:

Minimization Measure AIR 1 – Reduce the amount of disturbed areas where possible and preserve mature vegetation to the maximum extent feasible.

Minimization Measure AIR 2 – Use water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency would be required whenever wind speeds exceed 25 miles per hour. Reclaimed (non-potable) water shall be used whenever possible.

Minimization Measure AIR 3 – All dirt stock-pile areas shall be sprayed daily as needed.

Minimization Measure AIR 4 – Permanent dust control measures identified in the approved project revegetation and landscape plans shall be implemented as soon as possible following completion of any soil-disturbing activities.

Minimization Measure AIR 5 – All roadways and driveways to be paved shall be completed as soon as possible unless seeding or soil binders are used.

Minimization Measure AIR 6 – All trucks hauling dirt, sand, soil, or other loose materials on public roads shall be covered or maintain at least 2 feet of freeboard in accordance with California Vehicle Code Section 23114.

Minimization Measure AIR 7 – Sweep streets at the end of the day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water shall be used where feasible.

Minimization Measure AIR 8 – Schedule truck trips to minimize impacts to traffic flow.

Minimization Measure AIR 9 – Use only California Air Resources Board-approved fuel for all diesel-powered equipment used during construction.

Minimization Measure AIR 10 – To the extent feasible, use electric grid power to replace diesel-powered generators and to power air compressors and light sources.

Minimization Measure AIR 11 – Diesel equipment shall not be allowed to idle for more than 5 minutes.

Minimization Measure AIR 12 - The project shall seed slopes, drainage channels, riparian areas, and other disturbed areas with native and drought-tolerant shrubs, perennials and grasses.

Minimization Measure AIR 13 - The following "green" practices and materials shall be used in the project to the extent feasible as part of highway planting and erosion control work:

a) Compost and soil amendments derived from recycled wood products and green waste materials,
b) Fiber produced from recycled pulp such as newspaper, chipboard, cardboard,
c) Wood mulch made from green waste and/or clean manufactured wood or natural wood,
d) Native and drought-tolerant seed and plant species,
e) Irrigation controllers including water conservation features will use "smart" irrigation technology that uses "real world" data for only applying the water needed by the plants dependent on actual climate conditions,
f) Restricted pesticide use and reduction goals, and
g) Use of fly-ash in all concrete poured on the project.

2.3.6 Noise *(Incorporate by Reference)*

2.3.7 Energy

Regulatory Setting

The National Environmental Policy Act (42 United States Code Part 4332) requires the identification of all potentially significant impacts to the environment, including energy impacts.

The California Environmental Quality Act Guidelines section 15126.2(b) and Appendix F, Energy Conservation, require an analysis of a project's energy use to determine if the project may result in significant environmental effects due to wasteful, inefficient, or unnecessary use of energy, or wasteful use of energy resources.

Affected Environment

The State Route 46 corridor is a critical interregional route that connects the Central Coast with the Central Valley and points beyond. The route had the highest traffic volumes of any east-west corridor between the Pacheco Pass (State Route 152) to the north and the greater Los Angeles freeway system to

the south. State Route 46 is the most viable and active east-west corridor connecting the Central Coast to the Central Valley between U.S. Highway 101 and Interstate 5, as well as the local communities and agricultural processing facilities carrying products between the Central Valley and the rest of the nation via Interstate 5 and two Class 1 rail lines. State Route 46 is identified as a Priority Interregional Highway within a statewide system of Strategic Interregional Corridors. Within the project limits, State Route 46 is designated as a rural principal arterial.

Approximately 50 miles of the existing State Route 46 has been widened from U.S. Highway 101 in Paso Robles to Interstate 5 in Lost Hills, diminishing peak-hour congestion in those sections. However, the remaining two-lane sections of State Route 46 continue to experience peak-hour congestion, as limited passing opportunities cause traffic to back up behind slower moving vehicles.

Congestion associated with low Level of Service contributes to inefficient energy consumption as vehicles use extra fuel while idling and accelerating in stop-and-go traffic or when traffic is moving at slower speeds. The optimum speed for fuel efficiency is 55 miles per hour.

The annual average daily traffic count in 2019 was approximately 8,550 vehicles per day within the limits of the Antelope Grade section. Of this, about 29 percent of the traffic volume consisted of trucks. The projected annual average daily traffic for the design year 2046 is expected to increase to 14,034 vehicles per day.

The annual average daily traffic is associated with traffic speeds that represent the whole year, at all times of day/night, not just the congested peak-hour. The project would expand the existing two-lane highway to a four-lane divided expressway, raising the posted speed limit from 55 to 65 miles per hour. The annual average daily traffic speed is much closer to the posted speed limit, as traffic volumes outside of the peak-hour are moving at free-flow speeds. The annual average speed for a project condition would be affected by its respective posted speed limit. For example, the future Build Alternative condition would have an annual average daily speed of 65 miles per hour for light vehicles, while the future No-Build Alternative condition would have an annual average daily speed of 55 miles per hour. The future Build Alternative condition would consequently cause a less efficient use of fuel because the speed limit would be higher than the optimum speed for fuel efficiency (55 miles per hour). This is a necessary drawback, as peak-hour congestion is a priority to resolve.

Environmental Consequences

The conversion of the remaining sections of the State Route 46 corridor to a four-lane expressway is within the jurisdiction of the San Luis Obispo Council of Governments and is included in the 2019 Regional Transportation Plan. It

is described as “a statewide priority to ensure safe and efficient passage for travelers and commodity moving between the Central Valley and the Central Coast,” and it still remains a priority corridor in the 2019 Regional Transportation Plan.

Projected operational energy consumption from mobile sources (vehicles driving on the highway) was calculated using the CT-EMFAC2017 emissions model developed by Caltrans. This model calculates project-level emissions and fuel consumption using data from the California Air Resources Board’s EMFAC model (Table 2-9). This operational analysis uses annual average daily traffic and annual average speed.

Projected energy consumption from construction activity was developed by obtaining fuel consumption projections in gallons from the Caltrans Construction Emission Tool. This tool models both emissions and fuel consumption based on project-specific construction information (Table 2-10).

Table 2-9 Daily Existing and Projected Mobile Source Fuel Consumption

Year	Gasoline (gallons)	Diesel (gallons)
2019 Existing	940	482
2046 Build Alternative	1,196	838
2046 No-Build Alternative	1,159	782

Table 2-10 Annual Fuel Consumption for Construction

Construction Year	Gasoline (gallons)	Diesel (gallons)
2026	20,740	40,038
2027	60,258	113,623
2028	42,452	52,816
Total (500 Working Days)	123,450	206,477

Table 2-9 shows that by design year 2046, vehicles driving within the limits of the Antelope Grade section are expected to consume approximately 1,196 gallons of gasoline and 838 gallons of diesel fuel per day under the proposed Build Alternative. Under the 2046 No-Build Alternative, vehicle fuel consumption is predicted to be 1,159 gallons of gasoline and 782 gallons of diesel fuel per day. Also, minor use of energy would be required during maintenance activities, though the frequency of maintenance for new infrastructure is expected to be similar to or less compared to previous conditions. Due to the very minor increase in projected fuel consumption between the future Build Alternative and No-Build Alternative condition, the proposed Build Alternative is not expected to contribute to a substantial increase in energy consumption by the year 2046.

Also, due to passage of legislation, including State Senate and Assembly bills and executive orders, fuel efficiency in California is expected to improve

substantially over the next 25 years. For example, a 2020 executive order requires all new cars and passenger trucks sold in California must be zero-emission vehicles by 2030. By design year 2046, it is anticipated that the average vehicle will be able to travel up to 50 miles per one gallon of fuel. This anticipated improved fuel efficiency, combined with congestion relief associated with construction of the preferred Build Alternative would result in increased fuel economy of the Build Alternative compared to 2019 conditions.

Project construction would consume mostly diesel and gasoline through operation of heavy-duty construction equipment, material deliveries, and debris hauling. As indicated in Table 2-9, energy use associated with proposed project construction is estimated to result in the short-term consumption of 206,477 gallons from diesel-powered equipment and 123,450 gallons from gasoline-powered equipment. This fuel consumption represents a small demand on local and regional fuel supplies that can be easily accommodated, and 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. While construction would result in a short-term increase in energy use, construction design features would help conserve energy. The measures listed below would minimize inefficient, wasteful, and unnecessary consumption of energy. The project would result in a less than significant impact on energy resources.

Avoidance, Minimization, and/or Mitigation Measures

The following minimization measures to minimize temporary construction-related air quality impacts would also reduce energy consumption during construction:

Minimization Measure ENE 1 – To the extent feasible, schedule truck trips to minimize impacts to traffic flow and reduce idling time during peak travel times.

Minimization Measure ENE 2 – Construction equipment and vehicles shall be operated in proper tune and maintained according to the manufacturer's specifications. All construction equipment shall use low sulfur fuel as required by California Code of Regulations Title 17, Section 93114.

Minimization Measure ENE 3 – All on- and off-road diesel equipment shall not idle for more than 5 minutes. The contractor shall post signs in the designated queuing areas and/or job sites to remind drivers and operators of the 5-minute idling limit. For non-diesel equipment, idling time for lane closure during construction shall be restricted to 10 minutes in each direction to the extent as feasible.

2.4 Biological Environment

The Biological Environment section of this document is formatted differently than the *2005 ND/FONSI* partly due to the discussion of new biological resources because surveys were updated and regulations have changed, and partly due to new environmental document standards adopted by Caltrans since 2005. The resources discussed in this section include all resources impacted by the prior Build Alternative that were discussed in the *2005 ND/FONSI*, as well as new resources that have since been identified. The avoidance, minimization, and mitigation measures presented in this section include or replace the measures in the *2005 ND/FONSI* as discussed in each subsection.

A Natural Environment Study was prepared in 2003 and provided information on the environmental impacts resulting from the previously proposed project. The Supplemental Natural Environment Study dated August 2023 was used to prepare this section of the document and includes updated botanical surveys, focused sensitive plant surveys, jurisdictional delineations, and general reconnaissance-level wildlife surveys. Queries of the California Department of Fish and Wildlife California Natural Diversity Database for Orchard Peak, Sawtooth Ridge, Cholame, Holland Canyon, Packwood Creek, Camatta Canyon, Tent Hills, Pyramid Hills, and Cholame Valley 7.5-minute quadrangles were conducted in 2020, 2021, and 2022. Caltrans requested updated species lists from U.S. Fish and Wildlife Service and National Marine Fisheries Service of species listed as threatened or endangered under the Federal Endangered Species Act. Updated lists are included in Appendix D.

2.4.1 Natural Communities

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

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed in Section 2.4.5 Threatened and Endangered Species. Wetlands and other waters are discussed in Section 2.4.2.

Affected Environment

The Biological Study Area identified for the Antelope Grade North Alternative includes all areas that could be directly, indirectly, temporarily or permanently impacted by the proposed project as shown in Figure 2-5. The Biological Study Area totals approximately 272 acres and encompasses the proposed roadway, structures, and existing road removal as well as the anticipated right-of-way boundary.

The Biological Study Area is bisected by Antelope Grade (also known as Polonio Pass) with elevations ranging from 1,610 feet at the west end of the Biological Study Area to 1,400 feet at the east end. The highest point within the Biological Study Area is at 2,130 feet, though the summit of Polonio Pass is at 1,760 feet. The dominant topographic features within the Biological Study Area are the north end of the Temblor Range and the south end of the Diablo Range, with Polonio Pass the approximate division between the two ranges.

The overall topography west of the top of Polonio Pass in the Biological Study Area consists of hillslopes that ultimately drain toward State Route 41 before turning west toward Cholame Creek. The areas east of Polonio Pass consist of steeper hillslopes north of the highway and a relatively low-gradient slope on the south side of the highway that collects flows and ultimately drains east to the San Joaquin Valley. Several drainages are present in the Biological Study Area that originate either offsite or from springs. and water is conveyed under State Route 46 via existing culverts and then out of the study area.

The Antelope Grade section is rural and relatively undeveloped, with land mostly in private ownership used for cattle grazing. The area is dominated by non-native annual grassland, and patches of invasive herbs are common. However, hillslopes within the Biological Study Area also support native bunch grasses, native annual forbs, and wildflower fields. Trees are scarce within the Biological Study Area, though several native and non-native trees are present, including blue gum (*Eucalyptus globulus),* almond (*Prunus dulcis*), blue oak (*Quercus douglasii*), red willow (*Salix laevigata*), and saltcedar (*Tamarix ramosissima*).

Natural communities documented within the Biological Study Area include several vegetation alliances and land cover types: California annual and perennial grassland, hillside daisy, shale barren, coastal scrub, knapweed, eucalyptus, and seasonal wetlands/freshwater seeps. Several vegetation alliances comprise each of these natural communities. Of these vegetation alliances, the Hillside Daisy Association of the Monolopia-Leafy Stemmed Tickseed Fields alliance is considered sensitive by the California Department of Fish and Wildlife. Eucalyptus and knapweed stands are discussed further in Section 2.4.6 Invasive Species. Also, wetlands and other waters are considered sensitive but are discussed separately in Section 2.4.2 Wetlands and Other Waters. These vegetation communities are mapped in Figure 2-6 within the Biological Study Area.

California Grassland

The Biological Study Area consists mostly of annual, perennial, and ruderal grassland communities. The California annual and perennial grassland community includes several native perennial and annual grass- and forb-dominated alliances. This community also includes disturbed areas that are largely unvegetated or are vegetated mostly by ruderal species. Ruderal grassland is dominated by annual bromes, fescues, wild oats, filaree, and wild

mustard. Within the Biological Study Area, California grassland communities cover about 245 acres.

Hillside Daisy Association

The Hillside Daisy Association is part of the Monolopia-Leafy Stemmed Tickseed Fields Herbaceous Alliance and is composed mostly of common hillside daisy (*Monolopia lanceolata*). This species was observed mostly on moderate to steep hillslopes within the Biological Study Area where the cover of annual grasses was lower and hillside daisy was overwhelmingly dominant during the spring. This association was mapped separately from the California Annual and Perennial Grasslands due to its species predominance and is considered a sensitive natural community by the California Department of Fish and Wildlife. Hillside Daisy Association covers about 8.6 acres of the Biological Study Area.

Shale Barren

Shale barrens are present along the northern edge of the Biological Study Area, just northeast of the summit of Polonio Pass. As the name implies, the substrate consists of exposed outcrops of shale, and vegetation cover is very sparse. Though this is not a recognized sensitive community by the California Department of Fish and Wildlife, it is discussed here because shale outcrops with very sparse vegetation not meeting any of the currently defined alliances are somewhat common in the Biological Study Area and support a rare plant species, Temblor buckwheat (*Eriogonum temblorіensis;* California Rare Plant Rank 1B.2, discussed more in Section 2.4.3. Plant Species). Angle-stemmed buckwheat (*Eriogonum angulosum*), waxy fiddleneck (*Amsinckia vernicosa*), and gilia (*Gilia malior*) are also present in many of these shale barrens. Associated non-native grass species are present at very low cover and include wild oats and goldentop (*Lamarckia aurea*). Some roadcuts in the Biological Study Area with exposed rock or very shallow soils were mapped as shale barrens because they share many features in common with the natural shale barren, such as exposed rock outcrops, low vegetation cover, and occasional presence of Temblor buckwheat. Approximately 7 acres of shale barren were mapped within the Biological Study Area.

Coastal Scrub

Coastal scrub habitat is a broad category covering approximately 8.8 acres of the Biological Study Area that includes vegetation alliances of silver lupine scrub (*Lupinus albifrons* shrubland alliance), California buckwheat scrub (*Eriogonum fasciculatum* shrubland alliance), sand-aster and perennial buckwheat fields, allscale scrub (*Atriplex polycarpa* shrubland alliance), and California sagebrush scrub (*Artemisia californica* shrubland alliance).

Silver bush lupine is the dominant species in the silver lupine scrub alliance, with associated species such as protruding buckwheat, San Joaquin milkvetch, alkali goldenbush, and California matchweed. Grass cover is lower

in this community, and native wildflowers are more noticeable. This alliance is not considered sensitive. In the California buckwheat scrub alliance, the dominant species is California buckwheat. Five stands of this alliance were mapped on the roadcuts and fills. The sand-aster and perennial buckwheat fields alliance is characterized by its dominant species, sand-aster (*Corethrogyne filaginifolia*) and protruding buckwheat (*Eriogonum nudum* var. *indictum)*. Though this alliance is considered sensitive by the California Department of Fish and Wildlife, in the Biological Study Area this alliance did not meet the minimum mapping unit to be included in this macrogroup. However, impacts to rare plants, including protruding buckwheat, are discussed further in Section 2.4.3 Plant Species.

On the drier, eastern side of the summit, allscale scrub is present in a few areas of the Biological Study Area. The dominant species of this alliance is allscale, and associated species include California buckwheat and coyote brush (*Baccharis pilularis*). It is not considered sensitive by the California Department of Fish and Wildlife.

Habitat Connectivity

California annual grassland is the dominant plant community within the Biological Study Area and provides habitat for a diverse range of species as discussed in Sections 2.4.4 Animal Species and 2.4.5 Threatened and Endangered Species. Barriers that inhibit the movement of wildlife divide natural communities and their habitats, a process referred to as habitat fragmentation. Habitat fragmentation can create changes in the composition and dynamics of natural communities. The existing highway can act as a physical, visual, and behavioral barrier for wildlife that use grassland habitat in the region for foraging, shelter, and/or breeding. This includes larger mammals such as fox and coyotes, and also smaller animals like reptiles and amphibians.

Within the existing Antelope Grade section, portions of the highway contain up to three lanes to accommodate passing vehicles, making it difficult for wildlife to cross safely. There is no center median barrier in this section of State Route 46, but the existing highway can result in direct mortality to animals that are hit by vehicles as they attempt to cross the roadway. Also, a variety of fence types along the existing Caltrans right-of-way and on adjacent private properties (to keep in livestock) also inhibit wildlife movement.

Figure 2-5 Biological Study Area Map

Figure 2-6 Vegetation Communities Map

Environmental Consequences

The Biological Study Area includes the maximum amount of potential disturbance areas for both permanent and temporary impacts associated with construction of the project, including the grading area, roadway, span bridges, removal of the existing roadbed, culvert installation, and access roads.

Analysis of project impacts on natural communities focuses only on sensitive plant communities. Because California annual grassland is not a sensitive plant community, it is not discussed further in this section. However, the annual grassland plant community is considered habitat for many sensitive species, including the endangered San Joaquin kit fox and the threatened California tiger salamander, which are discussed more in Sections 2.4.4 and 2.4.5 Animal Species and Threatened and Endangered Species, respectively. Impacts to California red-legged frog critical habitat are discussed in Section 2.4.5 Threatened and Endangered Species. Impacts to protruding buckwheat are discussed in Section 2.4.3 Plant Species.

Permanent impacts occur when human-made structures or hard surfaces encroach into a natural community. For the proposed project, permanent impacts would occur due to installation of the widened roadway, bridge abutments, and culverts. Approximately 0.03 acre of permanent impacts to Hillside Daisy Association are anticipated due to installation of the roadway.

Temporary, construction-period impacts would occur throughout the vicinity of the project area due to grading and ground disturbance required to construct the roadway. This includes cut and fill of slopes for the surface of the road as well as slope rounding to improve the visual appearance of cut slopes and temporary access roads to reach project areas. Approximately 1.60 acres of temporary impacts to Hillside Daisy Association are anticipated due to grading required for the project.

Permanent and temporary impacts to each natural community and critical habitat are outlined in Table 2-11.

Table 2-11 Impacts to Natural Communities and Critical Habitat

Community or Critical Habitat	Sensitive?	Biological Study Area (acres)	Permanent Impacts (acres)	Temporary Impacts (acres)
California Grassland	No	245.90	24.92	94.39
Hillside Daisy Association	Yes	8.61	0.03	1.60
Shale Barren	No	7.08	0.99	3.09
Coastal Scrub	No	8.83	0.41	4.19
California Red-legged Frog Critical Habitat	Yes	224.05	18.06	77.81

Habitat Connectivity

The project has the potential to impact wildlife species by converting the two-lane rural highway to a four-lane expressway and contributing to the loss of connectivity between large, intact habitats north and south of State Route 46. Without any permeability features included in the design of the project, the project would exacerbate the highway's barrier effects for not only large wildlife species in the project area but also smaller species such as the San Joaquin kit fox and California red-legged frog. To minimize the increased risk for wildlife crossing the roadway, Caltrans would incorporate avoidance, minimization, and mitigation measures discussed further in Section 2.4.4 Animal Species and 2.4.5 Threatened and Endangered Species. This includes appropriately sized culverts and undercrossings whenever feasible and the construction of a bridge at post mile 58.1 for larger species. Caltrans would also install directional fencing to encourage use of these features by wildlife species, which may reduce the barrier effect of the highway. This fencing would also exclude wildlife from entering the highway system at dangerous areas and extend out approximately 150 feet in either direction of undercrossings to guide wildlife to the safe crossing location.

The Antelope Grade section would be designed to improve landscape-level connectivity for all species as well as improve hydrologic connectivity. Within the Antelope Grade section, the existing highway contains only approximately 22.5 linear feet of permeability in the form of a few culverts 36-inch or larger; the proposed Antelope Grade section is anticipated to add at minimum at least 194.5 linear feet of permeability in the form of bridge structures, box culverts, and 36-inch or larger culverts. Five additional 36-inch culverts and three large concrete box culverts would be included in the Antelope Grade section (currently, there are only seven 36-inch culverts) to add additional permeability. This increase in permeability would promote safe and effective wildlife movement throughout the project area.

Currently, many jurisdictional features within the project area are bisected by the existing highway and their only connection under the roadway are undersized culverts. Removing the old roadbed and undersized culverts that are affecting these features and designing the new highway to fully span the features would allow the area to return to its natural form, unimpeded or restricted by human-made elements. Improving connectivity and water flow within the project area would also contribute to downstream improvements to water flow and habitat. The improvements would benefit many species within the region that use these habitats, including sensitive reptiles and amphibians.

Removal of the old roadbed and its undersized culverts along portions of the Antelope Grade section, along with the construction of structures that will span jurisdictional features, would improve habitat connectivity, facilitate wildlife movement, and restore hydrologic connectivity. Caltrans expects that with the implementation of numerous project design elements to restore and

enhance habitat connectivity and ecological function, impacts of the proposed project's effects on habitat connectivity would be less than significant.

Avoidance, Minimization, and/or Mitigation Measures

No separate avoidance, minimization, or mitigation measures for impacts to sensitive natural communities are proposed. Measures for protruding buckwheat are discussed separately in Section 2.4.3 Plant Species. Measures for habitat connectivity that have been incorporated into the proposed project design are discussed above and in 2.4.5 Threatened and Endangered Species.

2.4.2 Wetlands and Other Waters

Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (33 United States Code 1344), is the main law regulating wetlands and surface waters. One purpose of the Clean Water Act is to regulate the discharge of dredged or fill material into waters of the U.S., including wetlands. Waters of the U.S. include navigable waters, interstate waters, territorial seas, and other waters that may be used in interstate or foreign commerce. The lateral limits of jurisdiction over non-tidal water bodies extend to the ordinary high-water mark, in the absence of adjacent wetlands. When adjacent wetlands are present, Clean Water Act jurisdiction extends beyond the ordinary high-water mark to the limits of the adjacent wetlands. To classify wetlands for the purposes of the Clean Water Act, a three-parameter approach is used that includes the presence of: hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the Clean Water Act. However, some wetlands having all three parameters that are isolated or not directly connected to a navigable water are not subject to federal regulation.

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

The U.S. Army Corps of Engineers issues two types of 404 permits: General and Individual. There are two types of General permits: Regional and Nationwide. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect.

Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Regional or Nationwide Permit may be permitted under one of U.S. Army Corps of Engineers Individual permits. There are two types of Individual permits: Standard permits and Letters of Permission. For Individual permits, the U.S. Army Corps of Engineers' decision to approve is based on compliance with U.S. Environmental Protection Agency's Section 404(b)(1) Guidelines (40 Code of Federal Regulations 230), and whether permit approval is in the public interest. The Section 404 (b)(1) Guidelines were developed by the U.S. Environmental Protection Agency in conjunction with the U.S. Army Corps of Engineers, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The guidelines state that the U.S. Army Corps of Engineers may not issue a permit if there is a "least environmentally damaging practicable alternative" 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 (Executive Order 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, Executive Order 11990 states that a federal agency, such as the Federal Highway Administration and/or Caltrans, as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: (1) that there is no practicable alternative to the construction and (2) the proposed project includes all practicable measures to minimize harm. A Wetlands Only Practicable Alternative Finding must be made.

At the state level, wetlands and waters are regulated mainly by the State Water Resources Control Board, the Regional Water Quality Control Boards and the California Department of Fish and Wildlife. 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 the California Department of Fish and Wildlife before beginning construction. If the California Department of Fish and Wildlife determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. The California Department of Fish and Wildlife jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the U.S. Army Corps of Engineers may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the California Department of Fish and Wildlife.

The Regional Water Quality Control Boards were established under the Porter-Cologne Water Quality Control Act to oversee water quality. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements and may be required even when the discharge is already permitted or exempt under the Clean Water Act. In compliance with Section 401 of the Clean Water Act, the Regional Water Quality Control Boards also issue water quality certifications for activities that may result in a discharge to waters of the U.S. This is most frequently required in tandem with a Section 404 permit request. The Biological Study Area crosses boundaries of two Regional Water Quality Control Boards; therefore, the State Water Resources Control Board may issue the water quality certification.

Affected Environment

The Supplemental Natural Environment Study prepared in August 2023 was the main source used in preparation of this section. The Supplemental Natural Environment Study included an updated Jurisdictional Waters Assessment, which formally delineated or mapped out the location and size of wetlands, other waters, and riparian areas of the purposes of federal, state, and local regulation. The 2005 ND/FONSI identified jurisdictional wetlands and other waters within the project study area. Since that time, additional field surveys were conducted from 2019 to 2023, including a delineation field review with U.S. Army Corps of Engineers staff on June 28, 2023. An updated Jurisdictional Delineation Report can be found in Appendix C of the Supplemental Natural Environment Study. Figure 2-7 shows the identified jurisdictional waters within the Biological Study Area where the jurisdictional delineation assessment was conducted, and an overview of the resources found. Focal Areas A, B, C, and D are shown in more detail in Figures 2-8 through 2-11.

Figure 2-7 Jurisdictional Areas Within Biological Study Area

Figure 2-8 Jurisdictional Area – Focal Area A

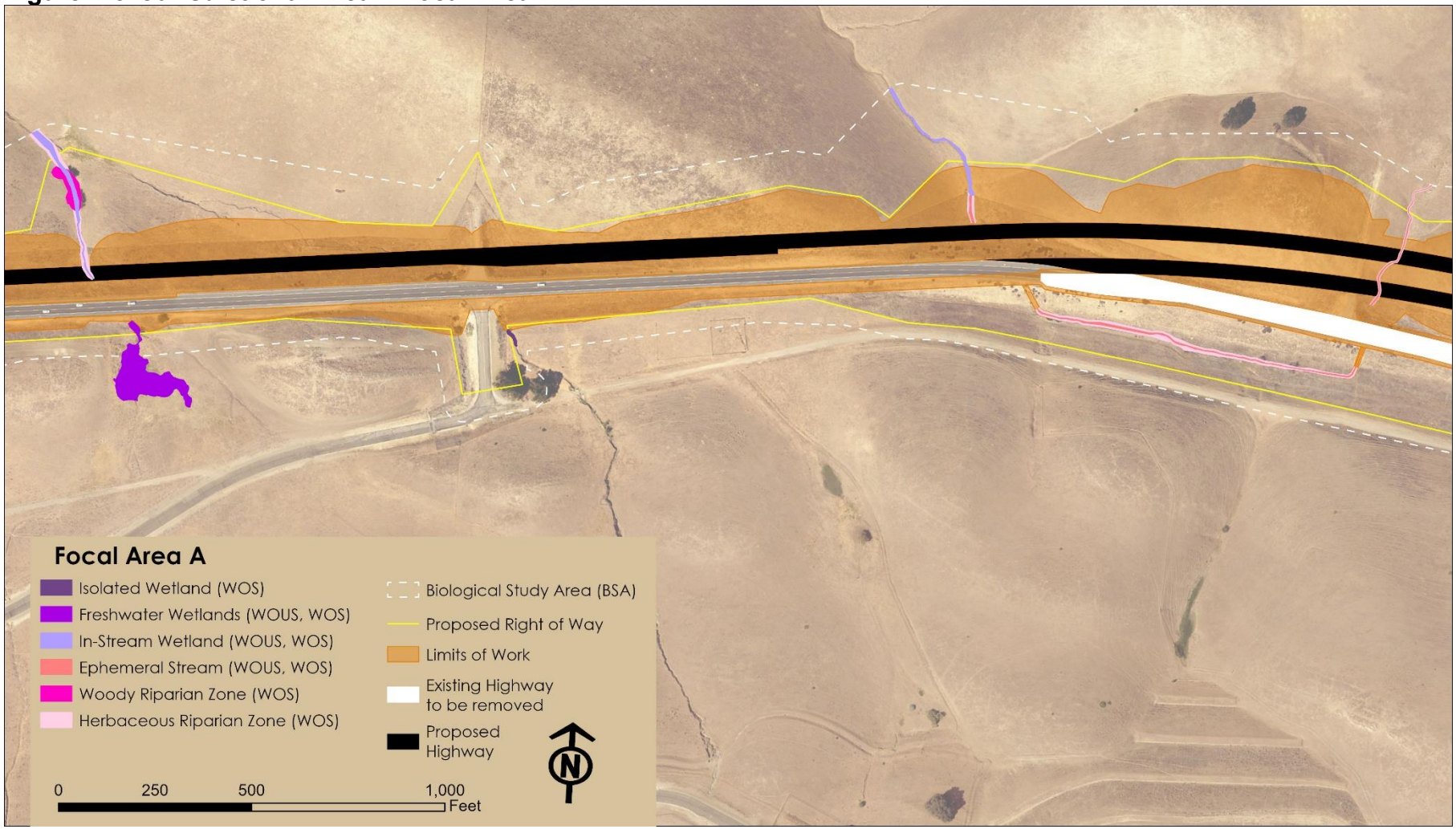


Figure 2-9 Jurisdictional Area – Focal Area B

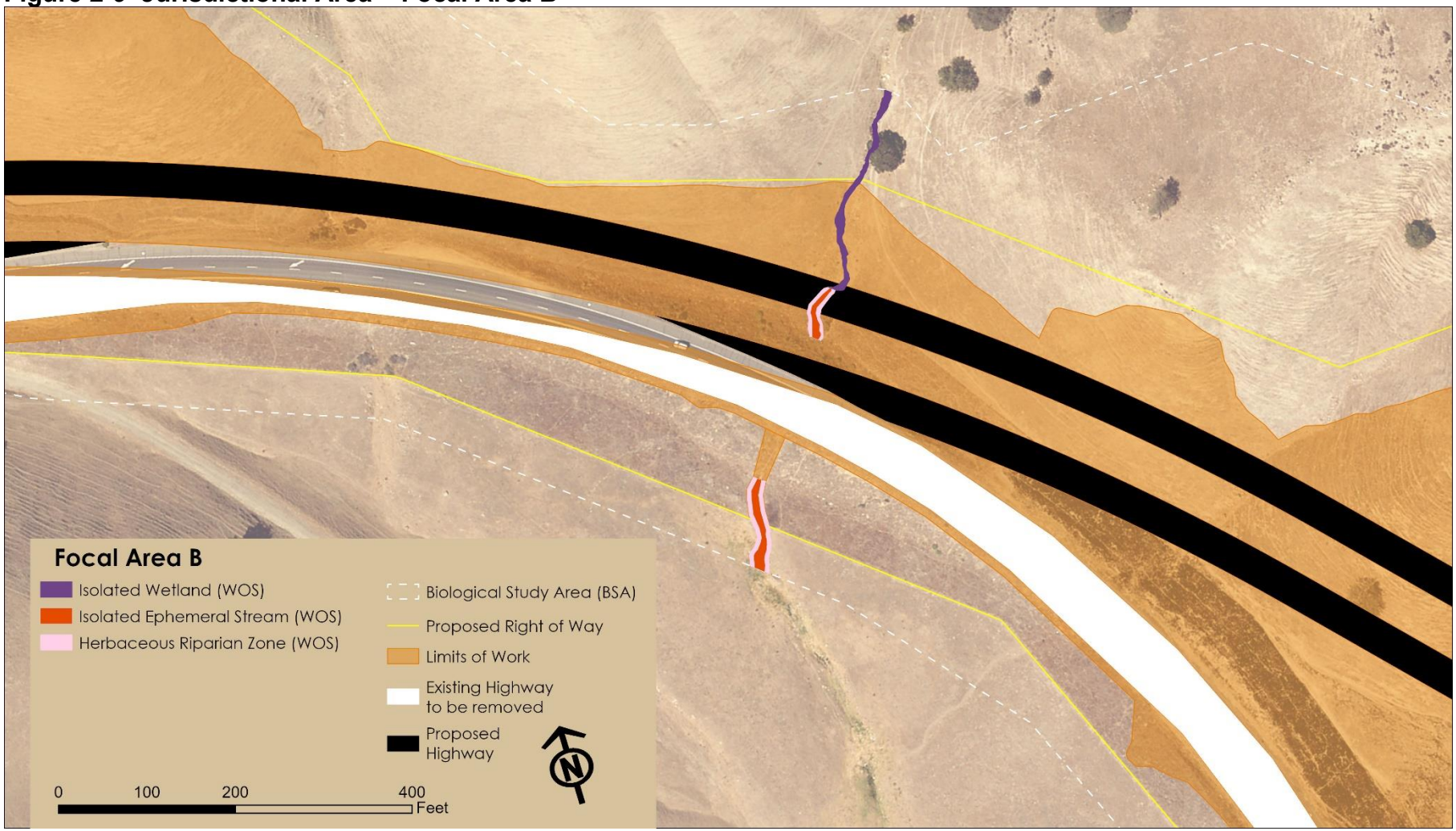


Figure 2-10 Jurisdictional Area – Focal Area C

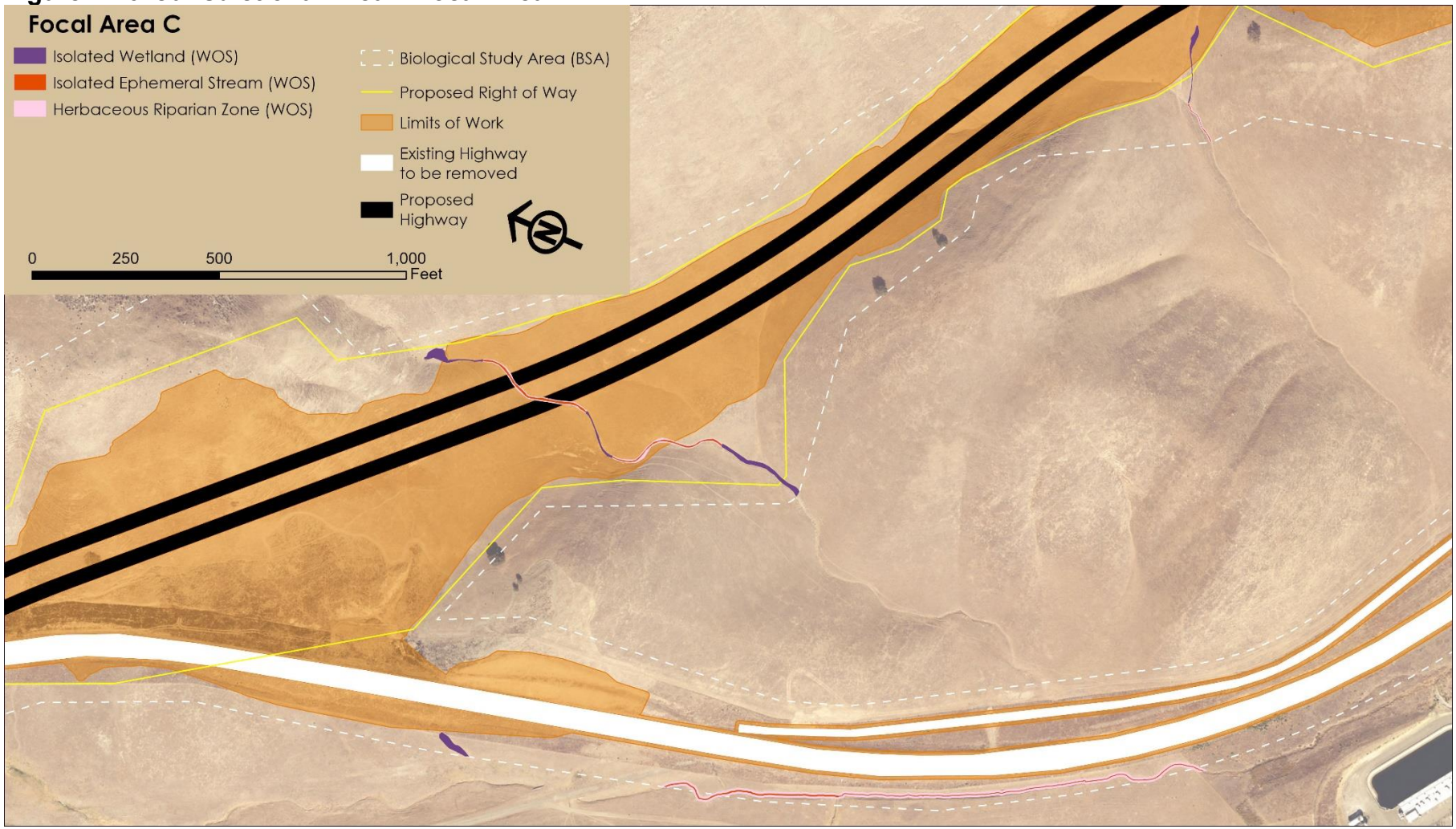
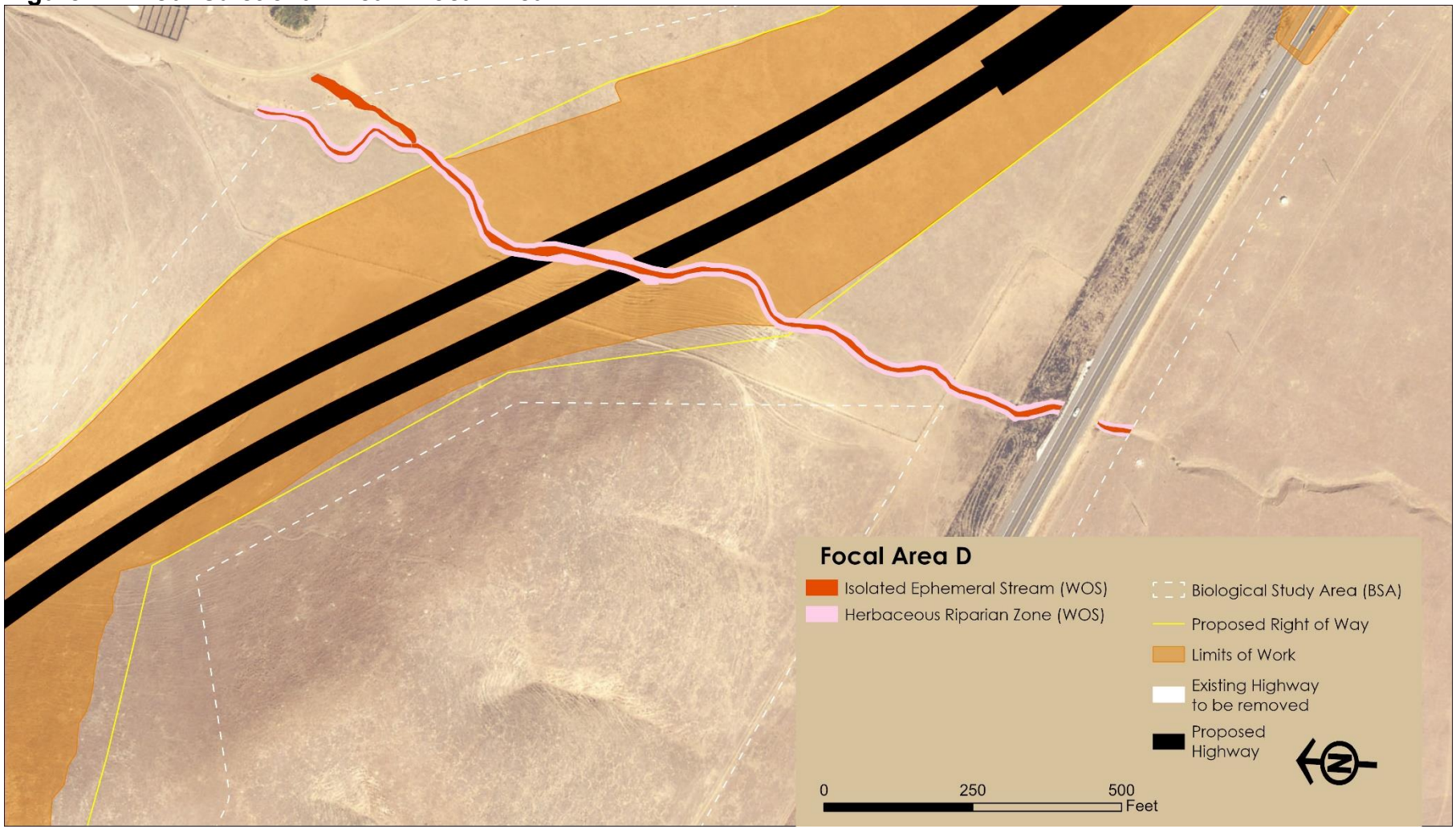


Figure 2-11 Jurisdictional Area – Focal Area D



Wetlands, such as marshes, bogs or vernal pools, are areas that are inundated or saturated by water for prolonged periods. The presence of water leads to the formation of a certain type of soil that supports a community of water-loving organisms. Jurisdictional waters, including wetlands, are formally delineated – meaning that the location and size of a wetland area is mapped out – for the purposes of federal, state, and local regulation. Federal and state regulatory agencies have different criteria for what constitutes a wetland. Regulatory agencies protecting jurisdictional features within the Biological Study Area include one federal agency, the U.S. Army Corps of Engineers, and two state agencies, the California Department of Fish and Wildlife and the State Water Resources Control Board.

The U.S. Army Corps of Engineers defines federal wetlands as areas where 1) all three wetland parameters are present (presence of water-loving vegetation, wetland hydrology, and water saturated soils), and 2) occur below the ordinary high-water mark of a federally regulated drainage feature or are connected to other jurisdictional waters. Areas below the ordinary high-water mark or that are connected to other jurisdictional waters but are lacking at least one of the three wetland parameters are referred to as Other Waters of the U.S. Recent policy changes and Supreme Court decisions have created some uncertainty regarding limits of federal jurisdiction, but based on the current understanding of federal jurisdictional limits, Caltrans anticipates that some features within the Biological Study Area will be subject to U.S. Army Corps of Engineers permitting requirements.

State regulated waters have a broader definition that includes areas that extend from the channel bed to the top of a bank or outer edge of riparian zone (whichever is greater) and also include adjacent wetlands and non-federal isolated waters. For state-regulated waters, the term intermittent stream refers to areas below the ordinary high-water mark (i.e., equivalent to federal Other Waters of the U.S.), while the term streambank refers to areas that are above the high-water mark. The state-regulated resources in the Biological Study Area include wetlands, streams, riparian areas, herbaceous stream banks, and isolated waters not subject to federal jurisdiction.

The Biological Study Area includes aquatic features such as seeps and springs, wetlands, and small stream channels with ephemeral and intermittent flows. The Biological Study Area is bisected by Polonio Pass, or Antelope Grade, which creates a watershed divide with the western portion within the Middle Cholame Creek U.S. Geological Survey Hydrologic Unit Code 12 watershed and the eastern portion within the Woods Canyon U.S. Geological Survey Hydrologic Unit Code 12 watershed. Four locations have been identified as containing jurisdictional waters (Focal Area A, B, C, and D) as shown in Figure 2-7.

Focal Area A as shown in Figure 2-8 includes potentially jurisdictional aquatic resources in the Middle Cholame Creek watershed, which are anticipated to

be subject to U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife jurisdiction. These include a seep wetland south of State Route 46 that forms the headwater of a small stream, which includes some areas of wetland waters and some red willow canopy. This feature has water late into the spring and has the most habitat complexity; the other systems generally lack woody vegetation and in most years, have water for only a short time after storms. The stream originating from the western seep flows north out of the Biological Study Area and ultimately contributes water to Cholame Creek outside the Biological Study Area.

One additional natural stream system originates north of State Route 46, crosses south under the highway through an existing culvert and flows westward through a ditched section of stream, before flowing north under the highway through another culvert, and continuing northwest beyond the Biological Study Area. This system generally has an earthen bed and herbaceous cover on the banks rather than woody riparian vegetation, in normal and dry years. In wetter than typical years, the downstream-most section supports annual facultative (plant species that can occur in both wetlands and uplands) and wetland vegetation such as rabbitsfoot grass, cocklebur and seep monkeyflower, while in dry years vegetation in this reach is undifferentiated from surrounding upland annuals, other than occurring in lower density compared with the adjoining uplands.

In addition to these natural aquatic resources, some stormwater swales, roadside ditches and erosional features such as gullies are present. Typically, stormwater swales constructed in uplands and erosional features such as gullies are not considered aquatic resources, but in some cases such features may be regulated by the State Water Resources Control Board or Regional Water Quality Control Board when they impact beneficial uses of natural systems downslope. A prominent gully feature in the western Biological Study Area appears to originate on the hill south of State Route 46 where drainage from the adjacent Department of Water Resources driveway has eroded deeply into the slope. The feature is deeply incised and generally lacks vegetation, and the concentration of water in the gully has caused the gully to continue downslope for several hundred feet. One seep wetland persists adjoining this gully south of State Route 46.

The Biological Study Area east of Polonio Pass is in the Woods Canyon watershed and drains east toward the San Joaquin Valley. This area includes Focal Areas B, C, and D. A previous U.S. Army Corps of Engineers determination found that the nearest potential receiving water—Franciscan Creek—is isolated and does not have a significant nexus to traditional navigable waters. Though the determination has expired and some policies have changed, the geographic isolation of this area has not. It is anticipated that aquatic resources on the east side of the Biological Study Area will be subject only to state jurisdiction.

Aquatic resources east of Polonio Pass include a few unnamed intermittent streams, with mostly herbaceous vegetation on the banks. Some of these systems include patches of wetland waters interspersed with non-wetland reaches. In dry years, many of these systems had a bare or sparsely vegetated bed and upland vegetation at margins and on banks. However, in 2023, which was wetter than typical, surface water was present late into the spring, and hydrophytic annuals including seep monkeyflower, toad rush and rabbitsfoot grass were dominant in the streambed at some locations. Wetland vegetation is expected in wetter than typical years, while vegetation may be absent or feature only upland species in dry years. These features were mapped as isolated wetlands and waters based on presence of hydrophytes and indicators of surface waters in 2023.

Some of the stream features lacked wetland indicators even in wet years, including two additional unnamed ephemeral drainages that lack woody riparian cover and do not have wetland features near the eastern project limits. The drainages contain features that are delineated as waters of the state and herbaceous streambank.

Environmental Consequences

Estimates of permanent and temporary impacts to federal and state jurisdictional wetlands and waters are presented in Table 2-12 for the Antelope Grade North Alternative. Estimated impacts were determined by overlapping the proposed cut and fill lines as well as existing pavement removal and drainage plans with the preliminary jurisdictional determination mapping prepared for the Jurisdictional Water Assessment.

Permanent impacts are considered any area within the footprint of the stream or streambank that would be filled, either with a human-made structure or with soil so that the area would no longer function as an aquatic resource. Temporary impacts include all areas needed for access during construction, creation of temporary crossings for construction of bridge features, as well as temporary access for removal of existing structures on the existing roadway. The areas quantified below as re-established waters include two existing culvert systems that cross intermittent streams; the infrastructure would be removed, and the open waterway would be restored. Bridge features have been designed to avoid permanent impacts to jurisdictional waters, and at this time no rock slope protection is anticipated in the waterways at the bridge location, though some grading would be needed to restore a stable channel after the existing culvert at this location is removed.

Table 2-12 Impacts to Jurisdictional Features Mapped in the Biological Study Area

Jurisdictional Area	Permanent Impact (Acres)	Temporary Impact (Acres)	Re-establish Waters (Acres)	Agency with Jurisdiction
In-stream Wetland	0.019	0.011	No value	U.S. Army Corps of Engineers, Regional Water Quality Control Board, California Department of Fish and Wildlife
Adjacent Wetland	0	0.014	No value	U.S. Army Corps of Engineers, Regional Water Quality Control Board, California Department of Fish and Wildlife
Streambed (to Ordinary High-Water Mark)	0.031	0.007	0.032	U.S. Army Corps of Engineers, Regional Water Quality Control Board, California Department of Fish and Wildlife
Isolated Streambed	0.208	0.009	No value	Regional Water Quality Control Board, California Department of Fish and Wildlife
Isolated Wetland	0.068	0.003	No value	Regional Water Quality Control Board, California Department of Fish and Wildlife
Herbaceous Streambank	0.396	0.058	0.063	Regional Water Quality Control Board, California Department of Fish and Wildlife
Total	0.722	0.102	0.095	Totals row

Anticipated impacts to jurisdictional features west of Polonio Pass include the new span bridges at post mile 58.1. Bridges are proposed to replace an existing culvert and span the seep wetland and wetland waters features at the western end of the project. This would temporarily impact the wetland and may impact a small portion of red willow canopy. However, the bridge structures would allow for restoration of natural waters in the system where a culvert is currently present and would avoid permanent wetland impacts by spanning the wetland. Also, culvert relocation to support the new alignment would impact some of the ephemeral stream and associated in-stream wetland in this area, which would be partially offset by removal of the existing culvert in conjunction with roadbed removal. Aquatic resources east of Polonio Pass would be impacted to construct new culverts or modify existing culverts to support the new road embankment.

The project would result in permanent impacts to non-wetland streams, as well as to three-parameter wetlands, including some wetlands likely subject to federal jurisdiction, though most permanent wetland impacts would affect features that are isolated and not anticipated to be federally regulated. Many of these impacted areas showed wetland features only in the wettest, above-average rainfall years and functioned more like ephemeral streams under drier conditions. Temporary impacts would affect an adjacent wetland and an in-stream wetland at the westernmost end of the project to allow access for construction and temporary crossings over the drainage areas while new bridge structures are under construction. The project would also result in temporary

impacts to streams and herbaceous streambanks to install new culverts and remove the existing highway and associated culverts, including some areas anticipated to be federally regulated as well as several isolated areas.

Streams west of Polonio Pass are anticipated to be regulated as other waters of the United States subject to U.S. Army Corps of Engineers jurisdiction to the ordinary high-water mark. The in-stream and adjacent wetlands in this section of the project are also expected to be subject to U.S. Army Corps of Engineers jurisdiction to the edge of areas exhibiting all three parameters. Stream and in-stream wetland features east of Polonio Pass are anticipated to be isolated from federally regulated waters and therefore subject only to state regulation. The Regional Water Quality Control Board/State Water Resources Control Board and California Department of Fish and Wildlife have jurisdiction over these areas as waters of the state and streams, respectively, as well as the acreage encompassed by the streambank, which extends from the ordinary high-water mark to the top of the bank.

Minimizing impacts to the jurisdictional features in the project area is one of many factors considered during the design phase for the project. The dimensions of the structures have been modified, where feasible, to completely span the waterway and avoid permanent impacts at the bridge location where the highest quality wetland habitat is present. Priority for bridge construction was given to the location that currently supports the most diverse aquatic habitat, including seeping water that is present year-round, a wider diversity of native perennial hydrophytes and adjacent woody riparian vegetation. This location also has high potential for restoration efforts. Where fully spanning structures were not feasible, other design refinements were made, including the use of steeper embankments with guardrail, and culverts were increased in size and capacity where new longer culverts replaced existing culverts.

Where culverts are proposed, the structures are being increased in size compared with the current conditions, to allow for improved hydrologic connectivity as well as providing wildlife movement opportunities throughout the project area.

Native Trees

Trees are scarce within the Biological Study Area, though several native and non-native trees are present, including blue gum eucalyptus, almond, blue oak, red willow, and saltcedar. Four trees were identified for removal due to their location in or proximity to the proposed roadway, including one blue oak and three red willows. The red willows are within a jurisdictional feature and would likely require compensatory mitigation for their removal. The mitigation ratios for the willows would be determined at a later date in consultation with the regulatory agencies but are anticipated to require at least three replacement trees for each removed tree. The single blue oak that would potentially be removed does not occur within a jurisdictional area, and

compensatory mitigation would not be required. Replanting acorns or oak saplings would be explored in conjunction with the Caltrans Landscape Architecture Division, though it is anticipated there would be low success with replanting this species in an arid region during prolonged drought conditions.

Caltrans best management practices and standard specifications relating to spill prevention, erosion control, equipment staging, and other activities with the potential to affect wetlands and waters would be implemented to protect jurisdictional areas during construction.

Despite minimization measures, some permanent impacts would occur where longer culverts are necessary to support the additional lanes, and where the new alignment requires culverts in locations that did not previously support them. Mitigation measures described below would reduce potentially significant impacts to wetlands and waters to less than significant.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures are included for impacts to jurisdictional areas below. Measures to protect jurisdictional areas were not included in the *2005 ND/FONSI*; instead, the document stated that minor impacts to wetlands and other waters of the U.S. would be mitigated via wetland creation and/or purchase of wetland acres. The measures included below replace the language in the Wetlands section of the *2005 ND/FONSI* Mitigation and Monitoring Program in Appendix F.

Minimization Measure WET 1 – Prior to construction, Caltrans shall obtain a Section 404 Nationwide Permit from the U.S. Army Corps of Engineers, a Section 401 Water Quality Certification/Waste Discharge Requirements from the Regional Water Quality Control Board or State Water Resources Control Board, and a Section 1602 Streambed Alteration Agreement from the California Department of Fish and Wildlife.

Mitigation Measure WET 2 – Restoration for impacts to jurisdictional waters shall occur at a 1 to 1 ratio (acreage) for temporary impacts, and compensatory mitigation shall occur at a 3 to 1 ratio (acreage) for permanent impacts. Restoration and mitigation shall be achieved through onsite restoration (re-establishment) and/or pursuing purchase of offsite mitigation credits from an in-lieu fee program, depending on the impact location within the project area and in accordance with the associated permit requirements.

Mitigation Measure WET 3 – Impacts to red willows in jurisdictional areas shall be replaced at a minimum of three replacement trees for every tree with a trunk greater than 4 inches in diameter at breast height removed. Final compensatory mitigation will be determined during the consultation process with the regulatory agencies.

Avoidance Measure WET 4 – Prior to any ground-disturbing activities, environmentally sensitive area fencing shall be installed around jurisdictional waters and the dripline of trees to be protected within project limits. Caltrans-defined environmentally sensitive areas will be noted on design plans and delineated in the field prior to the start of construction activities.

Avoidance Measure WET 5 – No construction activities shall be conducted in jurisdictional areas between November 1 through April 30 without prior written approval by the State Water Resources Control Board or Regional Water Quality Control Board. Caltrans shall submit detailed plans and descriptions for proposed activities to occur in jurisdictional areas between November 1 through April 30 at least 21 working days prior to the start of the proposed work. Work within jurisdictional areas that occurs during the wet season requires prior approval by the State Water Resources Control Board or Regional Water Quality Control Board through submittal of a Preparedness Plan for Rain/Waterbody Flow Events During May and October Work.

Avoidance Measure WET 6 – No construction activities shall occur at any time during rain events or on any day for which the National Weather Service has predicted a chance of at least 0.1 inch of rain within a 24-hour period for Shandon, California. Construction may resume after rain has ceased, the National Weather Service predicts clear weather for at least 24 hours, and the site conditions are dry enough to continue work without discharge of sediment or other pollutants from the project site.

Avoidance Measure WET 7 – No concrete shall be poured if the National Weather Service 5-day forecast predicts a 10 percent or greater chance of rain for Shandon, California.

Avoidance Measure WET 8 – All poured concrete must be protected from contact with rainwater or surface waters for 30 days or until testing levels for pH with tap water measures below 9.5.

Avoidance Measure WET 9 – No work shall occur in areas of standing or flowing surface water. If dewatering or diversion operations are necessary, Caltrans shall submit a detailed dewatering/diversion plan to the State Water Resources Control Board or Regional Water Quality Control Board staff and provide them 30 days review and approval time prior to any dewatering or diversion.

Avoidance Measure WET 10 – Jurisdictional areas shall be stabilized for winter prior to November 1, either by completing construction in these areas, including installation of permanent erosion control measures, or by implementing winterization stabilization measures capable of stabilizing the area and preventing erosion under winter rain and flow conditions generated by the 10-year, 24-hour storm event.

Avoidance Measure WET 11 – All equipment shall be cleaned and free of weed propagules prior to entry into jurisdictional features.

Avoidance Measure WET 12 – Erosion and sediment control measures shall be onsite prior to the start of construction and kept onsite so they are immediately available for installation in anticipation of rain events. Effective erosion control measures must be installed no later than the day prior to predicted rain events (0.1 inch or more in 24 hours).

Avoidance Measure WET 13 – Staging areas for mobile equipment and mobile equipment fueling and storage shall be located at least 100 feet away from creek banks and in a location where fluids or accidental discharges cannot flow into the jurisdictional areas. All stationary equipment located within the creek banks shall be positioned over secondary containment, and refueling of stationary equipment within jurisdictional areas requires prior approval by the State Water Resources Control Board or Regional Water Quality Control Board through submittal of a stationary equipment refueling plan. Stationary equipment must be removed from the channel and staged at least 100 feet away from jurisdictional areas if the National Weather Service predicts a chance of at least 0.1 inch of rain within a 24-hour period for Shandon, California.

Avoidance Measure WET 14 – Night work is not permitted within jurisdictional areas in streambeds or below tops of bank.

Avoidance Measure WET 15 – All litter, construction debris, equipment, loose materials and soil spoils shall be removed at the end of every work shift. Stockpiles of materials, including temporary stockpiled soils, shall not be stored within jurisdictional areas. Stockpiles not actively being used for construction shall be covered and surrounded with a linear sediment barrier.

2.4.3 Plant Species

Regulatory Setting

The U.S. Fish and Wildlife Service and California Department of Fish and Wildlife 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 species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act and/or the California Endangered Species Act. Please see Section 2.4.5 Threatened and Endangered Species in this document for detailed information about these species.

This section of the document discusses all other special-status plant species, including California Department of Fish and Wildlife species of special concern, U.S. Fish and Wildlife Service candidate species, and California Native Plant Society rare and endangered plants.

Regulatory requirements for the Federal Endangered Species Act can be found at 16 United States Code Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. Regulatory requirements for the California Endangered Species Act can be found at California Fish and Game Code, Section 2050, et seq. Caltrans 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, found at California Public Resources Code, Sections 21000-21177.

Affected Environment

The Supplemental Natural Environment Study dated August 2023 was used to provide technical information and to analyze potential effects of the Antelope Grade North Alternative on special-status plant species known to occur or potentially occur within the limits of the Biological Study Area.

As discussed in Section 2.4 Biological Environment, updates were required to the 2003 Natural Environment Study prepared for the *2005 ND/FONSI* due to changes in the Biological Study Area, regulatory status of species, and Caltrans policies. Preparation of the Supplemental Natural Environment Study required updated botanical surveys, focused sensitive plant surveys, jurisdictional delineations, and general reconnaissance-level wildlife surveys.

Botanical surveys were completed in 2019 and again in 2022 in all areas of the Biological Study Area. Due to changes in the proposed alignment compared with the previous build alternative, additional areas required study. Caltrans completed an updated search of the California Native Plant Society database and the California Natural Diversity Database, and additional botanical surveys were conducted within the entire Biological Study Area at the appropriate times of year for plant identification.

The Biological Study Area now covers a smaller area than the 2003 Natural Environment Study as multiple projects were included then. Several species considered in the 2003 Natural Environment Study have been removed from the current U.S. Fish and Wildlife species list, were not found during field surveys, and will not be discussed further. These include the Camatta Canyon amole (*Hooveria purpurea* var. *reducta*), purple amole (*Hooveria purpurea*), and San Joaquin wooly-threads (*Lembertia congdonii*).

Table 2-13 lists the special-status plant species that were directly observed or have the potential to occur within the Biological Study Area and therefore have the potential to be affected by the project. The plants listed are considered to be of special concern based on (1) federal, state, or local laws

regulating their developments; (2) limited distributions; and/or (3) the presence of habitat required by the special-status plants occurring onsite. California androsace, (*Androsace elongata ssp. acuta*), protruding buckwheat (*Eriogonum nudum var. indictum*), Temblor buckwheat (*Eriogonum temblorense*), and stinkbells (*Fritillaria agrestis*) were found to be present within the Biological Study Area. The San Benito poppy (*Eschscholzia hypecoides*) was identified adjacent to the Biological Study Area. These plants are California Rare Plant Rank species as designated by the California Native Plant Society. No federally or state-listed plant species were found.

Table 2-13 Plant Species Occuring or Known to Occur within the Biological Study Area

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present, Species Present	Rationale
California androsace	*Androsace elongata* ssp. *acuta*	California Rare Plant Rank 4.2	Annual herb. Occurs in chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, and valley and foothill grassland. Flowers March – June.	Species Present	Plant discovered in Biological Study Area. Avoidance and minimization measures implemented.
Oval-leaved snapdragon	*Antirrhinum ovatum*	California Rare Plant Rank 4.2	Chaparral, cismontane woodland, pinyon and juniper woodland, valley and foothill grassland. Bloom Period: May – November.	Habitat Present	Grassland present in Biological Study Area. Not observed during appropriately timed floristic surveys. No further studies required.
Lost Hills crownscale	*Atriplex coronata* var. *vallicola*	California Rare Plant Rank 1B.2	Occurs in chenopod scrub, valley and foothill grassland, vernal pools. Found in powdery, alkaline soils that are vernally moist with *Frankenia*, *Atriplex* spp. and *Distichlis*. Flowers April – September.	Habitat Present	Grassland present in Biological Study Area. Not observed during appropriately timed floristic surveys. No further studies required.
California jewelflower	*Caulanthus californicus*	Federal and State listed Endangered, California Rare Plant Rank 1B.1	Chenopod scrub, pinyon and juniper woodland, valley and foothill grassland, among shrubs. Bloom Period: February – May.	Habitat Present	Grassland present in Biological Study Area. Not observed during appropriately timed floristic surveys. Federal Endangered Species Act effects determination is the project will have no effect on the California jewelflower. California Endangered Species Act determination is that there will be no take of the species. No further studies required.
Lemmon's jewelflower	*Caulanthus lemmonii*	California Rare Plant Rank 1B.2	Pinyon and juniper woodland, valley and foothill grassland. Bloom Period: February – May.	Habitat Present	Grassland present in Biological Study Area. Not observed during appropriately timed floristic surveys. No further studies required.
Hall's tarplant	*Deinandra halliana*	California Rare Plant Rank 1B.2	Cismontane woodland, chenopod scrub, valley and foothill grassland. Bloom Period: April – May.	Habitat Present	Grassland present in Biological Study Area. Not observed during appropriately timed floristic surveys. No further studies required.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present, Species Present	Rationale
Recurved larkspur	*Delphinium recurvatum*	California Rare Plant Rank 1B.2	Chenopod scrub, cismontane woodland, valley and foothill grassland, alkaline areas. Bloom Period: March – June.	Habitat Present	Grasslands present in Biological Study Area. Not observed during appropriately timed floristic surveys. No further studies required.
Kern mallow	*Eremalche parryi* ssp. *kernensis*	Federal-listed Endangered, California Rare Plant Rank 1B.2	Dry, open sandy to clay soils, chenopod scrub, pinyon and juniper woodland, valley and foothill grassland. Bloom Period: March – May.	Habitat Present	Grasslands present in Biological Study Area. Not observed during appropriately timed floristic surveys. Federal Endangered Species Act effects determination is the project will have no effect on Kern mallow. No further studies required.
Hoover's eriastrum	*Eriastrum hooveri*	California Rare Plant Rank 4.2	Annual herb. Occurs in chenopod scrub, valley and foothill grassland, pinyon and juniper woodland. Found on sparsely vegetated alkaline alluvial fans; also in the Temblor range on sandy and sometimes gravelly soils. Flowers March - July.	Habitat Present	Grasslands present in Biological Study Area. Not observed during appropriately timed floristic surveys. No further studies required.
Protruding buckwheat	*Eriogonum nudum* var. *indictum*	California Rare Plant Rank 4.2	Clay, sometimes on ultramafic or serpentine soils, often on slopes; chaparral, chenopod scrub, and cismontane woodland and sometimes in grassland.	Species Present	Plant discovered in Biological Study Area. Avoidance and minimization measures implemented.
Temblor buckwheat	*Eriogonum temblorense*	California Rare Plant Rank 1B.2	Annual herb. Valley and foothill grassland, shale or sandstone, sometimes in clay. Bloom Period: May.	Species Present	Plant discovered in Biological Study Area. Avoidance and minimization measures implemented.
Spiny-sepaled button-celery	*Eryngium spinosepalum*	California Rare Plant Rank 1B.2	Occurs in vernal pools, valley and foothill grassland. In some sites on clay soil of granitic origin; vernal pools, within grassland. Flowers April – June.	Habitat Present	Grasslands present in Biological Study Area. Not observed during appropriately timed floristic surveys. No further studies required.
San Benito poppy	*Eschscholzia hypecoides*	California Rare Plant Rank 4.3	Annual herb. Occurs in chaparral, cismontane woodland, valley and foothill grassland. Frequently found on serpentinic clay or ultramafic-derived soils. Flowers March – June.	Habitat Present	Plant discovered just outside Biological Study Area. Avoidance and minimization measures implemented.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present, Species Present	Rationale
Stinkbells	*Fritillaria agrestis*	California Rare Plant Rank 4.2	Perennial bulbiferous herb. Occurs in cismontane woodland, chaparral, pinyon and juniper woodland, valley and foothill grassland. Found sometimes on serpentine; mostly found in nonnative grassland or in grassy openings in clay soil. Flowers March – June.	Species Present	Plant discovered in Biological Study Area. Avoidance and minimization measures implemented.
Pale-yellow layia	*Layia heterotricha*	California Rare Plant Rank 1B.1	Pinon and juniper woodland, valley and foothill grassland, alkaline or clay soils, Bloom Period: March – June.	Habitat Present	Grasslands present in Biological Study Area. Not observed during appropriately timed floristic surveys. No further studies required.
Munz's tidy-tips	*Layia munzii*	California Rare Plant Rank 1B.2	Chenopod scrub, valley and foothill grassland, hillsides in white-gray alkaline clay soils. March – April.	Habitat Present	Grasslands present in Biological Study Area. Not observed during appropriately timed floristic surveys. No further studies required.
Jared's pepper-grass	*Lepidium jaredii ssp. jaredii*	California Rare Plant Rank 1B.2	Annual herb. Occurs in valley and foothill grassland. Found in alkali flats and sinks; and sandy, alkaline, sometimes adobe soils. Flowers March – May.	Habitat Present	Grasslands present in Biological Study Area. Not observed during appropriately timed floristic surveys. No further studies required.
Showy golden madia	*Madia radiata*	California Rare Plant Rank 1B.1	Valley and foothill grassland, cismontane woodland, chenopod scrub, mostly on adobe clay in grassland or among shrubs. Bloom Period: March – May.	Habitat Present	Grasslands present in Biological Study Area. Not observed during appropriately timed, floristic surveys. No further studies required.
Shining navarretia	*Navarretia nigelliformis* ssp. *radians*	California Rare Plant Rank 1B.2	Cismontane woodland, valley and foothill grassland, vernal pools. Bloom Period: April – July.	Habitat Present	Grasslands present in Biological Study Area. Not observed during appropriately timed floristic surveys. No further studies required.
California alkali grass	*Puccinellia simplex*	California Rare Plant Rank 1B.2	Alkaline, vernally mesic, sinks, flats, and lake margins. Chenopod scrub, meadows and seeps, valley and foothill grassland. Bloom Period: March – May.	Habitat Present	Grasslands present in Biological Study Area. Not observed during appropriately timed floristic surveys. No further studies required.

California Rare Plant Rank

1A = plants presumed extirpated in California and either rare or extinct elsewhere

1B = plants rare, threatened, or endangered in California and elsewhere

2A = plants presumed extirpated in California, but common elsewhere

2B = plants rare, threatened, or endangered in California, but more common elsewhere

3 = plants about which more information is needed (review list)

4 = plants of limited distribution (watch list)

Threat Rank

.1 = Seriously endangered in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)

.2 = Fairly endangered in California (20-80 percent of occurrences threatened)

.3 = Not very endangered in California (less than 20 percent of occurrences threatened or no current threats known)

California Androsace

California androsace (*Androsace elongata* ssp. *acuta*) is an annual herb that is typically found in a variety of habitats, including chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, and valley and foothill grassland. California androsace was observed during field surveys in 2022 in one location within the Biological Study Area. This species was observed in very low numbers; less than 0.012 acre was mapped within the Biological Study Area. Observed individuals in 2022 were just a few centimeters tall; due to this species' very small size, it is possible that some individuals were overlooked.

Protruding Buckwheat

Protruding buckwheat (*Eriogonum nudum var. indictum*) is a perennial herb that is endemic to California. In the Biological Study Area, it is mostly found within grassland on steep north-facing slopes where there is less grazing pressure and potentially increased soil moisture due to the slope aspect. In some areas, it was found intermixed with coastal scrub. Protruding buckwheat was observed during field surveys in 2019 and 2022 in eight stands within the Biological Study Area and one stand outside of the Biological Study Area. Five stands were observed at the western end of the Biological Study Area on the existing steep roadcuts along both sides of State Route 46; three stands were observed on north-facing hills subject to cattle grazing. Approximately 2.365 acres of occupied protruding buckwheat habitat was found within the Biological Study Area.

Temblor Buckwheat

Temblor buckwheat (*Eriogonum temblorense*) is an annual herb that is endemic to California. It is typically found in valley and foothill grassland. Six stands were identified within the Biological Study Area during the 2019 and 2022 botanical surveys, totaling 5.173 acres of Temblor buckwheat habitat. Temblor buckwheat was observed on existing steep roadcuts, shale barrens, and very shallow soils adjoining shale barrens.

San Benito Poppy

San Benito poppy (*Eschscholzia hypecoides*) is an annual herb with a limited distribution that grows in grassy woodlands and chaparral habitats. San Benito poppy was observed in two small locations just outside of the Biological Study Area in grassland habitat during the 2022 botanical surveys. Approximately 0.03 acre of San Benito poppy habitat was found, but none was within the Biological Study Area.

Stinkbells

Stinkbells (*Fritillaria agrestis*) is a perennial bulb that grows in clay soils of grasslands, chaparral, and pinyon and juniper woodland. Occasionally, the plant can be found in serpentine-derived soils. Patches of stinkbells were observed in two locations within the Biological Study Area during the 2019

and 2022 botanical surveys. One of these patches extends outside of the Biological Study Area. Approximately 0.261 acre of stinkbells habitat was mapped within the Biological Study Area.

Environmental Consequences

Substantial effort was made to reduce impacts to sensitive plant species to the greatest extent feasible, but the project could not be designed to entirely avoid impacts to protruding buckwheat, Temblor buckwheat, and stinkbells. Caltrans redesigned the proposed cut and fill slopes to minimize conflicts with mapped sensitive species. California androsace and San Benito poppy would be avoided as a result of this effort, and further avoidance measures are discussed in the following section.

California Androsace

The Antelope Grade North Alternative would not affect California androsace. Grading would occur outside the mapped occurrences of California androsace, and avoidance measures described below would ensure this species is not impacted.

Protruding Buckwheat

The project has been designed to minimize impacts to protruding buckwheat habitat as much as feasible, but could not avoid the species entirely due to the location of the roadway. The Antelope Grade North Alternative would temporarily impact 1.009 acres of protruding buckwheat habitat. Avoidance and minimization measures are described in more detail below. Also, an established population of protruding buckwheat exists within the nearby Palo Prieto Conservation Bank where credits would be purchased to mitigate for impacts to the San Joaquin kit fox and California tiger salamander as discussed in Section 2.4.5 Threatened and Endangered Species. Preserving and enhancing habitat for these species on lands held under the conservation bank may also preserve habitat for protruding buckwheat.

Temblor Buckwheat

The project has been designed to minimize impacts to Temblor buckwheat habitat as much as feasible, but could not avoid the species entirely due to the location of the roadway and required grading. The steepness of the slopes where impacts would occur requires extensive grading that cannot be further reduced. The Antelope Grade North Alternative would permanently impact 0.570 acre and temporarily impact 2.434 acres of Temblor buckwheat habitat.

San Benito Poppy

The Antelope Grade North Alternative would not affect San Benito poppy. Grading would occur outside the mapped occurrences of San Benito poppy, and avoidance measures described below would ensure this species is not impacted.

Stinkbells

Two patches of stinkbells were observed during field surveys within the Biological Study Area. One patch is outside of the grading limits and would be avoided. However, one patch totaling 0.018 acre would be permanently impacted by construction of the Antelope Grade North Alternative. This area cannot be avoided or minimized because it is within the proposed roadway footprint.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures are included for sensitive plant species below. Measures to protect these species were not included in the *2005 ND/FONSI* ; instead, the document stated that compensatory land acquisition would mitigate for impacts to vegetation. The measures included below replace the language in the Vegetation and Wildlife section of the *2005 ND/FONSI* Mitigation and Monitoring Program in Appendix F.

California Androsace

Avoidance Measure PLA 1 – Environmentally Sensitive Area fencing will be installed during construction to prevent inadvertent disturbance to California androsace outside of the grading limits. Fencing shall be shown on the design plans and will be established in the field to alert construction of the sensitive area and to avoid entering it for any reason.

Protruding Buckwheat

Minimization Measure PLA 2 – Environmentally Sensitive Area fencing will be installed during construction to prevent inadvertent disturbance to protruding buckwheat habitat outside of the grading limits. Fencing shall be shown on the design plans and will be established in the field to alert construction of the sensitive area and to avoid entering it for any reason.

Minimization Measure PLA 3 – Caltrans shall collect seed from the protruding buckwheat plants within the project footprint for one to two years prior to construction. These seeds shall be used in the hydroseed mix or hand-broadcast on the new north-facing fill slopes for permanent erosion control.

Temblor Buckwheat

Minimization Measure PLA 4 – Caltrans shall collect seed from the Temblor buckwheat plants within the project footprint for one to two years prior to construction. These seeds shall be hand-broadcast on areas within the new Caltrans right-of-way, any adjacent temporary easements that contain shale barrens with sparse populations of Temblor buckwheat, or where there are shale barrens that are not currently occupied by Temblor buckwheat. It is anticipated that these receiver sites for collected seed will be fenced and protected from construction impacts and grazing pressure for the duration of construction.

Minimization Measure PLA 5 – Environmentally Sensitive Area fencing will be installed during construction to prevent inadvertent disturbance to Temblor

buckwheat habitat outside of the grading limits. Fencing shall be shown on the design plans and will be established in the field to alert construction of the sensitive area and to avoid entering it for any reason.

San Benito Poppy

Avoidance Measure PLA 6 – Environmentally Sensitive Area fencing will be installed during construction to prevent inadvertent disturbance to San Benito poppy outside of the grading limits. Fencing shall be shown on the design plans and will be established in the field to alert construction of the sensitive area and to avoid entering it for any reason.

Stinkbells

Minimization Measure PLA 7 – Environmentally Sensitive Area fencing will be installed during construction to prevent inadvertent disturbance to stinkbells outside of the grading limits. Fencing shall be shown on the design plans and will be established in the field to alert construction of the sensitive area and to avoid entering it for any reason.

Minimization Measure PLA 8 – Caltrans shall collect seeds and fruiting capsules from stinkbells within the project footprint for one to two years prior to construction. Seeds and fruiting bodies shall be used in the hydroseed mix or hand-broadcast in appropriate areas on the new north-facing fill slopes for permanent erosion control.

2.4.4 Animal Species

Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service, the National Oceanic and Atmospheric Administration's National Marine Fisheries Service, and the California Department of Fish and Wildlife are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under the federal or state Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section 2.4.5 Threatened and Endangered Species below. All other special-status animal species are discussed here, including California Department of Fish and Wildlife fully protected species and species of special concern, and U.S. Fish and Wildlife Service or National Marine Fisheries Service candidate species.

Federal laws and regulations relevant to wildlife include the following:

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

State laws and regulations relevant to wildlife include the following:

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

Affected Environment

The Supplemental Natural Environment Study dated August 2023 was the main source used in preparation of this section. Special-status species are listed in Table 2-14. Twelve special-status species with habitat and the potential to occur within the Biological Study Area are discussed in further detail in this section and include the following: western spadefoot toad (*Spea hammondii*), California glossy snake (*Arizona elegans occidentalis*), San Joaquin coachwhip (*Masticophis flagellum ruddockii*), coast horned lizard (*Phrynosoma blainvillii*), grasshopper sparrow (*Ammodramus savannarum*), golden eagle (*Aquila chrysaetos*), burrowing owl (*Athene cunicularia*), mountain plover (*Charadrius montanus*), California horned lark (*Eremophila alpestris actia*), prairie falcon (*Falco mexicanus*), mountain lion (*Puma concolor*), and American badger (*Taxidea taxus*). Federal or state designated animal species are discussed separately in Section 2.4.5 Threatened and Endangered Species.

Table 2-14 Animal Species Occuring or Known to Occur within the Biological Study Area

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present, Species Present	Rationale
Western spadefoot toad	*Spea hammondii*	California Species of Special Concern	Primarily found in grassland habitats, can be in valley-foothill hardwood woodlands. Prefers open areas with gravelly soils and cobble-sized substrate that collect rainwater for egg-laying. Needs at least 15 weeks to attain metamorphosis.	Habitat Present	Grasslands, shallow seeps, ephemeral drainages present in Biological Study Area, but no soils suitable for breeding. Avoidance and minimization measures implemented.
California glossy snake	*Arizona elegans occidentalis*	California Species of Special Concern	Foothill and valley grasslands and scrub habitat, often with loose or sandy soils.	Habitat Present	Grasslands present in Biological Study Area. Species occurrence 3.7 miles south of Biological Study Area in 1950. Species not observed during surveys. Avoidance and minimization measures implemented.
San Joaquin coachwhip	*Masticophis flagellum ruddockii*	California Species of Special Concern	Open, dry habitats with little or no tree cover. Found in valley grassland and saltbush scrub in San Joaquin Valley. Needs mammal burrows for refuge/eggs.	Habitat Present	Grasslands present in Biological Study Area. Species occurrence 3.7 miles south of Biological Study Area in 2017. Species not observed during surveys. Avoidance and minimization measures implemented.
Coast horned lizard	*Phrynosoma blainvillii*	California Species of Special Concern	Wide variety of habitats, common in lowlands along rocky soils/sandy washes with scattered low bushes. Requires open areas for sunning, bushes for cover, patches of friable soil for burial, ants/insects for food.	Habitat Present	Species occurrence within 0.3 mile of Biological Study Area in 1993. Species not observed during surveys. Avoidance and minimization measures implemented.
Grasshopper sparrow	*Ammodramus savannarum*	California Species of Special Concern	Dense grasslands on rolling hills, lowland plains, in valleys, on hillsides on lower mountain slopes. Favors native grasslands with a mix of grasses, forbs and scattered shrubs. Loosely colonial when nesting.	Habitat Present	Dense grasslands on rolling hills present in some parts of Biological Study Area. Species observed within Biological Study Area during surveys in 2021. Avoidance and minimization measures implemented.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present, Species Present	Rationale
Golden eagle (nesting)	*Aquila chrysaetos*	California Fully Protected Species, Watch List	Open or semi-open grasslands, shrubland, or forest edge. Nest on cliffs, trees, or on human-made structures such as electrical transmission towers.	Nesting Habitat Absent	No large trees or transmission towers for nesting habitat within Biological Study Area; cliffs that may provide nesting habitat located outside of Biological Study Area and on private property. Species observed flying through Biological Study Area on multiple occasions. Avoidance and minimization measures implemented.
Burrowing owl (burrow sites)	*Athene cunicularia*	California Species of Special Concern	Open, dry grasslands, deserts and scrublands characterized by low-growing vegetation. Nests in underground burrows, typically less than 3 feet deep. Preferred nesting sites have loose soil, some elevation to avoid floods, outlooks, high density of burrows.	Habitat Present	Grasslands and small mammal burrows present within Biological Study Area. No individuals/evidence of burrows being used by burrowing owls observed during surveys. Species occurrence in 1993 within 0.3 miles of Biological Study Area. Avoidance and minimization measures implemented.
Mountain plover (wintering)	*Charadrius montanus*	California Species of Special Concern	Short grasslands, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms. Short vegetation, bare ground and flat topography. Prefers grazed areas and areas with burrowing rodents.	Habitat Present	Species has been observed 4 miles west of the Biological Study Area as recently as 2015. Species not observed during surveys, but suitable foraging habitat is present. Avoidance and minimization measures implemented.
California horned lark	*Eremophila alpestris actia*	California Species of Special Concern	Dry open grasslands with sparse vegetation and plowed fields/mowed areas.	Habitat Present	Observed during surveys in Biological Study Area. Avoidance and minimization measures implemented.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present, Species Present	Rationale
Prairie falcon (nesting)	*Falco mexicanus*	Special Animal List, Watch List	Inhabits dry, open terrain, either level or hilly. Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.	Nesting Habitat Absent	Cliffs and rock outcrops located north of the Biological Study Area. Grasslands in Biological Study Area may be used for foraging. There are multiple species occurrences 2-4 miles from the Biological Study Area from 1970s. Species observed soaring in Biological Study Area during 2022 surveys. Avoidance and minimization measures implemented.
Pallid bat (roosting)	*Antrozous pallidus*	California Species of Special Concern, California Fish and Game Code Protected Mammal	Deserts, grasslands, shrublands, woodlands, forest; most common in open, dry habitats with rocky areas for roosting that protect bats from high temperatures. Day roosts in caves, crevices, mines, sometimes in hollow trees and buildings. Night roosts may be more open sites (porches and buildings). Very sensitive to disturbance of roosting sites.	Roosting Habitat Absent	Cliffs and rock outcrops located just north of the Biological Study Area could serve as roost sites. Grasslands in Biological Study Area can be used for foraging. Not observed during surveys. No further studies recommended.
Townsend's big-eared bat (roosting)	*Corynorhinus townsendii*	California Species of Special Concern, California Fish and Game Code Protected Mammal	Wide variety of habitat in California and extremely sensitive to human disturbance, roosting sites limited. Roosts in open, hanging from walls and ceilings, trees for day and night roosts. Requires caves, mines, rock faces, bridges or buildings for maternity roosts in relatively warm sites.	Roosting Habitat Absent	Cliffs and rock outcrops located just north of the Biological Study Area could serve as roost sites. Grasslands in Biological Study Area can be used for foraging. Not observed during surveys. No further studies recommended.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present, Species Present	Rationale
Short-nosed kangaroo rat	*Dipodomys nitratoides brevinasus*	California Species of Special Concern	Western side of San Joaquin Valley in grassland and desert shrub associations, especially Atriplex. Occurs in highly alkaline soils around Soda Lake. Needs friable soils. Favors flat to gently sloping terrain.	Marginal Habitat Present	Grasslands in Biological Study Area, but no desert shrub associations and only minimal *Atriplex* shrubs found along existing highway shoulder in Biological Study Area. Nearest occurrence from 2001 over 12 miles northeast of Biological Study Area. Not observed during surveys. No further studies recommended.
Mountain lion	*Puma concolor*	State Candidate Species	Generally, can be found wherever deer are present. Usual habitat is steep, rocky canyons or mountainous terrain. Den in rocky outcroppings, dense thickets, and under uprooted trees. Can be found in deserts as well as coastal forests, and from sea level to 1,000-foot elevations.	Habitat Present	Biological Study Area is mostly grassland that may be used by the species for hunting and as movement corridor. Rocky outcrops north of the Biological Study Area may be used for denning. Individuals or their sign not observed during surveys. Avoidance and minimization measures implemented.
American badger	*Taxidea taxus*	California Species of Special Concern	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	Habitat Present	Dry, open, uncultivated habitat present in Biological Study Area. Species observed as roadkill 4.5 miles west of Biological Study Area in 1999 and in den 4.5 miles northwest of Biological Study Area in 2016. Species observed in camera trap under the Cholame Creek bridge in 2020, 3 miles west of the Biological Study Area. Avoidance and minimization measures implemented.

Western Spadefoot Toad

The western spadefoot toad is a California species of special concern. It is not a federally listed species; however, it is addressed in the Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon (USFWS 2005). Spadefoots have catlike eyes with vertical pupils and a single black spade on each hind foot. Much like California tiger salamanders (discussed in Section 2.4.5), spadefoot toads use ponds for breeding only in the winter and spring and spend most of their life in terrestrial habitats and underground. Upon leaving aquatic breeding habitat in the late spring and early summer, adults and juveniles that have recently metamorphosed from tadpoles seek refuge in small mammal burrows or in shallow (4 to 8 inches deep) burrows they dig themselves using their back legs. Little is known about the terrestrial activities of the western spadefoot toad, but movement is thought to be most active at night. Most recent research indicates that the maximum dispersal distance is approximately 860 feet. However, the U.S. Fish and Wildlife Service recommends a minimum of 1-mile dispersal distance from suitable wetlands for the conservation of amphibians.

One western spadefoot toad occurrence was observed during a survey in 2015, approximately 2.8 miles southwest of the Biological Study Area. No spadefoot toads were found during aquatic larval surveys in ponds on the nearby California Flats Solar project, but two adults were unearthed during preparation of the project site later in 2016. This occurrence is approximately 2.25 miles northwest of the Biological Study Area. Surveys in 2017 found spadefoot toads about 4 miles south of the Biological Study Area. Surveys specific for western spadefoot toads were not conducted in the Biological Study Area. Rather, it is assumed that all ponds with the potential to support breeding California tiger salamanders are also suitable for spadefoot toad breeding. The Biological Study Area consists of open, undeveloped grasslands used for grazing and supports robust small mammal populations with numerous burrows that are suitable for spadefoot toad upland habitat.

California Glossy Snake (New Resource)

The California glossy snake is a California species of special concern that ranks as one of the top conservation priorities for snakes within California that are not listed as threatened or endangered. Glossy snakes appear similar to common gophersnakes (*Pituophis catenifer*) but have unkeeled scales that are smooth and glossy, as well as other distinguishing features. This species has adapted to several habitat types, including open desert, grasslands, shrublands, chaparral, and woodlands, and areas with sandy soils to allow for burrowing. Locating glossy snakes can be difficult because the snake tends to occur in low densities and little is known of its abundance along the Central Coast of California.

Surveys specifically for the California glossy snake were not conducted, and no glossy snakes were observed during any surveys within the Biological

Study Area. However, the habitat within this project section is suitable for the California glossy snake; therefore, the species has the potential to occur.

One documented occurrence of the California glossy snake from 1950 was approximately 3.7 miles southwest along Bitterwater Road near Palo Prieto Canyon. All other recorded occurrences of the species are located more than 5 miles away, mostly to the south where there are numerous roadkill records along State Route 58 and State Route 166.

San Joaquin Coachwhip

The San Joaquin coachwhip is a California species of special concern. Coachwhip snakes are long, slender, fast-moving snakes that have large home ranges, some exceeding 300 acres. As a result of their tendency to move large distances, the coachwhip can be more vulnerable to changes in habitat where food resources become more dispersed and patchy. The San Joaquin coachwhip is one of the highest-ranking California amphibians or reptiles susceptible to negative road impacts.

Surveys specifically for the San Joaquin coachwhip were not conducted, and no coachwhips were observed during any surveys within the Biological Study Area. However, the habitat within this project section is suitable for San Joaquin coachwhips and given their low densities and unusual patchy use of the habitat, the species has the potential to occur within the Biological Study Area.

The San Joaquin coachwhip has been observed outside of the Biological Study Area on several occasions by Caltrans biologists in 2017 and 2022. In 2017, one coachwhip was observed at the White Canyon wash and another was observed just west of the perimeter fence at Jack Ranch Café, approximately 3.6 miles west of the Biological Study Area. Also, a San Joaquin coachwhip was observed adjacent to the Cholame Creek bridge along Bitterwater Valley Road in 2022, about 4.4 miles southwest of the Biological Study Area.

Coast Horned Lizard

The coast horned lizard is a California species of special concern. The classification was split in 2009, and the *2005 ND/FONSI* referenced this species as *Phrynosoma coronatum frontale*. These lizards have a flat, oval-shaped body with a ring of horns on their head. They have adapted to feeding on ants, which can make up to 90 percent of their diet. They are found in a variety of habitat types, including sage scrub, dunes, alluvial scrub, annual grassland, chaparral, oak woodland, riparian woodland, Joshua tree woodland, coniferous forest, and saltbrush scrub. They require elements such as loose fine soils for burrowing, open areas for thermoregulation, and shrub cover for refuge. Coast horned lizards have high site fidelity, meaning that they prefer to return to places they have previously occupied, and they exhibit an average daily movement of 154 feet. Coast horned lizards will enter riparian habitats and are able to swim well. This is likely an adaptation to

living in dry sandy washes occasionally prone to flooding. The lizards are generally found from the San Francisco Bay area south to Baja California, from the Pacific Coast inland to the Sierra Nevada. Due to collectors harvesting thousands of individuals in the early 1900s, compounded with urbanization, agricultural conversion, off-highway vehicles, energy development, and nonnative Argentine ants, one estimate considered the species extinct from 35 to 45 percent of its historic range.

Coast horned lizards have been observed outside of the Biological Study Area in sandy loam or fine sandy loam soils on several occasions, including a 1993 California Natural Diversity Database occurrence about 0.3 mile south of the Biological Study Area, and two occurrences 4.1 and 5.6 miles north of the Biological Study Area in the Cholame Valley. Multiple occurrences have also been documented within White Canyon during surveys for the expressway conversion of the Cholame section along State Route 46, about 4.5 miles west of the Biological Study Area. This area was considered prime habitat because of the combination of loose fine sand and shrub cover that occurs within that wash. Coast horned lizards were not observed during surveys for the nearby California Flats Solar project, but potential habitat was found within the project footprint.

Surveys specifically for coast horned lizards were not conducted, and no coast horned lizards were observed during any surveys within the Biological Study Area. However, potential coast horned lizard habitat may be present within the Antelope Grade Section Biological Study Area where there is sandy or loamy soils. Dry sandy washes similar to White Canyon are not present within the Biological Study Area.

Grasshopper Sparrow (New Resource)

The grasshopper sparrow is a California species of special concern. This species occurs only in grasslands and is often absent from areas with trees or extensive shrub cover. Grasshopper sparrow populations have been declining since 1980, particularly in Southern California where urbanization has significantly reduced suitable grasshopper sparrow habitat. Extensive studies have been conducted on Midwest and East Coast populations, but little is known about the California populations.

Grasshopper sparrows were observed or heard numerous times throughout the year during surveys conducted within and adjacent to the Biological Study Area. There is one occurrence in the California Natural Diversity Database from 2002 of a grasshopper sparrow less than a mile east of the Biological Study Area. Based on observations from eBird, the birds are common year-round in the region.

Golden Eagle Nesting Habitat (New Resource)

The golden eagle is a California Fully Protected Species, providing it an additional level of protection. Golden eagles are also protected by the Federal

Bald and Golden Eagle Protection Act enacted in 1940, which has been amended several times since. Golden eagles are one of the most widespread raptors in the world, occurring throughout North America, but also in western and eastern Europe, northern Africa, and Asia. This species typically inhabits large, open or semi-open grasslands, shrublands, and the edge of forests, but usually avoids contiguous forests and developed areas. Golden eagles build their nests on cliffs, in trees, on the ground, as well as on human-made structures such as electrical transmission towers.

An extensive raptor survey was conducted for the California Flats Solar project that included a 10-mile radius from the project site in 2013. That study identified five active golden eagle nests; three of these nests were in the foothills along the west side of Cholame Valley, one nest was found along State Route 41, and one nest was found along State Route 46. The closest active golden eagle nest was about 3.7 miles west of the Biological Study Area in an oak tree in the rolling hills adjacent to the Cholame valley floor.

Golden eagles were observed soaring over or adjacent to the Biological Study Area during opportunistic wildlife surveys during the 2022 season. Within the Biological Study Area, there are no large trees suitable for golden eagle nesting and no golden eagle nests or nesting behaviors were observed during surveys.

Burrowing Owl

The burrowing owl is a California species of special concern. The species is one of California's only owls that is active during the daytime. These small owls mostly use grasslands but can inhabit some highly altered environments such as agricultural areas where they nest along roadsides or agricultural water canals, surrounded by croplands. While the breeding range of the owls extends from Baja California in the south up to Canada's southern prairies in the north, the population along the central and southern coasts of California is in decline. Currently, burrowing owls in coastal regions from San Luis Obispo to San Diego counties are extremely rare and at risk of going locally extinct.

Although protocol-level surveys for burrowing owls were not conducted and burrowing owls were not observed within the Cholame Section, the habitat within the Cholame section is suitable for burrowing owl. Therefore, the species has the potential to occur within or adjacent to the project.

The most recent sightings of burrowing owl were reported in the Cholame Valley as part of the California Flats Solar project. Bird surveys were conducted in 2013 for the project, and several burrowing owls were detected. The nearest of these sightings was 1.7 miles to the northeast of the Cholame section. In 2001, burrowing owls were observed using burrows within the Wye section of the Corridor Improvement project, about 1.2 miles east of the Cholame section.

Mountain Plover

The mountain plover is a California species of special concern and has seen an 80 percent decline in population since 1966. Mountain plovers breed on open plains from Colorado to Texas, but overwinter from Central California through northern Mexico and east to southern Texas. Mountain plovers do not breed in California, but migrate to the Central and Imperial valleys during the winter to overwinter.

Mountain plovers were not observed in the Biological Study Area during opportunistic surveys. The California Natural Diversity Database and eBird document observations of mountain plovers in 1984, 1988, and 2015 within the Cholame Valley, about 4 miles west of the Biological Study Area.

California Horned Lark (New Resource)

The California horned lark is a California species of special concern. This bird inhabits dry, open grasslands with sparse vegetation, but also frequently uses areas cleared by humans such as plowed fields and mowed areas. The California horned lark has a limited range that runs along the coast of California between Humboldt and San Diego counties, extending inland to the San Joaquin Valley and Kings County.

California horned larks were observed or heard numerous times throughout the year during general wildlife surveys, within and adjacent to the Cholame section. The species was commonly observed in groups of 50 or more individuals.

The California Natural Diversity Database does not have any records of California horned larks. But, based on observations from eBird, the birds are common year-round in the Biological Study Area. The entire Biological Study Area provides potential nesting and foraging habitat for the California horned lark.

Prairie Falcon Nesting Habitat (New Resource)

Nesting prairie falcons are designated as a watch list species in California. The prairie falcon is a large falcon found in the arid west. It typically nests on open cliff faces or rock crevices.

A prairie falcon was observed soaring over the Biological Study Area during opportunistic surveys in 2022. No potential nesting sites were identified, though cliffs and rocky outcrops are found just north of the Biological Study Area and the Biological Study Area can be used for foraging.

Observations in eBird indicate the recent presence of prairie falcons west of the Biological Study Area, but they have not been documented nesting, likely because there is no nesting habitat in the Biological Study Area. Nesting prairie falcons have been documented several miles away in the Temblor Range and along the San Juan River, but likely use the Biological Study Area only for foraging.

Mountain Lion (New Resource)

The mountain lion, also known as cougar or puma, is a large cat native to the Americas. In April 2020, the California Fish and Game Commission advanced the Southern California and Central Coast mountain lion Evolutionarily Significant Units to candidacy under the California Endangered Species Act. The mountain lion is the second largest cat in the New World, and an adult male can weigh up to 200 pounds and grow to 54 inches long with a 3-foot-long tail. Its range spans from the Canadian Yukon to the southern Andes. Mountain lions are an adaptable species, occurring in most American habitat types. Mountain lions are reclusive animals that avoid humans and tend to be more active at night. They make their dens in rocky outcroppings, dense thickets and under uprooted trees.

Mountain lions are solitary animals, except when mating and during a period of juvenile dependence. Population densities can vary from as low as one individual per 32 square miles to as high as one per 5 to 20 square miles, depending on the density of prey and other resources in the area. Mountain lions are highly territorial, and the average home range of a female is 55 square miles; males have an average home range of 110 square miles.

Mountain lions are carnivores, and their main prey are hoofed mammals, but they also eat smaller animals like squirrels, racoons, skunks, coyotes, bobcats, rabbits, birds, and even snails and fish. They may also prey on domestic livestock, including poultry, calves, sheep, goats, and pigs. Males can live 10 to 12 years in the wild; females normally live longer.

Mountain lions in Southern California and along the Central Coast are threatened by habitat loss and habitat fragmentation from highways and urban development. Due to genetic isolation caused by habitat loss and fragmentation, low genetic diversity and a high risk of inbreeding depression are also threats to these Evolutionarily Significant Units (Center for Biological Diversity and the Mountain Lion Foundation 2019). Highways can be a major barrier for dispersal of mountain lions, and heavy traffic can cause frequent fatal accidents.

No surveys specific for mountain lions were conducted, and no mountain lions were observed during field reviews. Mountain lions are not tracked in the California Natural Diversity Database. Due to their elusive nature, large home ranges, and because they are primarily active at night, mountain lions may occur in the Southern Coast Range area and go undetected. From 2015 to 2017, mountain lion sightings have been reported to local law enforcement agencies on the Carrizo Plain to the south of the Biological Study Area as well as in eastern Paso Robles, to the west of the Biological Study Area.

American Badger (New Resource)

The American badger, listed as a California species of special concern, is a medium-sized mammal (14 to 19 pounds and 2.5 feet long) with a stocky, flat

body, brown or black fur with white stripes and distinctive head markings, short powerful legs, and huge foreclaws measuring up to 2 inches long. The species occurs in open shrub lands, forest, and herbaceous habitats. The American badger is a fossorial carnivore, meaning it burrows for hunting, cover, aestivation, and nesting. It needs friable soils to excavate its burrows. Badgers eat rodents such as ground squirrels and pocket gophers, some reptiles, earthworms, eggs, birds, and carrion. American badgers occur broadly in North America from northern Alberta south to central Mexico. In California, they can be found in most regions except for the humid coastal forests in the northwest part of the state. Despite their wide range, badger populations have declined heavily due to their susceptibility to predator control through trapping and poisons, along with habitat loss and farming operations.

No badger or signs of badger were observed during field surveys; however, the Biological Study Area provides suitable foraging habitat for the American badger and the species is generally active at night and burrowing (therefore, difficult to observe during a survey), so the presence of badgers cannot be ruled out. Wildlife cameras used west of the Biological Study Area detected badgers on three separate nights in October and November 2020, about 3 miles west of the Biological Study Area. Also, several occurrences in the vicinity of the Biological Study Area are listed in the California Natural Diversity Database, including records in Shandon, 9 miles to the south, northern Cholame Valley about 4.5 miles to the north, and White Canyon Creek about 4.4 miles to the west.

Environmental Consequences

Potential permanent and temporary (construction) impacts for animal species are described below. Animals that have similar habitats and would be similarly affected by the project are discussed together.

Western Spadefoot Toad

Western spadefoot toads have the potential to use the same ponded areas as California tiger salamanders for breeding (discussed in Section 2.4.5 Threatened and Endangered Species). The Antelope Grade North Alternative would not displace any potential aquatic habitat for the species, but impacts to potential upland habitat within their dispersal range are anticipated.

It is anticipated that the proposed Antelope Grade section would have approximately 25.66 acres of permanent impacts to western spadefoot toad upland habitat from the construction of the new alignment and 102.09 acres of temporary impacts from constructing the new alignment and removing the existing highway. Removal of the existing highway and restoration of that area would provide approximately 12.05 acres of upland grassland habitat suitable for western spadefoot toads; therefore, the net loss of habitat would be about 13.61 acres.

The widened roadway may exacerbate the physical barrier that the roadway presents to western spadefoot toads, so additional undercrossing structures have been incorporated into the project design to allow for safe crossing opportunities. This includes the proposed bridge structures and culverts that have been incorporated into the project at least every 0.3 mile as feasible to increase the highway's permeability and provide safe and effective movement corridors for wildlife in the area.

California Glossy Snake (New Resource) and San Joaquin Coachwhip

The entire project area may be considered habitat for the California glossy snake and San Joaquin coachwhip. It is anticipated that the proposed Antelope Grade section would have approximately 25.66 acres of permanent impacts to California glossy snake and San Joaquin coachwhip habitat from the construction of the new alignment and 102.17 acres of temporary impacts from constructing the new alignment and removing the existing highway. Removal of the existing highway and restoration of that area would provide approximately 12.12 acres of grassland habitat suitable for both species; therefore, the net loss of habitat would be about 13.54 acres.

The widened roadway may exacerbate the physical barrier that the roadway presents to the California glossy snake and San Joaquin coachwhip, so additional undercrossing structures have been incorporated into the project design to allow for safe crossing opportunities. This includes the proposed bridge structures and culverts that have been incorporated into the project at least every 0.3 mile as feasible to increase the highway's permeability and provide safe and effective movement corridors for wildlife in the area.

Coast Horned Lizard

Loamy soils were mapped within the Biological Study Area to determine where coast horned lizard habitat may occur. It is anticipated that the proposed Antelope Grade section would have approximately 18.47 acres of permanent impacts to coast horned lizard habitat from the construction of the new alignment and 74.45 acres of temporary impacts from constructing the new alignment and removing the existing highway. Removal of the existing highway and restoration of that area would provide approximately 7.25 acres of grassland habitat suitable for the coast horned lizard.

Grasshopper Sparrow (New Resource), California Horned Lark (New Resource), and Mountain Plover

The grasshopper sparrow, California horned lark, and mountain plover prefer open, sparsely vegetated grassland habitat, which the Biological Study Area is almost entirely composed of. It is anticipated that the proposed Antelope Grade section would have approximately 25.66 acres of permanent impacts to grasshopper sparrow, California horned lark, and mountain plover habitat from the construction of the new alignment and 102.17 acres of temporary impacts from constructing the new alignment and removing the existing highway.

Removal of the existing highway and restoration of that area would provide approximately 12.12 acres of grassland habitat suitable for these species; therefore, the net loss of foraging habitat would be about 13.54 acres.

Golden Eagle Nesting Habitat (New Resource) and Prairie Falcon Nesting Habitat (New Resource)

The project would not impact the golden eagle, prairie falcon, or their nesting habitats.

Burrowing Owl

The entire project area may be considered habitat for the burrowing owl because it consists mostly of open grassland habitat. It is anticipated that the proposed Antelope Grade section would have approximately 25.66 acres of permanent impacts to burrowing owl habitat from the construction of the new alignment and 102.17 acres of temporary impacts from constructing the new alignment and removing the existing highway. Removal of the existing highway and restoration of that area would provide approximately 12.12 acres of grassland habitat suitable for the burrowing owl; therefore, the net loss of habitat would be about 13.54 acres.

Mountain Lion (New Resource) and American Badger

Due to the open expanse of grassland within the project area, it is highly unlikely that mountain lions are denning within the Biological Study Area, but they may use the rocky outcroppings to the north of the Biological Study Area. Mountain lions may also use grasslands found in the Biological Study Area to hunt wildlife that may occur in the area and may also use it as a movement corridor through the Southern Coast Range. Similarly, American badgers may use the grasslands found in the Biological Study Area as foraging habitat.

It is anticipated that the proposed Antelope Grade section would have approximately 25.66 acres of permanent impacts to mountain lion and American badger habitat from the construction of the new alignment and 102.17 acres of temporary impacts from constructing the new alignment and removing the existing highway. Removal of the existing highway and restoration of that area would provide approximately 12.12 acres of grassland habitat suitable for mountain lions and American badgers; therefore, the net loss of habitat would be about 13.54 acres.

Badgers may prefer to cross the road on the surface rather than in a culvert below. This leads to greater susceptibility to vehicular mortality, and the barrier effect of the state route may increase with widening the highway. However, badgers have been documented using large box culverts (10 feet by 12 feet) designed for wildlife movement in previous segments of the State Route 46 Corridor project; such culverts are also proposed in the Antelope Grade section. Also, any bridge structures that are proposed in the Antelope Grade section would have a larger openings than the existing undersized

culverts that currently exist in the project area. These undercrossings will offset some of the barrier effects of the proposed highway.

The additional lanes and increased vehicle speeds would continue to act as a partial barrier for movement across the highway. Additional undercrossings including larger box culverts and the bridge at post mile 58.1 as well as directional fencing discussed in Section 2.4.5 Threatened and Endangered Species may be used by mountain lions and American badgers to increase the permeability and reduce the barrier effect of the roadway. Implementation of avoidance and minimization measures would reduce the potential for impacts to the mountain lion and American badger.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures are included for sensitive animal species below. Measures to protect these species were not included in the *2005 ND/FONSI*; instead, the document stated that compensatory land acquisition would mitigate for impacts to wildlife. The measures included below replace the language in the Vegetation and Wildlife section of the *2005 ND/FONSI* Mitigation and Monitoring Program in Appendix F.

Western Spadefoot Toad

The minimization and avoidance measures for the California tiger salamander (measures TES 16 through TES 34, see Section 2.4.5 Threatened and Endangered Species) may also avoid and minimize impacts to the western spadefoot toad. No additional measures will be incorporated for this species. Also, measures TES 16 and TES 49 require the purchase of mitigation credits from a conservation bank such as Palo Prieto for habitat impacts to the San Joaquin kit fox and California tiger salamander. This will benefit the western spadefoot toad, which is known to breed and use upland refugia on the Palo Prieto Conservation Bank.

California Glossy Snake (New Resource), San Joaquin Coachwhip, and Coast Horned Lizard

The minimization and avoidance measures for California red-legged frog and San Joaquin kit fox (measures TES 35 to TES 46 and TES 49 to TES 51, see Section 2.4.5 Threatened and Endangered Species) may also avoid and minimize impacts to the California glossy snake, San Joaquin coachwhip, and coast horned lizard, including worker environmental awareness training and preconstruction surveys. Also, measures TES 16 and TES 49 require the purchase of mitigation credits from a conservation bank such as Palo Prieto for habitat impacts to San Joaquin kit fox and California tiger salamander. This will benefit the California glossy snake, San Joaquin coachwhip, and coast horned lizard, which have been documented on the Palo Prieto Conservation Bank.

Grasshopper Sparrow (New Resource), California Horned Lark, and Other Nesting Birds

The minimization and avoidance measures for the California red-legged frog and San Joaquin kit fox (measures TES 35 to TES 46 and TES 49 to TES 51, see Section 2.4.5 Threatened and Endangered Species) may also avoid and minimize impacts to the grasshopper sparrow, California horned lark and other nesting birds, including preconstruction surveys prior to initial ground disturbance. Also, measures TES 16 and TES 49 require the purchase of mitigation credits from a conservation bank such as Palo Prieto for habitat impacts to San Joaquin kit fox and California tiger salamander. This will benefit the grasshopper sparrow, California horned lark, and other nesting birds, which have been documented on the Palo Prieto Conservation Bank. The following measures will also apply:

Avoidance Measure AMS 1 – During the nesting bird season, pre-construction surveys for ground-nesting bird species will be conducted prior to initial ground disturbance and repeated if a construction area is inactive for more than 14 days.

Avoidance Measure AMS 2 – If an active nest is discovered within the project limits or within 250 feet of the project limits, a buffer and monitoring will be implemented to provide protection to the nest and its occupants until it is determined that the fledglings can fly on their own and are no longer dependent on the nest.

Mountain Plover

No specific measures for the mountain plover are proposed. Impacts will be minimized with the implementation of avoidance and minimization measures proposed for other species. such as preconstruction surveys. The mountain plover does not nest or breed in California; therefore, no measures are needed to avoid or minimize their nests.

Burrowing Owl

In addition to the avoidance and minimization measures discussed for the San Joaquin kit fox in Section 2.4.5 Threatened and Endangered Species, the following measures will be implemented:

Avoidance Measure AMS 3 – A qualified biologist shall conduct pre-construction surveys for the burrowing owl within a 250-foot radius of proposed ground disturbance, within 30 days prior to project commencement. The biologist shall survey for burrows with molted feathers, cast pellets, prey remains, eggshell fragments, or excrement at or near the burrow entrance and listen for burrowing owl calls.

Avoidance Measure AMS 4 – If a burrowing owl is detected within the project limits or within 500 feet of the construction activities, a buffer zone for the

burrow or burrow complex shall be defined. Between February 1 and August 31, the owls are presumed to be nesting and a buffer and monitoring shall be implemented in consultation with the California Department of Fish and Wildlife to provide protection to the nest and its occupants. During the fall or winter from September 1 to January 31, the owls are assumed to be overwintering or migrating, so the buffer zone would be smaller than a nesting season buffer but would also be implemented in consultation with the California Department of Fish and Wildlife. If active, unavoidable burrows are discovered, Caltrans shall consult with the California Department of Fish and Wildlife for guidance.

Golden Eagle Nesting Habitat (New Resource)

Avoidance Measure AMS 5 – Surveys for raptor nests within 1 mile of construction activities shall be conducted by a qualified biologist prior to construction. If an active golden eagle nest is found within 1 mile of construction activities, an adequate buffer and monitoring would be implemented and developed in consultation with the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service.

Prairie Falcon Nesting Habitat (New Resource)

Avoidance Measure AMS 6 – Surveys for raptor nests within 1 mile of construction activities shall be conducted by a qualified biologist prior to construction. Available nesting habitat for prairie falcons is located outside of the project area in steep topography and within private property; therefore, Caltrans shall thoroughly survey for nests from the Caltrans right-of-way using spotting scopes as feasible. If an active prairie falcon nest is found within 500 feet of the construction activities, an adequate buffer zone for the nest shall be defined and monitoring of the nest shall be implemented.

Mountain Lion (New Resource)

No specific measures for the mountain lion are proposed. Impacts will be minimized with the implementation of the new bridge structures, additional undercrossings, and directional wildlife fencing.

American Badger

Avoidance and minimization measures for the San Joaquin kit fox and burrowing owl will also benefit American badger because those species have similar lifestyles and occupy similar habitat areas. See measures TES 49 through TES 51 and measures AMS 3 and AMS 4 above. No additional measures for protection of the American badger are proposed.

2.4.5 Threatened and Endangered Species

Regulatory Setting

The main federal law protecting threatened and endangered species is the Federal Endangered Species Act: 16 United States Code Section 1531, et

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

California has enacted a similar law at the state level, the California Endangered Species Act, California Fish and Game Code Section 2050, et seq. The California Endangered Species Act emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. The California Department of Fish and Wildlife is the agency responsible for implementing California Endangered Species Act. Section 2080 of the California Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The California Endangered Species Act allows for take incidental to otherwise lawful development projects; for these actions, an incidental take permit is issued by the California Department of Fish and Wildlife. For species listed under both the Federal Endangered Species Act and the California Endangered Species Act requiring a Biological Opinion under Section 7 of the Federal Endangered Species Act, the California Department of Fish and Wildlife may also authorize impacts to California Endangered Species Act species by issuing a Consistency Determination under Section 2080.1 of the California Fish and Game Code.

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the 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.

Additional changes in the regulatory setting since approval of the *2005 ND/FONSI* include the following:

- The California tiger salamander was listed in the California Endangered Species Act as a state threatened species in 2010.
- The tricolored blackbird was listed in the California Endangered Species Act as a state threatened species in 2018.
- The Crotch bumble bee was listed in the California Endangered Species Act as a state candidate species in 2022.
- The monarch butterfly was listed in the California Endangered Species Act as a state candidate species in 2020.
- The U.S. Fish and Wildlife Service finalized the proposed designation of critical habitat for the California red-legged frog in 2010.

Affected Environment

The Supplemental Natural Environment Study dated August 2023 was used to provide technical information and to analyze potential effects of the Antelope Grade North Alternative on threatened and endangered species known to occur or potentially occur within the limits of the Biological Study Area. The species discussed in this section were either not discussed in the *2005 ND/FONSI* (their regulatory status has since changed) or impacts have changed since the Antelope Grade North Alternative was proposed.

An official U.S. Fish and Wildlife species list for the project area was initially requested through the U.S. Fish and Wildlife Service on March 9, 2004, again on July 1, 2022, and updated most recently on July 31, 2023. An official National Marine Fisheries Service species list for the project area was initially requested via email on July 1, 2022 and updated most recently on July 31, 2023. Recent versions of both lists can be seen in Appendix D.

A Biological Opinion from the U.S. Fish and Wildlife Service was issued for impacts to the San Joaquin kit fox, California red-legged frog, and California tiger salamander on December 12, 2005 (1-8-03-F-59) for the conversion of State Route 46 from a two-lane highway to a four-lane expressway from post miles 32.2 to 56.3. Because the project crossed county lines and another Caltrans district was involved, a separate Biological Opinion (1-8-03-F-17) was issued for impacts to the San Joaquin kit fox and California red-legged frog for the conversion of State Route 46 from a two-lane highway to a four-lane expressway from post miles 55.1 to 60.9.

Due to the updated project description of the proposed Antelope Grade project and the time elapsed since the original Biological Opinions for the project were issued, it is anticipated that Section 7 Consultation with the U.S. Fish and Wildlife Service will be initiated and a new Biological Opinion and Incidental Take Statement will be issued prior to the start of construction.

The 2081 Incidental Take Permit (No. 2081-2007-020-04) from the California Department of Fish and Wildlife was finalized on January 27, 2009 for previous State Route 46 projects; an amendment was issued on June 22, 2021 for construction of the Cholame and Wye segments. A 2081 Incidental Take Permit allows the California Department of Fish and Wildlife to authorize take of a species listed as endangered, threatened, candidate, or a rare plant, if that take is incidental to otherwise lawful activities and if certain conditions are met. Under the California Endangered Species Act, take is defined as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The existing Incidental Take Permit and subsequent amendment covers the San Joaquin kit fox and California tiger salamander. Additional California Endangered Species Act coordination will be required for the permanent impacts to San Joaquin kit fox habitat associated with the Antelope Grade North Alternative.

Crotch Bumble Bee (New Resource)

The Crotch bumble bee was listed as a candidate species under the California Endangered Species Act by the California Department of Fish and Wildlife Service in September 2022. This species was not discussed previously in the *2005 ND/FONSI*.

Intensive agricultural development, mostly in the Central Valley and urban development in Southern California is suspected to be the cause of localized extinction of this species in its historic range, which includes most of California from the Oregon to Mexico, though the species is most commonly found in the southern two-thirds of the state. Crotch bumble bee habitat includes open grassland and scrubland. This bumble bee nests mostly underground in small mammal burrows. Crotch bumble bees feed on nectar and pollen from a wide range of flowers and many pollinator-dependent commercial crops. Specifically, they are associated with plants in the legume, mint, milkweed, forget-me-not and daisy families. This species has unique hair coloration that distinguishes it from other bumble bee species. The queens of this species can be as large as 25 millimeters long, and the worker bees can be as small as 12 millimeters long.

In California, queens emerge in late February and may stay active until late October. The males and worker bees occur between late March through September, with peak abundance in early July. Foraging distance is not well known in this particular species, but California native bees prefer to travel between 50 to 500 meters from nest sites.

The most recent record of the Crotch bumble bee near the project area was mapped in 1972 in the Cholame area, about 3.7 miles west of the Biological Study Area. The most recent occurrence of the Crotch bumble bee in all of the adjoining counties including San Luis Obispo, Fresno, Kern, Kings, and Monterey counties was in 2017 when it was mapped over 40 miles away from

the Biological Study Area in the Carrizo Plain National Monument in San Luis Obispo County.

Monarch Butterfly (New Resource)

The monarch butterfly is a candidate species for listing under the Federal Endangered Species Act and was not discussed previously in the *2005 ND/FONSI*.

Loss of nectar sources during monarch migration has been implicated as a potential key driver in recent population declines. Western populations of the species tend to cluster close to the Pacific Ocean in forested groves to use as overwintering sites along the Pacific Coast from Northern California to Baja California, but several inland groups have been reported in Inyo and Kern counties as well as Arizona. The tree species most commonly used for roosting are the non-native blue gum eucalyptus and the native Monterey pine and Monterey cypress. Monarchs begin arriving at the overwintering sites in September and the first half of October; by mid-November, they have formed stable aggregations that remain until January or February. In February and March, the surviving monarchs breed at the overwintering site before dispersing. Adult females lay eggs on milkweed species, which the caterpillars later rely on for energy and protection.

The nearest known monarch overwintering sites are approximately 40 miles to the west and 70 miles to the east of the Biological Study Area. Individual monarch butterflies were observed within the Biological Study Area on several field visits. The grassland habitat throughout the Biological Study Area supports sparse amounts of narrow-leaf milkweed (*Asclepias fascicularis)*. At the west end of the Biological Study Area, there is a small grove of four mature blue gum eucalyptus trees and some additional saplings.

California Tiger Salamander

The California tiger salamander (*Ambystoma californiense*) is a large, stocky salamander endemic to California that is both a federally and state listed species. It was listed as a threatened species by the State of California in 2010, and it was federally listed as endangered in Santa Barbara County and Sonoma County in 2000 and 2003, respectively. The Central California Distinct Population Segment was listed as federally threatened in 2004, and critical habitat for this segment was designated in 2005.

State Route 46 is within the Central California Distinct Population Segment, which is found along the foothills of the Central Valley and Inner Coast Ranges from San Luis Obispo, Kern, and Tulare counties in the south to Sacramento and Yolo counties in the north. The populations within this segment are often fragmented and are under the threat of development from urbanization and agricultural conversion. The Biological Study Area is about 3 miles north of designated critical habitat.

California tiger salamanders require pools or other aquatic habitat for breeding but spend most of their lives in upland habitats within grasslands and oak savannahs. The salamanders live mostly below ground in the burrows of gophers, ground squirrels, or other small mammals. During the wet winter months, adult salamanders emerge from their burrows and disperse to ponds or other aquatic habitat to breed, returning to their burrows shortly after. After metamorphosis, juveniles emerge from ponds and disperse to upland habitat in late spring through summer. Breeding adult tiger salamanders may disperse to different breeding ponds each year and can cross creeks and multiple plant communities, and do not follow riparian corridors. The current industry standard dispersal distance of individual California tiger salamanders is 1.24 miles as suggested by the California Department of Fish and Wildlife in its 2003 Guidance for Site Assessments.

No California tiger salamanders were observed during 2013 surveys of the nearby California Flats Solar project; similarly, none were found in 2021, 2022, and 2023 during burrow excavation for approximately 68 acres in Cholame Valley as required by the California Department of Fish and Wildlife Incidental Take Permit for construction of the nearby Cholame and Wye sections on State Route 46. The nearest recorded occurrence of the California tiger salamander to the project area included the discovery of one larvae found in 2015 just west of Davis Road, about 2.75 miles to the west of the Biological Study Area. The California Natural Diversity Database indicates surveys of sag ponds in more recent years along the San Andreas Fault, 4 miles south of State Route 46, have confirmed breeding activity.

Though California tiger salamander protocol-level surveys were not conducted for the Antelope Grade section, seven potential ponds were identified, and presence of the California tiger salamander was assumed in all of the identified ponds. A 1.24-mile buffer was used to identify the potential extent of dispersal from the seven ponds.

Currently, State Route 46 may act as a physical and behavioral barrier to California tiger salamanders that may attempt to cross the highway while dispersing between aquatic and upland habitats. Heavy traffic along the roadway may prohibit safe crossing attempts, even in the evening and during winter months when salamanders are most likely to be moving above ground. The highway may also represent a behavioral barrier, inhibiting salamander movement across the highway as a result of vehicle headlights, road noise, or texture of the roadway.

California Red-Legged Frog

The California red-legged frog (*Raya draytonii*) was federally listed as threatened in 1996 and is a California species of special concern. This frog has sustained a 70 percent reduction in its geographical range, especially in the Sierra Nevada foothills and Southern California. The Central Coast California red-legged frog populations are considered to have the greatest

number of locations where California red-legged frogs are proposed, including Santa Barbara, San Luis Obispo, and Monterey counties.

California red-legged frogs require a variety of habitat types, including ponds, marshes, springs, streams, lagoons, and reservoirs, as well as riparian areas for winter refuge and uplands for dispersal. They can use seasonal ponds if water persists long enough for metamorphs to reach maturity before drying out. California red-legged frogs are known to travel more than 2 miles through different habitat types, topography, and riparian corridors, and typically move over land at night.

No California red-legged frogs of any life stage were observed during opportunistic surveys of the Antelope Grade Section Biological Study Area from 2019-2022. Just south of the western end of the Biological Study Area and outside of the proposed disturbance area, there are two permanent ponds, one temporary pond, and a wetland in the vicinity of the water pumping facility adjacent to State Route 46 near Antelope Grade. There is also one stock pond on private property, outside the Biological Study Area toward the eastern end of the project limits. When access was granted to this property, non-protocol surveys of the pond were done during daylight hours by walking the pond's perimeter and searching with binoculars for any California red-legged frogs in the mud, standing water, and vegetation. No life stages of the California red-legged frog were observed in any of the ponds outside the Biological Study Area over multiple visits in 2021 and 2022.

California Red-Legged Frog Critical Habitat

Critical habitat in the project area was designated by the U.S. Fish and Wildlife Service in 2010 for the California red-legged frog. This occurred after finalization of the *2005 ND/FONSI*; therefore, impacts to California red-legged frog critical habitat were not previously discussed. This area, designated as critical habitat unit SLO-1, includes approximately 17,787 acres of private and federal land in the northeastern portion of San Luis Obispo County with a small portion extending into Kern County. This area has features that provide suitable dispersal and aquatic habitat for California red-legged frogs. Critical habitat unit SLO-1 overlaps with the western two-thirds of the Antelope Grade Section Biological Study Area from post miles 57.3 to 60.5. The Biological Study Area supports California red-legged frog non-breeding aquatic habitat and upland habitat.

Tricolored Blackbird

The tricolored blackbird was discussed as a species of special concern in the *2005 ND/FONSI*, but has since been listed as a state threatened species in 2018 due to its dramatic population decline. California Natural Diversity Database records indicate nesting of tricolored blackbirds at several ponds on the western end of the project area in 2008, where approximately 400 tricolored blackbirds were observed. In more recent surveys, tricolored

blackbirds were observed in the Biological Study Area on March 24, 2021 during field surveys where approximately 100 to 150 adult male and female tricolored blackbirds were noted in a stock pond on the eastern end of the project area. While no evidence of nest building was directly observed there, it was not surveyed intensely for evidence of nesting and is therefore assumed to be a potential nesting site. Additional observations of tricolored blackbirds were made on three other survey events in March and April 2022, though fewer individuals (varying from five to twelve individuals) were observed during those times.

Swainson's Hawk (New Resource)

The Swainson's hawk was listed as a California threatened species in 1983 due to a significant loss of habitat and decline in Swainson's hawk numbers across California. According to the California Department of Fish and Wildlife, historic populations of the Swainson's hawk in California were upwards of 17,000 pairs. This number dropped to an estimated 375 pairs in 1980, but the species population has seen an upward trend in recent years.

The Swainson's hawk is a medium-sized raptor that breeds in the western United States and Canada, and overwinters in isolated areas of California, Mexico, and Central and South Americas. This species typically arrives on its breeding grounds between March and April. These hawks typically nest in trees (between 41 and 82 feet high) in or near riparian areas, as well as on the edge of natural grasslands and agriculture fields. Swainson's hawk distribution and abundance has been linked to patterns of agriculture. Compatible agricultural crops for Swainson's hawk habitat include pasture, hay crops, and some irrigated crops. Less compatible areas include orchards and vineyards.

Swainson's hawks have a varied diet depending on their location. On their breeding grounds, they typically depend on small mammals, but during migration and in their overwintering sites, the species almost exclusively relies on insects. Swainson's hawks have one of the longest migrations of any American raptor, traveling south to Argentina for the winter and returning to North America to breed. This species displays a high degree of site fidelity, returning year after year to the same breeding grounds and often the same trees and nest site. Home ranges vary between 6,820 and 9,978 acres, likely dependent on the quality of foraging habitat and the distance between nesting and foraging habitat.

Protocol-level surveys were not conducted for the Swainson's hawk because the nesting habitat in the Biological Study Area is poor. The Biological Study Area does not contain any waterways able to sustain large or robust enough vegetation to provide adequate habitat for nesting. No Swainson's hawk or potential nesting locations were observed within the Biological Study Area. Fields within and surrounding the Biological Study Area are open ranchland with dense grassland and are suitable for Swainson's hawk foraging.

The migratory Swainson's hawk is periodically observed nesting near Shandon and foraging west of the Biological Study Area during fall and spring migrations. There are no recent documented sightings within the Biological Study Area, but the nearest and most recent occurrence is from eBird in April 2022 off of State Route 41, about 1.6 miles north of the Biological Study Area. There is one historic record of a Swainson's hawk nesting in the eastern end of Biological Study Area at the county line in 1963, though the California Natural Diversity Database record location says the exact nest location is unknown and is mapped generally to a location "six miles east of Cholame."

In the summer of 2010, local birders notified Caltrans of the presence of a potential Swainson's hawk nesting site near post mile 42. Swainson's hawk surveys were conducted in 2011 through 2016 between post mile 41 and post mile 46. At one point, there were two confirmed nesting pairs within the larger Estrella River drainage, one near State Route 46 and a second farther south in the Shedd Canyon area. The returning hawks near State Route 46 chose a different tree each year until 2013, and then one valley oak was used through the summer of 2016, when surveys ended. This tree is the nearest location of Swainson's hawk and is nearly 12 miles west of the Biological Study Area. Based on numerous observations in 2019-2022, Swainson's hawks are suspected to still be nesting near post mile 45.

San Joaquin Kit Fox

The San Joaquin kit fox (*Vulpes macrotis mutica*) is listed as a federal endangered species as well as a threatened California species and is endemic to California. Critical habitat has not been designated for the San Joaquin kit fox. Historically, this species' range stretched between Contra Costa County in the north down through the Central Valley, to eastern Santa Barbara County and southern Kern County. Its range has been reduced by half, mostly in the southern and western San Joaquin Valley and foothills. The largest surviving populations exist in western Kern County, on and around the Elk Hills and Buena Vista Valley, and in the Carrizo Plain National Monument in San Luis Obispo County. An urban population of San Joaquin kit foxes also inhabits the City of Bakersfield. However, this population has had a severe decline in recent years due to disease, specifically sarcoptic mange, which can be fatal to the foxes if left untreated.

The San Joaquin kit fox is a small, mostly nocturnal (active at night) species that uses burrows year-round for pupping, shelter, and protection from larger predators. It prefers habitat with soil types conducive for burrowing and burrow modifications. The kit fox subspecies typically inhabits areas of low vegetation, including grasslands and chenopod scrub communities. Its diet consists mostly of small mammals such as kangaroo rats, but the fox is also opportunistic, consuming large quantities of insects when locally abundant.

No protocol-level surveys specific for the San Joaquin kit fox were conducted. Opportunistic surveys have been ongoing in the State Route 46 corridor since

2000, and the most recent field surveys were done simultaneously during 2021-2022 field surveys for the proposed Antelope Grade North Alternative, 2020 pre-construction surveys for the Wye section, 2019 botanical surveys in the Antelope Grade and Wye sections, and 2017 blunt-nosed leopard lizard surveys in the Cholame section. No San Joaquin kit fox or signs of their presence (scat, prey items, footprints, etc.) were observed.

The most recent occurrences of the San Joaquin kit fox were in August 2017, about 3 miles northwest of the Biological Study Area along the California Flats Solar project entrance road, just off State Route 41. At least three individual foxes were observed visually and through camera traps during surveys related to the California Flats Solar project. There are several additional observations of San Joaquin kit foxes along roads near the solar project in February and March 2017, about 2.3 miles from the Biological Study Area. In 2016, there were several sightings of an adult and two juvenile kit foxes over several days, about 10.6 miles west of the Biological Study Area.

The Cholame Valley population east of the Cholame section is small but present, yet there also appears to be a surviving or transitory population of San Joaquin kit foxes southwest of the Cholame section. In 2014, scent stations were used by a student at California Polytechnic State University to gather scat samples from mammals visiting the State Route 46 area. San Joaquin kit foxes were detected via DNA extraction at four stations between River Grove Drive and McMillan Canyon Road. The closest detection to the Biological Study Area was about 8.2 miles to the west. Also, there are several records from the late 1980s and early 1990s along State Route 46 at the western edge of Antelope Valley, about 7.5 miles east of the Biological Study Area.

Environmental Consequences

Table 2-15 summarizes species listed by the Federal and/or California Endangered Species Acts. For federally listed species, a Federal Endangered Species Act Section 7 effects determination has been made as a result of the proposed project. For California Endangered Species Act listed species, a take determination has been made as well.

Due to a lack of suitable habitat in the project area and no observations during appropriately timed floristic surveys, the Federal Endangered Species Act Section 7 effects determination is that the proposed project will have no effect on the following federally listed plant taxa or their critical habitat: California jewel-flower, kern mallow, and spreading navarretia.

Due to a lack of suitable habitat in the project area and no observations during opportunistic surveys, the Federal Endangered Species Act Section 7 effects determination is that the proposed project will have no effect on the following federally listed invertebrate and vertebrate taxa or their critical habitat: green sea turtle, vernal pool fairy shrimp, Delta smelt, south central California steelhead district population segment, blunt-nosed leopard lizard,

giant garter snake, California clapper rail, southwestern willow flycatcher, California condor, least Bell's vireo, and giant kangaroo rat.

Due to a lack of suitable habitat in the project area and no observations during wildlife presence and sign surveys and appropriately timed floristic surveys or opportunistic surveys, the California Endangered Species Act impact assessment is that the proposed project will not result in state take of the following state-listed plant, invertebrate, and vertebrate taxa: California jewelflower, Delta smelt, blunt-nosed leopard lizard, Swainson's hawk, southwestern willow flycatcher, California condor, bank swallow, least Bell's vireo, San Joaquin antelope squirrel, and giant kangaroo rat.

Table 2-15 Federal and/or California Endangered Species Act Preliminary Effect Findings

Common Name	Scientific Name	Status	Habitat or Species Present	Federal Effect Finding	State Take Finding	Effect Finding for Critical Habitat
California jewelflower	*Caulanthus californicus*	Federally Endangered, State Endangered	Habitat Present, Species Not Observed	No Effect	No Take	Not Applicable
Kern mallow	*Eremalche parryi* ssp. *kernensis*	Federally Endangered	Habitat Present, Species Not Observed	No Effect	Not Applicable	Not Applicable
Spreading navarretia	*Navarretia fossalis*	Federally Threatened	Absent	No Effect	Not Applicable	Not Applicable
Crotch bumble bee	*Bombus crotchii*	State Candidate	Habitat Present, Species Not Observed	Not Applicable	No Take	Not Applicable
Vernal pool fairy shrimp	*Branchinecta lynchi*	Federally Threatened	Absent	No Effect	Not Applicable	Not Applicable
Monarch butterfly	*Danaus plexippus*	Federally listed Candidate Species	Habitat Present, Species Observed	No Effect	Not Applicable	Not Applicable
Delta smelt	*Hypomesus transpacificus*	Federally Threatened, State Endangered	Absent	No Effect	No Take	Not Applicable
Steelhead - South-Central California Coast Distinct Population Segment	*Oncorhynchus mykiss irideus*	Federally Threatened	Absent	No Effect	Not Applicable	Not Applicable
California tiger salamander - Central California Distinct Population Segment	*Ambystoma californiense*	Federally Threatened, State Threatened	Habitat Present, Species Not Observed	May Affect, Likely To Adversely Affect	Take	Not Applicable
California red-legged frog	*Rana draytonii*	Federally Threatened	Habitat Present	May Affect, Likely To Adversely Affect	Not Applicable	May affect, likely to adversely affect
Green sea turtle	*Chelonia mydas*	Federally Threatened	Absent	No Effect	Not Applicable	Not Applicable

Common Name	Scientific Name	Status	Habitat or Species Present	Federal Effect Finding	State Take Finding	Effect Finding for Critical Habitat
Blunt-nosed leopard lizard	*Gambelia sila*	Federally Endangered, Fully Protected, State Endangered	Absent	No Effect	No Take	Not Applicable
Giant garter snake	*Thamnophis gigas*	Federally Threatened	Absent	No Effect	Not Applicable	Not Applicable
Tricolored blackbird (foraging/nesting)	*Agelaius tricolor*	State Threatened	Habitat Present, Species Observed	Not Applicable	No Take	Not Applicable
Swainson's hawk (nesting)	*Buteo swainsoni*	State Threatened	Absent	Not Applicable	No Take	Not Applicable
Southwestern willow flycatcher	*Empidonax traillii extimus*	Federally Endangered, State Endangered	Absent	No Effect	No Take	Not Applicable
California condor (nesting)	*Gymnogyps californianus*	Federally Endangered, State Endangered	Absent	No Effect	No Take	Not Applicable
California clapper rail	*Rallus longirostris obsoletus*	Federally Endangered, State Endangered, Fully Protected Species	Absent	No Effect	No Take	Not Applicable
Bank swallow	*Riparia riparia*	State Threatened	Absent	Not Applicable	No Take	Not Applicable
Least Bell's vireo	*Vireo bellii pusillus*	Federally Endangered, State Endangered	Absent	No Effect	No Take	Not Applicable
San Joaquin antelope squirrel	*Ammospermophilus nelsoni*	State Threatened	Habitat Present, Species Not Observed	Not Applicable	No Take	Not Applicable
Giant kangaroo rat	*Dipodomys ingens*	Federally Endangered, State Endangered	Habitat Present, Species Not Observed	No Effect	No Take	Not Applicable
San Joaquin kit fox	*Vulpes macrotis mutica*	Federally Endangered, State Threatened	Habitat Present, Species Not Observed	May Affect, Likely To Adversely Affect	Take	Not Applicable

Crotch Bumble Bee (New Resource)

No Crotch bumble bees have been documented in the region in at least 50 years. and none were observed during field surveys. Focused surveys were not conducted, but there is potential habitat for this species in the Biological Study Area.

The effects to potential Crotch bumble bee habitat would be the same as the project's effects to the other ground-dwelling grassland species that have the potential to occur within the project limits. Therefore, approximately 25.66 acres of potential habitat would be permanently impacted as a result of construction of the new roadbed and 102.17 acres of potential habitat would be temporarily impacted as a result of grading and removal of the existing roadbed. Upon completion of the new alignment and removal and restoration of the existing roadbed, approximately 12.12 acres would be restored back to grassland that could provide suitable habitat for the Crotch bumble bee.

If Crotch bumble bees are found in the Biological Study Area during focused surveys conducted in 2024, Caltrans will coordinate with the California Department of Fish and Wildlife and, if necessary, a 2081 Incidental Take Permit will be acquired. Caltrans would implement measures in the following section to ensure impacts to the species are avoided.

Monarch Butterfly (New Resource)

Though several individual monarch butterflies were observed during field visits, no monarch habitat or overwintering sites would be impacted by the project. The identified blue gum eucalyptus plants are outside of the disturbance footprint and would be avoided. The Biological Study Area is composed mostly of grassland habitat, which may support milkweed used by the species. Therefore, approximately 25.66 acres of potential habitat will be permanently impacted as a result of construction of the new roadbed and 102.17 acres of potential habitat will be temporarily impacted as a result of grading and removal of the existing roadbed. Approximately 12.12 acres of grassland habitat potentially suitable for the monarch butterfly will be restored by removal of the existing roadbed. Upon completion of construction, native species, including milkweed, would be incorporated into seed mixes to revegetate and restore areas of temporary impact to enhance habitat for the monarch butterfly and other pollinator species. Additional avoidance and minimization measures are listed in the following section to further prevent inadvertent impacts to the monarch butterfly.

California Tiger Salamander

Seven ponds that could potentially support California tiger salamander breeding were identified within 1.24 mile of the Biological Study Area. Three ponds at the western end of the project area were surveyed for another private project in 2013, and all had negative findings; there is no survey data

for the remaining four ponds. Some of these ponds may not hold water longer than the 10 weeks required for California tiger salamander breeding; because they are on private property, this was not able to be verified and species presence was assumed. A 1.24-mile buffer was used to identify the potential extent of dispersal from these seven ponds.

It is anticipated that the Antelope Grade section will have approximately 25.66 acres of permanent impacts to California tiger salamander upland habitat from the construction of the new alignment and 102.17 acres of temporary impacts from constructing the new alignment and removing the existing highway. Removal of the existing highway and restoration of that area will provide approximately 12.12 acres of upland grassland habitat.

The widened roadway may exacerbate the physical and behavioral barrier that the roadway presents to California tiger salamanders. Therefore, additional undercrossing structures have been incorporated into the project design to allow for safe crossing opportunities. These structures include culverts and the proposed bridge structures and have been incorporated into the project at least every 0.3 mile to increase the highway's permeability and provide safe and effective movement corridors for wildlife in the area.

The Federal Endangered Species Act Section 7 effects determination is that the project may affect and is likely to adversely affect the California tiger salamander.

Construction of the project may result in take of the California tiger salamander and San Joaquin kit fox under the California Endangered Species Act, and a 2081 Incidental Take Permit will be submitted to the California Department of Fish and Wildlife accordingly.

Caltrans intends to purchase mitigation credits from the Palo Prieto Conservation Bank for impacts to these species. The credits purchased to protect the San Joaquin kit fox and California tiger salamander will also benefit the protruding buckwheat, California red-legged frog, western spadefoot toad, California glossy snake, San Joaquin coachwhip, coast horned lizard, Crotch bumble bee, monarch butterfly, tricolored blackbird, grasshopper sparrow, burrowing owl, California horned lark, prairie falcon, and American badger.

California Red-Legged Frog

Though no California red-legged frogs were observed during field surveys, historic records indicate California red-legged frogs were found in adjacent aquatic habitat, and the Biological Study Area contains potential upland habitat and non-breeding aquatic habitat. Impacts to California red-legged frog critical habitat are discussed further below. Outside of critical habitat, permanent impacts are estimated to be 7.6 acres and temporary impacts are estimated to be 19.11 acres. The Federal Endangered Species Act Section 7

effects determination is that the project may affect and is likely to adversely affect the California red-legged frog.

The project has incorporated additional undercrossings of various sizes and types with directional fencing, where feasible. With the exception of the bridge structures, which are the largest of the undercrossing structures, they range in size from 36-inch-diameter culverts to 11-feet-wide by 11-feet-high reinforced concrete box culverts at the larger end. Directional fencing is designed to be a deterrent for wildlife attempting to cross the highway and to encourage individuals to enter into the culverts for safe passage underneath the highway. These culverts have the potential to provide safe passage for the California red-legged frog because this species is known to cross through different habitat types, especially the larger, more open culverts such as the three box culverts proposed in the project area, and the bridge structures that will provide a large expanse of open habitat for movement.

California Red-Legged Frog Critical Habitat (New Resource)

Impacts to designated critical habitat unit SLO-1 were not analyzed in the previous *2005 ND/FONSI* since its designation occurred after that document was finalized. Based on the disturbance footprint of the project, estimated permanent impacts to critical habitat unit SLO-1 are 18.06 acres and temporary impacts are 77.81 acres. Impacts within California red-legged frog critical habitat will occur solely in upland habitat, with no impacts anticipated to aquatic habitat within critical habitat. There will not be any disturbance or loss of aquatic habitat within California red-legged frog critical habitat. Areas of temporary upland impacts will be restored with native plants and seed. Throughout the project area, portions of the existing highway will be removed, recontoured, and restored to natural habitat, totaling 12.12 acres and will partially offset permanent impacts to California red-legged frog critical habitat and upland habitat. Caltrans expects the physical or biological features essential to the conservation of the species within California red-legged frog critical habitat to continue to provide California red-legged frog essential life history functions. California red-legged frog critical habitat unit SLO-1 is composed of approximately 17,787 acres in northeastern San Luis Obispo County and northwestern Kern County. The permanent and temporary impacts to California red-legged frog critical habitat associated with the Antelope Grade section are estimated to equate to less than 0.5 percent of this critical habitat unit, with no impacts attributed to aquatic habitat.

The Federal Endangered Species Act Section 7 effects determination is that the project may affect and is likely to adversely affect California red-legged frog critical habitat.

Tricolored Blackbird

While the proposed roadway alignment will not permanently impact the stock pond itself, the edge of the stock pond is as close as 480 feet from the

proposed westbound road shoulder. To minimize impacts to the tricolored blackbird, an earthen berm has been added to the project design to screen the stock pond visually and acoustically from the roadway. The details of the earthen berm will be refined during the subsequent design phase.

This project has the potential to permanently and temporarily impact a net total of 127.83 acres of potential foraging area, but it is surrounded by thousands of acres of suitable foraging habitat. Unlike terrestrial mammals, birds have the ability to fly and forage on different sides of the highway. Upon completion of the new alignment and removal and restoration of the old roadbed, approximately 12.12 acres will be restored to grasslands suitable for tricolored blackbird foraging habitat.

No historic or potential nesting habitat for the tricolored blackbird will be impacted by the project. The California Endangered Species Act determination is that there will be no take of the tricolored blackbird.

Swainson's Hawk (New Resource)

No nesting habitat is anticipated to be impacted as a result of construction of the project; no Swainson's hawks have been detected nesting or foraging within the Biological Study Area, though the project site contains suitable foraging habitat for the Swainson's hawk. If any Swainson's hawks were to occur within the Biological Study Area, such occurrences would be infrequent.

The project has the potential to permanently impact a net total of 127.83 acres of potential foraging area, but it is surrounded by thousands of acres of suitable foraging habitat. Unlike terrestrial mammals, birds have the ability to fly and forage on different sides of the highway. In addition, upon completion of the new alignment and removal and restoration of the old roadbed, approximately 12.12 acres will be restored to grasslands suitable for potential Swainson's hawk foraging.

San Joaquin Kit Fox

The entire project area was considered San Joaquin kit fox habitat when analyzing project-related impacts because this species is often associated with grasslands, similar to those within the Biological Study Area. It is anticipated that the proposed Antelope Grade section will have approximately 25.66 acres of permanent impacts to San Joaquin kit fox habitat from the construction of the new alignment and 102.17 acres of temporary impacts from constructing the new alignment and removing the existing highway. Removal of the existing highway and restoration of that area will provide approximately 12.12 acres of upland grassland habitat suitable for San Joaquin kit fox; therefore, the net loss of habitat would be about 13.54 acres.

The greatest effect on the San Joaquin kit fox as a result of widening State Route 46 would be intensifying the barrier effects of the highway to movement of the species. Vehicular mortality can be one of the leading causes of death

for some San Joaquin kit fox populations, and increasing the width and traffic volume of State Route 46 may decrease the ability for kit foxes to cross the highway and increase the potential for vehicle strikes. Kit foxes prefer traveling through open areas with a wide, clear view, and room to elude predators, so they prefer to cross the highway pavement rather than using culverts or other confined spaces available as undercrossings.

However, similar to the requirements of the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife on the previous Wye and Cholame sections, additional undercrossings have been incorporated into the project design every 0.3 mile whenever feasible, and the installation of directional fencing would encourage the use of these undercrossings by kit foxes and other wildlife species, which may reduce the barrier effect of the highway. In locations where road construction required a cut, rather than a fill, undercrossings were not feasible. Whenever possible, these structures were enlarged to the greatest extent possible to provide the greatest openness ratio to maximize potential use. In total, there are 15 undercrossing opportunities proposed in the Antelope Grade section (where there are currently only 7) that are greater than or equal to 36 inches in diameter. These structures include a set of bridges, culverts, and dry wildlife crossings and have been incorporated into the project design to increase the highway's permeability and provide safe and effective movement corridors for wildlife in the area.

The Federal Endangered Species Act Section 7 effects determination is that the project may affect and is likely to adversely affect the San Joaquin kit fox.

Construction of the project may result in take of the California tiger salamander and San Joaquin kit fox under the California Endangered Species Act, and a 2081 Incidental Take Permit will be submitted to the California Department of Fish and Wildlife accordingly.

Caltrans intends to purchase mitigation credits from the Palo Prieto Conservation Bank for impacts to these species. The credits purchased to protect the San Joaquin kit fox and California tiger salamander will also benefit the protruding buckwheat, California red-legged frog, western spadefoot toad, California glossy snake, San Joaquin coachwhip, coast horned lizard, Crotch bumble bee, monarch butterfly, tricolored blackbird, grasshopper sparrow, burrowing owl, California horned lark, prairie falcon, and American badger.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance, minimization, and mitigation measures are included for threatened and endangered species below. Measures to protect these species were not specifically included in the *2005 ND/FONSI*; instead, the document stated that mitigation measures would be finalized through the permit process. The measures included below replace the language in the

Threatened and Endangered Species section of the *2005 ND/FONSI* Mitigation and Monitoring Program in Appendix F.

Crotch Bumble Bee (New Resource)

Minimization Measure TES 1 – During the project design phase in 2024, focused bumble bee surveys shall be conducted to determine if the Crotch bumble bee occurs in the project area. If the Crotch bumble bee is identified in the project area, Caltrans shall coordinate with the California Department of Fish and Wildlife and, if necessary, a 2081 Incidental Take Permit will be acquired.

Minimization Measure TES 2 – Surveys shall occur prior to ground disturbance for nesting bumble bees. No work shall occur within 50 feet of an active Crotch bumble bee nest unless approved by the California Department of Fish and Wildlife.

Avoidance Measure TES 3 – A Worker Environmental Awareness Training will be provided for all construction personnel prior to the start of any ground-disturbance or vegetation removal to discuss Crotch bumble bee identification, ecology, habitat, and avoidance and minimization measures.

Minimization Measure TES 4 – Prior to any ground-disturbing activities, environmentally sensitive area fencing shall be installed, as appropriate, around Crotch bumble bee feeding and nesting habitat to be avoided. Environmentally sensitive areas shall be noted on design plans and delineated in the field prior to the start of construction activities.

Avoidance Measure TES 5 – All areas greater than 15 feet beyond the proposed cut/fill limits shall be off-limits to construction equipment.

Minimization Measure TES 6 – California native species (local stock preferred) shall be used in revegetation and habitat enhancement efforts associated with the project. Crotch bumble bee nectar plant species shall be incorporated into the seed mixes to be used for re-vegetation and restoration of temporary impact areas.

Avoidance Measure TES 7 – Equipment and materials storage shall be restricted to areas within the proposed median (or between the existing highway and the proposed alignment) to the maximum extent practicable.

Minimization Measure TES 8 – Use of rodenticides and herbicides in the project area shall be limited in areas that contain suitable Crotch bumble bee habitat.

Minimization Measure TES 9 – Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. shall be revegetated and

recontoured if necessary to promote restoration of the area to pre-project conditions. Appropriate methods and plant species will be used to revegetate grassland habitats.

Monarch Butterfly (New Resource)

Avoidance Measure TES 10 – All areas greater than 15 feet beyond the proposed cut/fill limits shall be off limits to construction equipment.

Minimization Measure TES 11 – California native species (local stock preferred) shall be used in revegetation and habitat enhancement efforts associated with the project. Native milkweed species and monarch nectar plant species shall be incorporated into the seed mixes to be used for re-vegetation and restoration of temporary impact areas.

Avoidance Measure TES 12 – Equipment and materials storage shall be restricted to areas within the proposed median (or between the existing highway and the proposed alignment) to the maximum extent practicable.

Minimization Measure TES 13 – Use of rodenticides and herbicides in the project area shall be limited in areas that contain suitable monarch butterfly habitat.

Minimization Measure TES 14 – Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. shall be recontoured if necessary and revegetated to promote restoration of the area to pre-project conditions. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis.

Minimization Measure TES 15 – Prior to project-related vegetation disturbance activities, the contractor shall conduct appropriately timed mowing to remove any milkweed anticipated to be impacted in order to reduce monarch butterfly egg laying within project area.

California Tiger Salamander

Mitigation Measure TES 16 – Final compensatory mitigation shall be determined in coordination with the California Department of Fish and Wildlife during the California Endangered Species Act 2081 Incidental Take Permit permitting process. Caltrans anticipates that California tiger salamander mitigation credits will be purchased from the Palo Prieto Conservation Bank.

Below are avoidance and minimization measures outlined or referenced in the 2005 Biological Opinion from the U.S. Fish and Wildlife Service that are anticipated to be included in upcoming Section 7 consultation for the project.

Minimization Measure TES 17 – Pre-construction meetings with the construction contractor and crew shall be conducted to brief them on the

potential presence of the California tiger salamander in the project area and to educate onsite workers in the identification and habitat requirements of the California tiger salamander, as well as the ramifications of take of listed species. The minimization measures shall also be discussed.

Minimization Measure TES 18 – Pesticide application shall be avoided within 500 feet of all wetlands/water courses.

Minimization Measure TES 19 – California native species (local stock preferred) shall be used in re-vegetation and habitat enhancement efforts associated with the project.

Minimization Measure TES 20 – All areas greater than 15 feet beyond the proposed cut/fill limits shall be off-limits to construction equipment within areas of the project with the potential to impact the California tiger salamander.

Minimization Measure TES 21 – Caltrans shall immediately report any sighting of live California tiger salamanders within the action area to the Service.

Minimization Measure TES 22 – Any live California tiger salamander found within the construction footprint of the proposed project must be relocated out of harm's way.

Minimization Measure TES 23 – If a California tiger salamander is found injured or killed, Caltrans must contact the U.S. Fish and Wildlife Service office immediately (or the following day if found at night) so the agency can review the project activities to determine if additional protective measures are needed. Project activities may continue during this review period, provided that all protective measures proposed by Caltrans and the terms and conditions of the Biological Opinion have been and continue to be implemented.

Minimization Measure TES 24 – Caltrans shall enforce a maximum speed limit of 20 miles per hour on unpaved roads within the project area.

Minimization Measure TES 25 – Caltrans shall ensure that project-related vehicles do not leak anti-freeze or other hazardous materials.

Minimization Measure TES 26 – The biologist shall be given the authority to stop any work that may result in take of the California tiger salamander. If the biologist(s) exercises this authority, the U.S. Fish and Wildlife Service shall be notified by telephone and electronic mail within one (1) working day.

Minimization Measure TES 27 – Caltrans shall submit the name(s) and credentials of the biologist(s) who would conduct activities for the California tiger salamander, as specified in the Biological Opinion. Project activities shall

not begin until Caltrans has received written approval from the U.S. Fish and Wildlife Service of the biologist(s) they intend to use.

Minimization Measure TES 28 – Before initiating project activities, the U.S. Fish and Wildlife Service-approved biologist shall identify appropriate areas to relocate California tiger salamanders found in the construction area. These areas shall be near the potential capture site or another approved by the U.S. Fish and Wildlife Service, support suitable vegetation, and be free of exotic predators (i.e., bullfrogs).

Minimization Measure TES 29 – If captured, California tiger salamanders shall be placed in moist cloth bags or plastic buckets and kept shaded and moist until they are released at the new site. The relocation process must be implemented as quickly as possible.

Minimization Measure TES 30 – To avoid transferring disease or pathogens between aquatic habitats during the course of surveys and handling of California tiger salamanders, the U.S. Fish and Wildlife Service-approved biologist shall follow the Declining Amphibian Population Task Force's Code of Practice.

Below are avoidance and minimization measures anticipated to be included in the required California Endangered Species Act 2081 Incidental Take Permit to be issued by California Department of Fish and Wildlife that pertain to the California tiger salamander.

Minimization Measure TES 31 – A representative sample of small mammal burrows within 0.35 mile of a known or potential California tiger salamander breeding pond that is determined by the Designated Biologist to have the greatest potential to serve as refugia for California tiger salamander shall be excavated prior to initial ground clearing. Determination of these burrows would include known parameters of preferred refugia, such as proximity to ponds and burrow type. Excavation shall be conducted by the California Department of Fish and Wildlife-approved Designated Biologist(s) or Designated Monitor(s) working in the presence of the Designated Biologist(s). Excavations shall occur by digging with hand tools, but if the soil is too difficult to excavate by hand, then a pneumatic spade and/or mini-excavator may be used under direct supervision by the Designated Biologist(s). If no California tiger salamanders are found during excavation of high-potential burrows (of which, no less than 25 percent will be excavated), Caltrans will infer the area is not serving as upland habitat and proceed with work as planned, which will not require further excavation of burrows prior to initial ground clearing. Timing of excavation shall occur outside of the California tiger salamander breeding season (the excavations shall be done on or after June 1 and before December 1).

Minimization Measure TES 32 – If Permitee initiates or extends Covered Activities into the California tiger salamander breeding season (December through May) within 0.35 mile of a potential or known California tiger salamander breeding pond, the Permittee shall install exclusion fencing around each active work area to prevent breeding adults from moving into the active work areas. Permittee shall have the fencing material and design reviewed and approved in writing by the California Department of Fish and Wildlife before installation. The exclusion fence shall be installed after all small mammal burrows inside the work areas are excavated under the direct supervision of the Designated Biologist(s) to prevent entrapment of California tiger salamanders within the active work areas. When small mammal burrows cannot be avoided by a 50-foot no-disturbance buffer from the fence line, they shall be excavated prior to commencing fence installation. If exclusion fence is not erected at a work area that is located in whole or in part within 0.35 mile of known or potential breeding habitat outside the California tiger salamander breeding season (June through November), all Covered Activities shall cease when a 70 percent or greater chance of rainfall is predicted within 72 hours.

Minimization Measure TES 33 – The Designated Biologist(s) shall accompany the fencing crew to ensure that California tiger salamanders are not killed or injured during installation. Permittee shall construct the exclusion fence so its integrity is maintained under all weather conditions for the duration of the Covered Activities in each work area. Permittee shall inspect the exclusion fence at least once weekly during the non-breeding season and as needed, but at least daily during the breeding season (December through May) and maintain/repair the fence as necessary. The Designated Biologist(s) shall relocate any California tiger salamander found up against the exclusion fencing to prevent desiccation or predation in accordance with the California Department of Fish and Wildlife-approved California tiger salamander Relocation Plan. Permittee shall remove the California tiger salamander exclusion fence immediately upon completion of Covered Activities in each work area.

Minimization Measure TES 34 – The Designated Biologist(s) and Permittee shall monitor the National Weather Service 72-hour forecast for the project area. If a 70 percent or greater chance of rainfall is predicted within 72 hours, Permittee shall cease all Covered Activities within 0.35 mile of a known or potential California tiger salamander breeding pool—unless California tiger salamander exclusion fencing has been installed—until a 20 percent or less chance of rain is forecast. If work must continue within 0.35 mile of a known or potential California tiger salamander breeding pool when 70 percent or greater chance of rain is forecast in any 24-hour period, then a Designated Biologist or Designated Monitor must survey the project site before construction begins each day that 70 percent or greater chance of rain is forecast. If a Designated Monitor is used to conduct surveys, a Designated Biologist must still be available to capture and relocate any California tiger salamanders that are discovered during the surveys. The Permittee may

continue to work within 0.35 mile of a known or potential California tiger salamander breeding pond 24 hours after the rain ceases and there is a 20 percent or less chance of precipitation in the 72-hour forecast. Work areas that have been cleared of California tiger salamanders and enclosed with California tiger salamander exclusion fencing may continue Covered Activities during rainfall events.

California Red-Legged Frog

Additional measures for the California red-legged frog will be determined in coordination with the U.S. Fish and Wildlife Service during the Section 7 consultation process. The following minimization measures were outlined in the 2005 Biological Opinion specifically for the California red-legged frog:

Minimization Measure TES 35 – All earthwork within 270 feet of California red-legged frog aquatic habitat shall be completed between May 1 and October 31.

Minimization Measure TES 36 – A qualified biologist shall conduct pre-construction surveys for California red-legged frogs within the project area within two days of initiation of project construction.

Minimization Measure TES 37 – Any California red-legged frogs encountered shall be reported to the U.S. Fish and Wildlife Service immediately or as soon as practicable (i.e., the following business day if encountered at night). California red-legged frogs found in harm's way shall be captured and relocated to appropriate habitat as determined after discussions with Service staff.

Minimization Measure TES 38 – All new sightings of California red-legged frogs within project area shall be reported to the U.S. Fish and Wildlife Service and the California Natural Diversity Database.

Minimization Measure TES 39 – Pre-construction meetings with the construction contractor and crew shall be conducted to brief them on the potential presence of California red-legged frogs in the project area and educate onsite workers in the identification and habitat requirements of the California red-legged frog, as well as the ramifications of take of listed species. The minimization measures outlined will also be discussed.

Minimization Measure TES 40 – To the maximum extent practicable, contractors shall avoid all project-related activities including road construction within 300 feet of all wetlands/water courses that provide suitable breeding and foraging habitat for the California red-legged frog.

Minimization Measure TES 41 – Pesticide application shall be avoided within 500 feet of all wetlands/water courses.

Minimization Measure TES 42 – Bank slope protection placed on creek channel banks will be designed for erosion control by means of riparian function enhancement. Designs using native topsoil and native riparian local stock are preferred (biotechnology, logs, willow wattles, potted willows, "soft-tech" or low-tech dirt terracing, etc.).

Minimization Measure TES 43 – Prior to the commencement of construction activities, Caltrans shall coordinate with the California Department of Fish and Wildlife to prepare a riparian vegetation replacement program for the project. Riparian vegetation removed as a result of the project shall be replaced onsite at a minimum 3 to 1 ratio for riparian tree removals for any tree greater than 4 inches in diameter at breast height.

Minimization Measure TES 44 – California native species (local stock preferred) shall be used in re-vegetation and habitat enhancement efforts associated with the project.

Minimization Measure TES 45 – Erosion control devices shall be installed adjacent to work areas to control sedimentation and turbidity. Measures will be taken to control post-construction runoff and pollutant discharge.

Minimization Measure TES 46 – Within 300 feet of potential California red-legged frog breeding habitat, only water shall be used for dust abatement.

Tricolored Blackbird

Minimization Measure TES 47 – Surveys for tricolored blackbirds shall be performed at the ponds within and adjacent to the project area with records of tricolored blackbird occurrences prior to the start of construction. If a tricolored blackbird nesting colony is present, a 250-foot buffer shall be applied from the outer edge of hydric vegetation associated with the pond. If construction takes place during the breeding season when an active tricolored colony is present, a qualified biologist shall monitor construction activities to ensure that the 250-foot buffer is adequate, and the breeding colony is not affected by construction occurring outside this buffer. If monitoring indicates that construction outside the 250-foot buffer is affecting a breeding colony, the buffer shall be increased to the distance necessary to result in no harm or harassment to the nesting colony. If a larger buffer is not feasible or if the biologist determines that the nesting colony is at risk, construction near the ponds shall cease until the young have fledged and are no longer reliant on the nest or until an adequate buffer and monitoring plan is implemented and developed in consultation with the California Department of Fish and Wildlife.

Minimization Measure TES 48 – Pesticide application shall be avoided within 500 feet of all wetlands/water courses.

San Joaquin Kit Fox

Mitigation Measure TES 49 – Final compensatory mitigation shall be determined in coordination with the California Department of Fish and Wildlife during the California Endangered Species Act 2081 Incidental Take Permit permitting process. Caltrans anticipates that San Joaquin kit fox mitigation credits will be purchased from the Palo Prieto conservation bank.

Minimization Measure TES 50 – Caltrans shall comply with the conditions of the California Endangered Species Act 2081 Incidental Take Permit to be issued by the California Department of Fish and Wildlife that pertain to the San Joaquin kit fox. Conditions anticipated to be required by the permit include the following:

a) Workers shall inspect for San Joaquin kit foxes under vehicles and equipment before vehicles and equipment are moved. If a San Joaquin kit fox is discovered during inspection, the worker shall notify the Designated Biologist and wait for the San Joaquin kit fox to move unimpeded out of the project site or area. During all ground- or vegetation-disturbing activities, all workers shall inform the Designated Biologist if a San Joaquin kit fox is observed in the project area. All work in the vicinity of the San Joaquin kit fox, which could injure or kill the animal, shall cease immediately.
b) Dens (including dens in natural substrate and in/beneath human-made structures) may be excavated/destroyed only after the Designated Biologist has conducted four consecutive days (and nights) of monitoring with tracking medium or infrared camera and determined that San Joaquin kit foxes are not currently present. Natal dens shall not be excavated until the pups and adults have vacated the den and then only after written concurrence from the California Department of Fish and Wildlife. If the excavation process reveals evidence of current use by San Joaquin kit foxes, then den excavation/destruction shall cease immediately and tracking or camera monitoring shall be conducted/resumed.
c) Any known or natal San Joaquin kit fox den that must be destroyed shall be replaced with an artificial den.
d) The Designated Biologist or Biological Monitor shall inspect all open holes, sumps, and trenches within the project area at the beginning of the day, middle of the day, and end of the day for trapped San Joaquin kit foxes. To prevent inadvertent entrapment of wildlife, all excavations with sidewalls steeper than a 1 to 1 (45-degree) slope and that are up to 6 feet deep shall be covered when workers or equipment are not actively working in the excavation or shall have an escape ramp of earth or non-slip material with a less than 1 to 1 (45-degree) slope.
e) Ground- or vegetation-disturbing activities shall be confined to daylight hours only. Daylight shall be defined as the daytime period between sunrise and sunset.

Minimization Measure TES 51 – Caltrans shall comply with the conditions of the Biological Opinion to be issued by the U.S. Fish and Wildlife Service that pertain to the San Joaquin kit fox. Conditions anticipated to be required by the permit include the following:

a) Pre-construction surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact the San Joaquin kit fox. Surveys should identify San Joaquin kit fox habitat features on the project site and evaluate use by San Joaquin kit foxes if found to be present. The status of all dens should be determined and mapped and provided to the U.S. Fish and Wildlife Service within 5 days after survey completion and prior to the start of construction activities.

b) Using the U.S. Fish and Wildlife Service *Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior To Or During Ground Disturbance* (2011), the following buffers shall be used: potential den (50-foot buffer), known den (100-foot buffer), atypical den (50-foot buffer), potential natal den (200-foot buffer), and known natal den (500-foot buffer) with consultation with the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife.

c) The take authorization permit as issued provides a qualified biologist to proceed with den destruction of “potential dens” without monitoring within the project boundary, except for “natal or pupping” dens, which cannot be impacted until consultation with the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife has occurred. Destruction of “known” dens can only take place if the den is monitored for three consecutive days with tracking medium or wildlife camera to determine use.

d) Project-related vehicles should observe a 20-mile-per-hour speed limit in all project areas, except on county roads and state and federal highways; this is particularly important at night when San Joaquin kit foxes are most active. To the extent possible, night-time construction should be minimized. Off-road traffic outside of designated project areas should be prohibited.

e) To prevent inadvertent entrapment of San Joaquin kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2 feet deep should be covered at the close of each working day by plywood or similar materials or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured San Joaquin kit fox is discovered, the procedures under letter “n” of this section (TES 51) must be followed.

f) San Joaquin kit foxes are attracted to den-like structures such as pipes and may enter stored pipe becoming trapped or injured. All construction

pipes, culverts, or similar structures with a diameter of 4 inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for San Joaquin kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a San Joaquin kit fox is discovered inside a pipe, that section of pipe should not be moved until the U.S. Fish and Wildlife Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the San Joaquin kit fox has escaped.

g) All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in closed containers and removed at least once a week from a construction or project site.

h) No firearms shall be allowed on the project site.

i) To prevent harassment, mortality of San Joaquin kit foxes or destruction of dens by dogs or cats, no pets should be permitted on project sites.

j) Use of rodenticides and herbicides in project areas should be restricted. This is necessary to prevent primary or secondary poisoning of San Joaquin kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the U.S. Fish and Wildlife Service. If rodent control must be conducted, zinc phosphide should be used because of proven lower risk to the San Joaquin kit fox.

k) A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a San Joaquin kit fox or who finds a dead, injured or entrapped individual. The representative will be identified during the employee education program. The representative's name and telephone number shall be provided to the U.S. Fish and Wildlife Service.

l) An employee education program should be conducted for any project that has expected impacts to the San Joaquin kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in San Joaquin kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and agency personnel involved in the project. The program should include the following: a description of the San Joaquin kit fox and its habitat needs; a report of the occurrence of San Joaquin kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be

prepared for distribution to the above-mentioned people and anyone else who may enter the project site.

m) Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be recontoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but that after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and revegetation experts.

n) In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the U.S. Fish and Wildlife Service should be contacted for advice.

o) Any contractor, employee, or military or agency personnel who inadvertently kills or injures a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the California Department of Fish and Wildlife immediately in the case of a dead, injured or entrapped kit fox. The California Department of Fish and Wildlife contact for immediate assistance is State Dispatch at (916) 445-0045. They will contact the local warden or biologist.

p) The U.S. Fish and Wildlife Service and California Department of Fish and Wildlife will be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project-related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information.

q) A full-time, qualified biologist will implement the U.S. Fish and Wildlife Service's recommendations and other project-related biological monitoring requirements.

r) Dry culverts, a minimum of 36 inches in diameter, will cross all four lanes of traffic and will be located along the entire length of the proposed project every 0.3 mile based on recommendations in the literature (Cypher 2000). Culverts will not be placed at 0.3-mile intervals where drainage culverts or bridges greater than 36 inches are already proposed.

s) Wire mesh drift fencing with less than 2-inch squares will be used to funnel San Joaquin kit foxes toward culvert openings. Drift fencing will extend out approximately 150 feet on either side of culvert openings.

t) If a San Joaquin kit fox is found injured or killed as a result of the activities described in the Biological Opinion, the Federal Highway Administration or Caltrans must contact the U.S. Fish and Wildlife Service immediately, so

the agency can review the project activities to determine if additional protective measures are needed. Project activities may continue during this review period, provided that all protective measures proposed by Caltrans and the terms and conditions of the Biological Opinion have been and continue to be implemented.

u) Prior to the completion of the first phase of the project, Caltrans must provide the U.S. Fish and Wildlife Service with a draft plan to monitor the wildlife undercrossings associated with the proposed project. Following U.S. Fish and Wildlife Service review, a final monitoring plan must be completed within one year.

v) Caltrans must implement the final monitoring plan during the project to determine if their protective measures are effective in reducing San Joaquin kit fox mortality.

2.4.6 Invasive Species

Regulatory Setting

On February 3, 1999, President William J. Clinton signed Executive Order 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as "any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." Federal Highway Administration guidance issued August 10, 1999 directs the use of the State's invasive species list, maintained by the California Invasive Species Council to define the invasive species that must be considered as part of the National Environmental Policy Act analysis for a proposed project.

Affected Environment

The *2005 ND/FONSI* and the Supplemental Natural Environment Study for the project dated August 2023 were used in preparation of this section.

The dominant vegetation within the Antelope Grade Section Biological Study Area is composed of non-native annual grasses and forbs. Most of these species are considered naturalized in California due to their widespread nature. The disturbed edge along the existing right-of-way supports additional non-native species such as yellow star thistle (*Centaurea solstitialis*), summer mustard (*Hirschfeldia incana*), red-stem filaree (*Erodium cicutarium),* cheeseweed (*Malva parviflora*), and Russian thistle (*Salsola tragus*).

A total of 33 terrestrial plant species were observed in the Biological Study Area that are considered invasive by the online California Invasive Plant Council database. Invasiveness ratings include "limited," "moderate," and "high" and are set based on the level of ecological impact, the species'

reproductive ability to spread, and distribution. Four exotic plant species with a "high" invasiveness rating were observed within the Biological Study Area, including red brome (*Bromus rubens)*, cheatgrass (*Bromus tectorum)*, yellow star thistle (*Centaurea solstitialis)*, and saltcedar (*Tamarix ramosissima)*.

A small stand of blue gum (*Eucalyptus globulus*) totaling approximately 0.18 acre is present in the Biological Study Area. This vegetation alliance is classified as Eucalyptus Groves Semi-Natural Woodland Stands. This alliance is not considered sensitive, but is noted due to the highly invasive nature of the dominant species. Approximately 1.08 acre of Knapweed and Purple-Flowered Star-Thistle Fields alliance was noted in the Biological Study Area as well. The dominant species, Russian knapweed, is a rhizomatous perennial species that forms dense stands and is highly invasive.

Environmental Consequences

Ground disturbance and other aspects of project construction (for example, erosion control or landscaping) could spread or introduce invasive species within the Biological Study Area. The dominant vegetation within the project area is composed of non-native annual grasses and forbs, many of which are considered invasive. The project has the potential to increase the number of invasive species in additional areas that are not currently dominated by them.

In compliance with the National Invasive Species Council, Executive Order 13112, and guidance from the Federal Highway Administration, the landscaping and erosion control included in the project would not use species listed as invasive. All equipment and materials would be inspected for the presence of invasive species and cleaned if necessary. In areas of particular sensitivity, extra precautions would be taken if invasive species are found in or next to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur.

Avoidance, Minimization, and/or Mitigation Measures

The measures included below replace the language on invasive species control in the Visual section of the *2005 ND/FONSI* Mitigation and Monitoring Program in Appendix F. The following avoidance and minimization measures will be implemented to prevent the spread of invasive species during construction:

Minimization Measure IS 1 – Caltrans shall incorporate methods of weed control, including herbicide spraying for annual species such as tumble weed and yellow star thistle, where appropriate and allowed by permit requirements.

Avoidance Measure IS 2 – Invasive species listed in the California Invasive Plant Council Invasive Plant Inventory shall not be included in the Caltrans erosion control seed mix or landscaping planting plans.

Avoidance Measure IS 3 – The contract specifications for permanent erosion control will require the use of regionally appropriate California native forb and grass species that occur in the same general geographic area as the project site.

Avoidance Measure IS 4 – Construction equipment shall be free of excessive dirt that may contain weed seed before entering the construction site. If necessary, wash stations, either onsite or offsite, shall be established for construction equipment under the guidance of Caltrans to avoid or minimize the spread of invasive plants and/or seed within the construction area.

Avoidance Measure IS 5 – Mulches used on the project site shall be from source materials that will not introduce exotic species.

Minimization Measure IS 6 – In locations where the existing roadbed will be removed, Caltrans shall loosen up the soil to a 12-inch depth and incorporate 4 inches of compost to make the soil more fertile and less compacted with a greater potential for establishing native grasses and forbs. Caltrans shall re-contour the area and restore it to natural habitat with various methods of re-vegetation using native plants and seed.

Minimization Measure IS 7 – Herbicide use shall be appropriate for the target species, and shall follow the guidelines below:

a) All precautions shall be taken to ensure that no herbicide is applied to native vegetation;
b) Herbicides shall not be applied on or near open water surfaces (no closer than 100 feet from open water);
c) Herbicide spraying shall not occur when wind speeds are more than 3 miles per hour;
d) No herbicides shall be applied within 24 hours of forecasted rain;
e) Application of all herbicides shall be done by qualified Caltrans staff or contractors with a current applicator's license to ensure that overspray is minimized, that all applications are made in accordance with the label recommendations, and with implementation of all required and reasonable safety measures. A safe dye shall be added to the mixture to visually denote treated sites. Application of herbicides shall be consistent with the U.S. Environmental Protection Agency's Office of Pesticide Programs, Endangered Species Protection Program county bulletins;
f) All herbicides, fuels, lubricants, and equipment shall be stored, poured, or refilled at least 500 feet from riparian habitat or water bodies in a location where a spill would not drain directly toward aquatic habitat. Prior to the onset of work, Caltrans shall ensure that a plan is in place for a prompt and effective response to accidental spills. All workers shall be informed of

the importance preventing spills and of the appropriate measures to take should a spill occur.

2.5 Cumulative Impacts

Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of the proposed project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor but collectively substantial impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

The California Environmental Quality Act (CEQA) Guidelines Section 15130 describes when a cumulative impact analysis is necessary and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts under CEQA can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts under the National Environmental Policy Act (NEPA) can be found in 40 Code of Federal Regulations Section 1508.7.

Methodology

Cumulative impacts were briefly discussed in the *2005 ND/FONSI* and concluded that no new development is proposed within the project area and the project is not expected to measurably accelerate growth. Cumulative impacts were not determined to be cumulatively considerable. An updated cumulative impacts analysis was completed in July 2023 to consider changes to resources and conditions from the prior analysis.

Caltrans followed an eight-step approach for evaluating cumulative impacts to prepare an updated Cumulative Impact Assessment, pursuant to the *2005 Caltrans Cumulative Impact Analysis and Growth Related, Indirect Impact Guidance.* The first step in the assessment of potential cumulative impacts to identify the resources to consider in the analysis. A cumulative impact analysis focuses on resources that have the potential to be significantly

impacted by a proposed project (before mitigation measures are applied) or on resources that are currently in poor or declining health, even if the potential project impacts are relatively small.

Three resources were identified that have the potential to be adversely impacted by the project, including visual resources, paleontological resources, and biological resources, as discussed in Chapter 2. Although impacts will be reduced to less than significant with the implementation of avoidance, minimization, and minimization measures, these resources are considered in the following cumulative impacts analysis.

Also, air quality would be considered in poor health as the South Central Coast Air Basin was designated as an area in nonattainment for state ambient air quality standards for ozone since the release of the *2005 ND/FONSI*. However, air quality was eliminated from further review as implementation of standard measures, minimization measures, and stormwater best management practices during construction would minimize emissions as discussed further in Section 2.3.5 Air Quality. Similarly, global greenhouse gas emissions are in poor health but are addressed in Section 3.3 Climate Change.

Affected Environment

The second step in evaluating cumulative impacts is to identify appropriate Resource Study Area boundaries for each of the resources identified above. A Resource Study Area is the geographic area within which impacts on a resource are analyzed and are often broader than the boundary used for project specific analysis depending on the resource. Resource Study Areas were developed in coordination with the resource specialists and environmental coordinator. The third step is an evaluation of the resource health and the historic context of the resource.

Visual/Aesthetics

The Resource Study Area identified for visual/aesthetic resources is defined by the viewshed surrounding the proposed highway alignment. Views are limited throughout much of the alignment due to the steep terrain the proposed highway passes through; however, on the west and east ends of the alignment, the views open up again in the valley where elevations are lower.

The region can be generally defined as the western portion of a broad valley bounded by the Temblor Range and Antelope Grade to the west and the San Joaquin Valley to the east. Overall, the landform of the region is characterized by the undulating topography along the western perimeter of the region, flattening out toward the east through the southern San Joaquin Valley. The topography through the Antelope Grade provides a roadway alignment with sweeping curves and allows the opportunity for longer-range vistas of the surrounding landscape. East of the Temblor Range, the landform is mostly flat from the Kern County line to the eastern project limits near the community

of Lost Hills. The common vegetative feature of the region is the grass-covered ground plane. Scattered oak trees can be seen on hillsides and sparse row crops, orchards and occasional landscaping can be seen through the valley. Built development is limited to the highway itself, occasional ranches, and agriculture with more development, including scattered oil wells, to the eastern end of the corridor as State Route 46 approaches Interstate 5.

The quality of the existing visual environment through the project area is moderately high. This view quality is due primarily to the overall rural character, the topographic relief along the western end of the project, agricultural vegetative patterns, and the minimal visibility of built elements. State Route 46 from post miles 29.8 to 55.1 and State Route 41 from post miles 43.8 to 8.0 are designated as eligible in the Scenic Highway system. Also, local land use policies emphasize the protection of visual resources along rural routes such as State Route 46. Visual resources in the area are in good health and are considered stable.

Paleontological Resources

Direct impacts to paleontological resources occur when earthwork operations cut into the geologic units within which fossils are buried and physically destroy the fossil remains. The Resource Study Area identified for paleontology is defined by the grading footprint as impacts are typically site-specific as they relate to the particular underlying conditions and resources of an area.

The project area lies within the Coast Ranges Geomorphic Province of California, a linear series of northwest-trending mountain ranges and intervening valleys that dominate the coastal region of California. The complex geologic history of the southern Coast Ranges is dominated by the development of and lateral movement along the San Andreas Fault Zone over the last 30 million years. Several formations within the project area are considered to have a high potential for yielding paleontological resources. Section 2.3.3 describes the potential paleontological resources in the region. The resource is generally considered healthy as there has been minimal disturbance in the area aside from the development of the existing highway and infrastructure related to the pumping plant and utilities.

Jurisdictional Wetlands, Other Waters, and Riparian Habitat

The Resource Study Area for jurisdictional waters is the Cholame Creek and Antelope Valley HUC10 watersheds. The Cholame Creek watershed spans approximately 613 square miles or 151,701 acres and is bisected from north to south by Cholame Creek, and from east to west by the Monterey and San Luis Obispo County line. The Antelope Valley-Antelope Plain watershed spans approximately 485 square miles or 119,903 acres and is primarily within Kern County, though small sections are within San Luis Obispo County and Kings County.

The Cholame Creek watershed is a lightly populated rural setting and drains into an alluvial valley and surrounding mountains within an ecosystem characterized of grassland, chaparral, oak woodland, and sagebrush. The dominant land use is agriculture; irrigated production has increased recently, particularly in vineyards and alfalfa. Dry farming and grazing operations encompass the rest of the agricultural uses. Cholame Creek downstream of State Route 46 on the west side of Polonio Pass is listed on the Central Coast Region's Clean Water Act Section 303(d) list due to impairment by boron, sodium, chloride, specific conductivity, and dissolved oxygen. It is subject to a total maximum daily load for fecal coliform and E. coli bacteria.

In the Antelope Valley-Antelope Plain watershed, the increase of intensive agriculture has degraded and altered the natural landscape. In addition, water diversions, channelization of drainages, flood control efforts, and bridges are used to control water and are especially prevalent in the Kern County portion of the resource study area where irrigated agricultural development is dominant.

Special-Status Plant Species

Impacts are anticipated to several special-status plant species, including Temblor buckwheat, protruding buckwheat, and stinkbells. The Resource Study Area is defined by the Cholame Creek and Antelope Valley HUC10 watersheds. The watersheds are the most appropriate Resource Study Area for these species because they tend to occur on steep north-facing slopes throughout the region and are not limited to the project area.

These plants are endemic to California and are typically found within grassland where there is less grazing pressure and potentially increased soil moisture on north-facing slopes due to the slope aspect. Protruding buckwheat and stinkbells are both perennial herbs that are ranked by the California Native Plant Society as 4.2y, indicating they have limited distribution (uncommon in California) and are on a watch list to be monitored for threats. Temblor buckwheat is an annual herb that is higher ranked (more rare) as 1B.2, which indicates it is rare, threatened, or endangered in California and elsewhere. These plants are rare for a variety of reasons, including loss of habitat from increasing development, grazing practices over large habitat areas, vehicle traffic on and off roads, and nonnative plant competition. Also, Temblor buckwheat grows in shale barrens, a specialized substrate that is uncommon.

California Tiger Salamander

The California tiger salamander is capable of dispersing up to 1.24 miles from aquatic habitat, so the most appropriate representative area for the Resource Study Area is a 1.24-mile buffer from the potential and confirmed breeding ponds in the area.

According to the species recovery plan for the Central California Distinct Population Segment prepared by the U.S. Fish and Wildlife Service, multiple

factors have contributed to population declines of the California tiger salamander, including habitat loss and fragmentation, predation from and competition with invasive species, hybridization with nonnative barred tiger salamanders, mortality from road crossings, contaminants, and small mammal burrow control efforts. Potential threats include introduction of diseases, such as ranaviruses and chytrid fungi, and also climate change.

California Red-Legged Frog

The Resource Study Area identified for the California red-legged frog is defined by the Estrella River Core Area within the Diablo Range and Salinas Valley Recovery Unit as shown in the U.S. Fish and Wildlife Service Recovery Plan for the California Red-legged Frog. Less than 10 percent of historic California red-legged frog localities currently support the species in this recovery unit. The recovery unit is identified in the recovery plan as containing numerous existing populations, with some areas of medium habitat suitability, and a high level of threats. Those threats are created by agriculture, livestock, mining, non-native species, recreation, urbanization, and water management activities. The Estrella River Core Area is identified as important to the recovery of the California red-legged frog because it is currently occupied by the species and provides connectivity between populations. Critical habitat has been designated by the U.S. Fish and Wildlife Service within this core area, including 17,787 acres of private and federal land in the northeastern portion of San Luis Obispo County (SLO-1) with a small portion extending into Kern County. This area has features that provide suitable dispersal and aquatic habitat for the California red-legged frog.

The California red-legged frog was listed as a federally threatened species in 1996. California red-legged frog habitat historically ranged from Marin County southward to northern Baja California, but has lost 70 percent of its historic range over the last 200 years. Presently, Monterey, San Luis Obispo, and Santa Barbara counties support the largest remaining California red-legged frog populations within California. California red-legged frog populations have also been subject to agricultural and urban runoff and predation by invasive species, which were introduced within the past 200 years.

San Joaquin Kit Fox

The project area is within the designated San Joaquin kit fox range throughout California, but does not specifically fall within U.S. Fish and Wildlife Service-designated core or satellite units. Instead, the Resource Study Area for the San Joaquin kit fox is defined by the Cholame Creek and Antelope Valley HUC10 watersheds. The watersheds compose the Resource Study Area to capture a large portion of natural landscape blocks that are interconnected in this region, including portions of the Kettleman Hills and Antelope Plain/Semitropic/Kern satellite units within the designated range.

San Joaquin kit foxes historically ranged between Contra Costa County in the north down through the Central Valley to eastern Santa Barbara County and southern Kern County. They typically inhabit areas of low vegetation, usually consisting of grasslands or chenopod scrub communities. However, habitat loss and degradation have occurred rapidly in the past 200 years. Settlers came to the region in the early 1800s, and development has progressed rapidly since. Intensive agricultural and urban development has significantly decreased habitat and fragmented their population. Use of rodenticides and pesticides has also harmed their population. The San Joaquin kit fox was listed as federally endangered in 1967 and listed as state threatened in 1971. Since the listing of the species at the federal and state levels, conservation efforts have increased. Although the U.S. Fish and Wildlife Service has not designated critical habitat for the San Joaquin kit fox, it has prepared a recovery plan.

Pressure from oilfield development, roadway projects, solar farm development, and cannabis-growing operations have impacted San Joaquin kit fox habitat. However, by incorporating design measures into recent solar farms near the Carrizo Plain, data suggests that San Joaquin kit foxes have continued using the solar farms after the energy farms became fully operational. The legalization of cannabis in California has also provided a mechanism for permitting, mitigation, and enforcement, which leads to improved management of the San Joaquin kit fox and the species habitat. Several active oilfields overlap the Antelope Valley-Antelope Plain watershed in Kern County, including Devils Den, Lost Hills, Welcome Valley, and Blackwells Corner. The California Council on Science and Technology discusses in its 2015 study on potential impacts of well stimulation on wildlife and vegetation an increased rate of vehicle-related mortality in oil-developed areas versus non-developed areas. And although San Joaquin kit foxes appear to have acclimated to the regimen of noise, ground vibrations, and human disturbances associated with a moderate density active oil field, construction activities that directly destroy active dens or burrow sites have had significant impacts on San Joaquin kit fox populations.

Tricolored Blackbird

The Resource Study Area for the tricolored blackbird is defined by a 5-kilometer buffer around the identified stock pond adjacent to the project area. According to several 2015 papers by Robert J. Meese of the University of California at Davis, the vast majority of foraging typically occurs within 5 kilometers of nesting substrate. Caltrans biologists identified the stock pond as a potential nesting site, and a 5-kilometer buffer was added to create the Resource Study Area.

The tricolored blackbird is a passerine that was listed as a state threatened species in 2018 due to its dramatic population decline. Ninety-five percent of the world's tricolored blackbirds occur in California; the species breeding range is throughout most of California, though the bulk of the birds’

occurrence is within the Sacramento and San Joaquin valleys. Typically, nesting tricolored blackbirds use standing water that supports cattails, tules, Himalayan blackberry, thick stands of thistle or stinging nettle, as well as agricultural grain fields. Population numbers have plummeted over the last two decades due to a variety of factors, including widespread nesting and foraging habitat losses to agriculture and urbanization, destruction of nesting colonies during the routine harvest of their grain field nesting substrates and shooting in autumn in paddies of ripening rice. As a result of these and other factors, the number of tricolored blackbirds has been reduced by more than 90 percent in the past 80 years.

Environmental Consequences

The fourth step of the cumulative impact assessment is to identify the direct and indirect impacts of the project on the resources described above. Project-related impacts are discussed in Chapter 2 in their respective section. Numerous avoidance, minimization, and mitigation measures are included to reduce project impacts to a less than significant level. See Sections 2.2.5 Visual/Aesthetics, 2.3.3 Paleontology, and 2.4 Biological Resources for a complete list of measures.

Step five requires the identification of current and reasonably foreseeable actions that could affect each of the resources included in this analysis. To identify current and reasonably foreseeable projects within approximately the next 20 years, numerous planning resources were consulted. These resources include the Caltrans project database, the CEQA State Clearinghouse, county and city planning websites, general and specific plans, and regional transportation plans. Locations of the identified reasonably foreseeable projects were compared to the boundaries of the Resource Study Areas.

A total of 20 proposed projects, seven applications for projects, and two projects currently in construction were identified within the Resource Study Area boundaries. These include projects in San Luis Obispo County, Kern County, Monterey County, the City of Paso Robles, and Caltrans jurisdiction. Also, several future projects and/or needs were identified in the San Luis Obispo Council of Governments Regional Transportation Plan, the Kern Council of Governments Regional Transportation Plan, the North County Villages Plan, and the Shandon Community Plan. One additional proposed project was noted that is not within the Resource Study Area boundaries: The Landing Paso Robles project in the City of Paso Robles, California. This project proposes to develop warehouse facilities, office space, and retail space and anticipates an average of 15,000 additional vehicle trips per day, some of which would likely travel on State Route 46 to reach Interstate 5 and the Central Valley. The projected annual average daily traffic for design year 2046 discussed in Section 1.2.4 Traffic Congestion is intended as a forecast to model for future conditions with increased vehicle trips.

Step six is the process of assessing potential cumulative impacts by reviewing the previous information gathered regarding the historic context and current health of each resource included in the cumulative impact analysis, the impacts of the proposed project on these resources, and the impacts of reasonably foreseeable future projects on the resources. Considering all that, the next step is to assess whether cumulative impacts exist and whether the proposed project would have a considerable contribution to the cumulative impact. This included a consideration of the current health and trend of the resource, the sensitivity of the resource, whether the project's impact to the resource is proposed to be fully mitigated, and any available information regarding the abundance of the resource.

Visual/Aesthetics

The context and extent of the project's contribution to this cumulative impact were considered. Avoidance, minimization, and mitigation measures have been provided for the few projects with anticipated impacts to visual/aesthetic resources in the Resource Study Area. The health of the resource is stable, and the proposed project will not block views, substantially detract from the total visual experience for the highway user along State Route 46, or otherwise result in a substantial change to the visual environment. Project impacts would be addressed by avoidance, minimization, and mitigation measures as described in Section 2.2.5 Visual Resources; the project would fully mitigate all impacts. These factors indicate that the incremental contribution of the project to the cumulative impact to this resource would not be considerable.

Paleontological Resources

Construction of the project would require grading and excavation that could potentially affect paleontological resources, similar to past projects on the State Route 46 corridor, including construction of the Cholame and Wye segments. The cumulative effect of these projects is potentially the continued loss of these resources. No additional projects were identified within the Resource Study Area with impacts to paleontological resources. The potential loss of paleontological resources would contribute to the incremental degradation of the local historic record. However, project-specific mitigation would be implemented to reduce this effect. Conditions as described in Section 2.3.3 Paleontology would be required on this project where cumulative development has the potential to affect these resources. The contribution of the proposed project to the degradation of the historic local paleontological resources would, therefore, not be cumulatively considerable. Cumulative impacts would be less than significant.

Jurisdictional Wetlands, Other Waters, and Riparian Habitat

The context and extent of the project's contribution to this cumulative impact were considered. The project impacts would be addressed by avoidance, minimization, and mitigation measures as described in Section 2.4 Biological

Resources, and the project would fully mitigate all impacts. Further, the project would impact a small portion of the total resource included in the Resource Study Area. Projects proposed in the watersheds composing the Resource Study Area are generally avoiding jurisdictional areas or appropriately mitigating impacts through restoration. No other proposed projects were identified in the area with significant impacts to jurisdictional resources. These factors indicate that the incremental contribution of the project to the cumulative impact to this resource would not be considerable.

Special-Status Plant Species

No other projects with impacts to Temblor buckwheat, protruding buckwheat, or stinkbells were identified within the Resource Study Area. No existing adverse cumulative effect exists in the defined Resource Study Area. The proposed project would implement avoidance, minimization, and mitigation measures discussed in Section 2.4 Biological Resources that would fully mitigate all project impacts. The project, when considered in a cumulative effects context, is not anticipated to make a considerable contribution to adverse cumulative impacts to special-status plant species in the Resource Study Area.

California Tiger Salamander

No other proposed projects with impacts to the California tiger salamander were identified within the Resource Study Area; no existing adverse cumulative effect exists in the defined Resource Study Area. The proposed project would implement avoidance, minimization, and mitigation measures discussed in Section 2.4 Biological Resources that would fully mitigate all project impacts. The project, when considered in a cumulative effects context, is not anticipated to make a considerable contribution to adverse cumulative impacts to the California tiger salamander in the Resource Study Area.

California Red-Legged Frog

Due to the project's location within critical habitat and the Resource Study Area covering the Estrella River Core Area, the effect of past, current, and future development, including the proposed project, has potential to further degrade this resource and its critical habitat. Therefore, an adverse cumulative impact was identified. The context and extent of the project's contribution to this cumulative impact were considered, noting that the proposed project would implement the avoidance, minimization, and mitigation measures that would fully mitigate all project impacts. Also, no proposed projects were identified in the Resource Study Area with anticipated impacts to the California red-legged frog. The project, when considered in a cumulative effects context, is not anticipated to make a considerable contribution to adverse cumulative impacts to the California red-legged frog in the Resource Study Area because the project will fully mitigate for impacts to jurisdictional features. These factors indicate that the incremental contribution

of the proposed project to the cumulative impact on the California red-legged frog would not be considerable.

San Joaquin Kit Fox

Proposed projects documented within the Resource Study Area that anticipate impacts to the San Joaquin kit fox require mitigation measures for impacts. Due to the condition of the species and the development of additional projects within the Resource Study Area, an adverse cumulative impact was identified. The project will result in direct impacts to San Joaquin kit fox habitat, but will include avoidance minimization, and compensatory measures to ensure a significant impact to the San Joaquin kit fox does not occur. The barrier effect of the highway may result in additional impacts after construction of the roadway, though the development of span structures, concrete box structures, and additional culvert undercrossings may improve this condition. However, the project, when considered in a cumulative effects context, is not anticipated to substantially contribute to adverse cumulative impacts to the San Joaquin kit fox in the Resource Study Area. Avoidance, minimization, and mitigation measures will fully mitigate impacts to the species, compensatory mitigation will preserve offsite habitat, and highway crossing opportunities will be improved. These factors indicate that the incremental contribution of the proposed project to the cumulative impact on the San Joaquin kit fox would not be considerable.

Tricolored Blackbird

No other projects with impacts to the tricolored blackbird were identified within the Resource Study Area, and no existing adverse cumulative effect exists in the defined Resource Study Area. The proposed project would implement avoidance, minimization, and mitigation measures discussed in Section 2.4 Biological Environment that would fully mitigate all project impacts. The project, when considered in a cumulative effects context, is not anticipated to make a considerable contribution to adverse cumulative impacts to the tricolored blackbird in the Resource Study Area.

Avoidance, Minimization, and/or Mitigation Measures

See Sections 2.2.5 Visual/Aesthetics, 2.3.3 Paleontology, and 2.4 Biological Resources for project-specific measures. No additional measures are proposed.

2.6 Construction Process

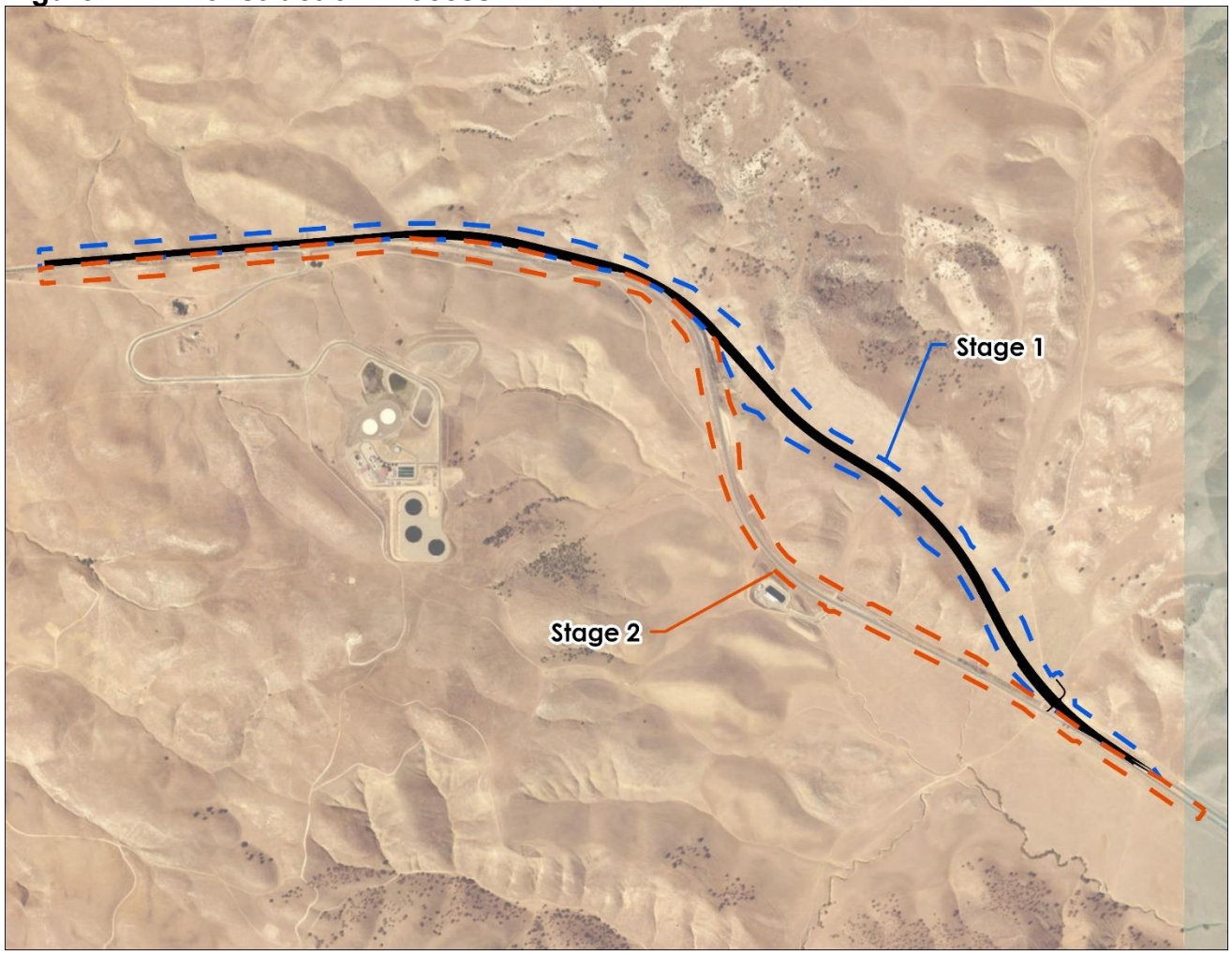
Construction of the proposed project would be completed in two stages. The first stage of work would begin off of the existing highway corridor where grading for the realigned roadway would occur. This work would include the eastbound and westbound lanes east of the summit of Antelope Grade, as well as the westbound lanes west of the summit. Lane closures and temporary barrier may be used later in this stage to allow for the grading work

for the westbound lanes to be completed. The pavement section for the westbound lanes and a portion of the eastbound lanes would be completed in this stage.

The second stage would include transitioning traffic over to the new westbound lanes with temporary transitions on the east and west ends of the project. With the transition, construction could then begin on completing the remaining section of eastbound lanes. Driveway access to private properties would be provided through temporary approaches until the eastbound lanes are completed and the new at-grade intersections are built.

Figure 2-12 shows the anticipated areas involved for the first and second stages.

Figure 2-12 Construction Process



Transportation Management Plan

Construction work for the proposed project would be done mostly during daylight hours. To the extent feasible, night work would be limited, but some night work is necessary for worker safety. These night work activities include, but may not be limited to, lane striping activities, traffic switching operations, tailgate and safety meetings, and preparation of equipment in designated staging areas.

Traffic management during construction is expected to involve temporary single-lane closures to maintain traffic access along State Route 46 within the project limits. Any single-lane closures, construction signage, and other traffic control information would be included in a Transportation Management Plan that would be implemented during the construction phase. Lane closures would be implemented per Caltrans' lane closure charts to be included in the construction contract specifications.

The public shall be notified of planned construction traffic management strategies through various methods as part of a public awareness campaign and motorist information on the project route. The public awareness campaign may include strategies such as press releases and media alerts, advertisements, Caltrans websites, and other highway traffic-related internet applications, and/or a telephone hotline. Traveling motorist information may include tools such as on-highway and local street changeable message signs, construction area signs, and radio advisories.

Temporary Construction Easements and Permanent Access Rights

Project construction may require temporary construction easements for access onto adjacent properties during construction activities at selected locations based on preliminary design information. The proposed culvert replacements may also require drainage easements to enable permanent access rights to culverts placed outside of the state highway right-of-way for long-term maintenance and repair. Permanent private property acquisition would be required to accommodate the proposed project; additional information is provided in Section 2.2.2 Farmland.

Construction Equipment and Storage

Caltrans would confine project-related parking, staging areas, laydown sites, concrete batch plant(s), and equipment storage to the project site, and would use, to the extent possible, previously disturbed areas within the current alignment along State Route 46 and within the existing Caltrans right-of-way. Additional areas within the newly acquired Caltrans right-of-way and new alignment would be used for the aforementioned activities, though exact locations have not been determined at this time. Construction of prior sections of the State Route 46 Corridor Improvement project have used a 12-acre site for equipment storage and staging on Parcel 11343 south of Cholame, and it

is anticipated that this location would be used for construction of the Antelope Grade section as well.

Equipment to be used during project construction may include but is not limited to the following: cranes, loaders, drill rigs, excavators, backhoes, dump trucks, concrete trucks, grinders, pavers, rollers, water trucks, traffic control trucks, lowboys, and any other equipment necessary in the course of construction. Precise locations of construction equipment and materials storage and staging areas would be developed during the Plans, Specifications, and Estimates phase of the project.

The project contractor is required to secure, at the contractor's expense, any additional areas required for equipment and material storage and concrete batch plant(s). No area is available within the contract limits for the exclusive use of the contractor. However, temporary storage of equipment and materials on State property may be arranged with Resident Engineer approval, subject to the prior demands of State maintenance forces and to other contract requirements. If the contractor is proposing to use an area outside of the state right-of-way, the following documentation must be submitted to Caltrans for review and approval:

- Site plan, including site limits and access roads
- Final property owner agreement
- Release of liability
- Environmental documentation prepared by an appropriately qualified
- environmental specialist
- All necessary Permits, Licenses, Agreements and Certifications
- Final grading plan in conformance with Caltrans Standard Specifications
- Water Pollution Control Plan

Chapter 3 CEQA Evaluation

3.1 Determining Significance Under CEQA

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

One of the main differences between NEPA and CEQA is the way significance is determined. Under NEPA, significance is used to determine whether an Environmental Impact Statement, or a lower level of documentation, will be required. NEPA requires that an Environmental Impact Statement be prepared when the proposed federal action (the project) as a whole has the potential to "significantly affect the quality of the human environment." The determination of significance is based on context and intensity. Some impacts determined to be significant under CEQA may not be of sufficient magnitude to be determined significant under NEPA. Under NEPA, once a decision is made regarding the need for an Environmental Impact Statement, it is the magnitude of the impact that is evaluated and no judgment of its individual significance is deemed important for the text. NEPA does not require that a determination of significant impacts be stated in the environmental document.

CEQA, on the other hand, does require Caltrans to identify each "significant effect on the environment" resulting from the project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an Environmental Impact Report must be prepared. Every significant effect on the environment must be disclosed in the Environmental Impact Report and mitigated if feasible. In addition, the CEQA Guidelines list a number of "mandatory findings of significance," which also require the preparation of an Environmental Impact Report. There are no types of actions under NEPA that parallel the findings of mandatory significance of CEQA. This chapter discusses the effects of this project and CEQA significance.

3.2 CEQA Environmental Checklist

This checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. Potential impact determinations include Significant and Unavoidable Impact, Less Than Significant Impact With Mitigation Incorporated, Less Than Significant Impact, and No Impact. In many cases, background studies performed in connection with a project will indicate that there are no impacts to a particular resource. A No Impact answer reflects this determination. The words “significant” and “significance” used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this checklist are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

Project features, which can include both design elements of the project, and standardized measures that are applied to all or most Caltrans projects such as Best Management Practices and measures included in the Standard Plans and Specifications or as Standard Special Provisions, are considered to be an integral part of the project and have been considered prior to any significance determinations documented below; see Chapters 1 and 2 for a detailed discussion of these features. The annotations to this checklist are summaries of information contained in Chapter 2 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.

3.2.1 Aesthetics

CEQA Significance Determinations for Aesthetics

Except as provided in Public Resources Code Section 21099, would the project:

a) Have a substantial adverse effect on a scenic vista?

Less Than Significant Impact With Mitigation Incorporated—Scenic vistas in the project area include rolling hillsides combined with patterns of open space and native vegetation. The project may affect distant views due to the large cut and fill slopes, and views from the roadway to the surrounding hillsides would be affected to some degree by bridge barriers. However, the surrounding scenic vistas are plentiful in the area, and access to these views would not be substantially reduced. Mitigation measures to reduce impacts resulting from cut and fill slopes and increased roadway development are discussed in Section 2.2.5 Visual/Aesthetics.

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

No Impact—The project is not within a Designated 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?

Less Than Significant Impact With Mitigation Incorporated—Motorists travelling through the project limits may be moderately sensitive to the changes resulting from the proposed project. Large cut slopes would be highly noticeable from both directions of traffic and would reduce visual quality. The proposed bridges would be viewed parallel to the route as the driver approaches the structures, and the earthen berm could be a highly visible engineering feature; these elements would contribute to a more urbanizing quality of the visual character. Mitigation measures applied to the project will reduce adverse impacts to visual resources to a less than significant level.

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

No Impact—No new night lighting is proposed, and glare is not anticipated from any project elements.

3.2.2 Agriculture and Forest Resources

CEQA Significance Determinations for Agriculture and Forest Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project, and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the

Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact—No prime farmland, unique farmland, or farmland of statewide importance as designated by the California Department of Conservation Farmland Mapping and Monitoring Program would be impacted by the project. Approximately 15.8 acres of property mapped as farmland of local potential by the California Department of Conservation Farmland Mapping and Monitoring Program would be impacted by the project as discussed in Section 2.2.2 Farmland.

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

Less Than Significant Impact—The project lies within land that is zoned for agricultural purposes in San Luis Obispo and Kern counties. Construction of the proposed project would result in the conversion of 109.25 acres of agricultural land into transportation use. Approximately 70.5 acres of this total are held under Williamson Act contracts. See Section 2.2.2 Farmland for more detail.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

No Impact—Land surrounding the Antelope Grade section is zoned rural agricultural in San Luis Obispo County and exclusive agriculture in Kern County. No forest land or timberland exists within the project vicinity.

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

No Impact—No forest land exists within the project vicinity.

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?

No Impact—There would not be other changes in the existing environment that could result in the conversion of farmland to non-agricultural use, or conversion of forest land to non-forest use. See Section 2.2.2 Farmland for more information on farmland resources.

3.2.3 Air Quality

CEQA Significance Determinations for Air Quality

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.

Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact—The Antelope Grade section is listed in the 2019 financially constrained Regional Transportation Plan and the 2020 Regional Transportation Improvement Program, which was found to conform by the San Luis Obispo Council of Governments on April 16, 2021. Refer to Section 2.3.5 Air Quality.

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

Less Than Significant Impact—The project lies within a nonattainment area for both the 2008 federal 8-hour and 2015 federal 8-hour ozone levels, and nonattainment for state fugitive dust (PM_{10}) and 1-hour ozone levels. With respect to ozone, regional and project-level conformity has been met with the project's inclusion in the 2019 Regional Transportation Plan, 2021 Federal Transportation Improvement Plan, and 2020 Regional Transportation Improvement Plan. The rise in fugitive dust (PM_{10}) with the 2046 Build Alternative due to increased vehicle speeds is not large enough to be considered a cumulatively considerable net increase. Refer to Section 2.3.5 Air Quality.

c) Expose sensitive receptors to substantial pollutant concentrations?

No Impact—No sensitive receptors exist within the project area.

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

Less Than Significant Impact—No residences or businesses exist within the project area. Short-term construction emissions contributing to particulate dust are not anticipated to affect a substantial number of people.

3.2.4 Biological Resources

CEQA Significance Determinations for Biological Resources

Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less Than Significant Impact With Mitigation Incorporated—The Antelope Grade North Alternative has the potential to result in direct and indirect impacts to plant and animal species that are listed as species of special concern or as threatened or endangered. With incorporation of avoidance, minimization, and mitigation measures described in Section 2.4 Biological Environment, potential impacts to biological resources would be reduced to less than significant.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less Than Significant Impact With Mitigation Incorporated—Construction of the Antelope Grade North Alternative would result in 0.239 acre of permanent impacts and 0.016 acre of temporary impacts to intermittent streambed, 0.396 acre of permanent impacts and 0.058 acre of temporary impacts to herbaceous streambank, and 0.03 acre of permanent impacts and 1.60 acre of temporary impacts to Hillside Daisy Association of the Monolopia-Leafy Stemmed Tickseed Fields Alliance. Invasive species control as described in Section 2.4.6 and use of environmentally sensitive fencing to limit construction activities would protect habitats of concern. Temporary project impacts to riparian areas would be restored at a 1 to 1 acreage ratio, and permanent impacts to riparian areas would be mitigated at a 3 to 1 acreage ratio. Implementation of avoidance, minimization, and mitigation measures described in Section 2.4.2 Wetlands and Other Waters would reduce adverse impacts to less than significant.

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less Than Significant Impact With Mitigation Incorporated—Construction of the Antelope Grade North Alternative would result in 0.087 acre of permanent impacts to wetlands and 0.028 acre of temporary impacts to wetlands. Temporary project impacts would be restored at a 1 to 1 acreage ratio, and permanent impacts would be restored at a 3 to 1 acreage ratio. Implementation of avoidance, minimization, and mitigation measures described in Section 2.4.2 Wetlands and Other Waters would reduce adverse impacts to less than significant.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less Than Significant Impact With Mitigation Incorporated—The existing two-lane highway acts as a physical, visual, and behavioral barrier for some wildlife and may restrict movement across the landscape within this corridor; conversion to an expressway has the potential to affect a variety of species by further reducing connectivity. The project design would incorporate avoidance, minimization, and mitigation measures to improve connectivity in the form of bridge structures, large box culverts, and additional 36-inch culverts every 0.3 mile where feasible to increase permeability. Directional fencing would also be used to encourage use of the undercrossings. Refer to Section 2.4.5 Threatened and Endangered Species. Implementation of these measures would reduce adverse impacts to less than significant.

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

No Impact—The Antelope Grade North Alternative does not conflict with any local policies protecting biological resources.

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—There is no adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan within the project limits.

3.2.5 Cultural Resources

CEQA Significance Determinations for Cultural Resources

Would the project:

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

No Impact—No historical resources would be impacted by the proposed project.

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

No Impact—No archaeological resources would be impacted by the proposed project.

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

No Impact—Caltrans applies standard specifications to all projects in the event of discovery of unanticipated cultural materials. If cultural materials are discovered during project construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find.

3.2.6 Energy

CEQA Significance Determinations for Energy

Would the project:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less Than Significant Impact—The 2046 Build Alternative would cause slightly higher fuel consumption than the 2046 No-Build Alternative, though fuel efficiency is anticipated to increase over the years and the use of gasoline or diesel-powered vehicles is expected to decrease through legislation and regulatory restrictions.

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

No Impact—The project is one of many projects planned and included in the San Luis Obispo Council of Governments' 2014 and 2019 Regional Transportation Plans with the aim of reducing congestion and greenhouse emissions. In June 2015, the California Air Resources Board determined that the 2014 Regional Transportation Plan would achieve the greenhouse gas emissions reduction targets that were established for the region, which is an 8 percent reduction from 2005 in both 2020 and 2035. Therefore, the project would not conflict with state and local policies to reduce energy, and there would be no impacts.

3.2.7 Geology and Soils

CEQA Significance Determinations for Geology and Soils

Would the project:

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?

No Impact—The project area is not within an Alquist-Priolo Earthquake Fault Zone as identified by the California Geologic Survey, nor is it located within 1,000 feet of a mapped fault that is of Holocene-Latest Pleistocene age or younger (active within the last 15,000 years). By these definitions, the project site is not anticipated to be impacted by surface fault rupture potential from known active faulting.

ii) Strong seismic ground shaking?

Less Than Significant Impact—High seismic ground accelerations are the amount (strength and duration) of ground shaking that a site could be subjected to from a local or regional earthquake. The project area is within a region designated as having an increased likelihood for stronger ground shaking potential due to the proximity to the San Andreas Fault. Site-specific testing would provide data for appropriate design specifications, and the proposed project would be built to current seismic standards as provided in the Highway Design Manual. Adverse effects related to strong seismic ground shaking are not expected.

iii) Seismic-related ground failure, including liquefaction?

No Impact—The proposed project is not located within an area designated by the California Department of Conservation as having a high potential for seismic-related ground failure or liquefaction. Additional subsurface investigations would be completed during the Plans, Specifications, and Estimates phase of the project, and standard engineering and geotechnical design would address potential geologic and seismic hazards.

iv) Landslides?

No Impact—The proposed project is not located within an area designated by the California Department of Conservation as having a high potential for landslides. Additional investigations would be completed during the Plans, Specifications, and Estimates phase, and standard engineering and geotechnical design would address potential geologic and seismic hazards.

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

No Impact—Standard specifications and best management practices would be incorporated to ensure substantial soil erosion or loss of topsoil does not occur.

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

Less Than Significant Impact—The proposed project is not within an area known to be unstable that has potential for landslides, lateral spreading, subsidence, liquefaction, or collapse. Additional subsurface investigations

would be completed during the Plans, Specifications, and Estimates phase, and standard engineering and geotechnical design would address potential geologic and seismic hazards.

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—Boring data to determine the soil characteristics would be completed during the Plans, Specifications, and Estimates phase, and standard engineering and geotechnical design would address potential geologic and seismic hazards.

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 septic tanks or waste water disposal systems are proposed.

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

Less Than Significant Impact With Mitigation Incorporated—A Paleontological Mitigation Plan would be prepared for the project prior to construction to outline procedures for collecting fossils, recording data, and curation. Implementation of the Paleontological Mitigation Plan that includes construction monitoring in sensitive geologic formations, as described in Mitigation Measure PALEO-1 and PALEO-2, would reduce impacts to less than significant.

3.2.8 Greenhouse Gas Emissions

CEQA Significance Determinations for Greenhouse Gas Emissions

Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant Impact—The project would result in greenhouse gas emissions during construction and a slight increase in modeled operational greenhouse gas emissions due to an increase in design speed. Impacts would be less than significant with the implementation of construction greenhouse gas and air quality minimization measures discussed in Sections 2.3.5 and 3.4.

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

Less Than Significant Impact—The project is one of many projects planned and included in the San Luis Obispo Council of Governments' 2019 Regional Transportation Plan with the aim of reducing congestion and greenhouse emissions. The Final Environmental Impact Report concludes that implementation of projects included in the 2019 Regional Transportation Plan would not result in a net increase in greenhouse gas emissions or result in a significant impact on the environment. In June 2015, the California Air Resources Board determined that the 2014 Regional Transportation Plan would achieve the greenhouse gas emissions reduction targets that were established for the region, which is an 8 percent reduction from 2005 in both 2020 and 2035.

3.2.9 Hazards and Hazardous Materials

CEQA Significance Determinations for Hazards and Hazardous Materials

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less Than Significant Impact—Routine hazardous waste discussed in Section 2.3.4 would be handled, treated, and disposed of properly following Caltrans Standard Specifications.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less Than Significant Impact—One of the purposes of the project is to enhance safety conditions and minimize vehicle collisions. Safety requirements and standards as described in Section 1.2.4 would be incorporated into the project design, thereby minimizing the likelihood of collisions.

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—No schools (or proposed schools) sit within one-quarter mile of the proposed project.

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?

Less Than Significant Impact—As discussed in Section 2.3.4, it is unlikely that contaminated soils at the Polonio Pass Pipeline #2 site would be disturbed by construction of the proposed project. If petroleum hydrocarbons

are unexpectedly encountered during construction, Caltrans may use the Emergency Construction Contract to remove and properly dispose of any petroleum hydrocarbon-impacted soil encountered.

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

No Impact—The project is not located within an airport land use plan or within 2 miles of a public airport.

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

No Impact—The project would not impair implementation or physically interfere with adopted emergency response plans or emergency evacuation plans.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Less Than Significant Impact—The project would not expose the traveling public to any change in risk involving wildland fires. As discussed in Section 3.2.22, the project area is primarily designated by the California Department of Forestry and Fire Protection's (known as CalFire) California Fire Hazard Severity Zone map as a high fire hazard severity zone with a portion passing through a very high fire hazard severity zone near Antelope Road. The project would not exacerbate wildfire risks. The expressway corridor, including shoulders and median, would be maintained regularly to ensure fuel quantities are low to reduce the possibility of a traveling vehicle starting a wildfire.

3.2.10 Hydrology and Water Quality

CEQA Significance Determinations for Hydrology and Water Quality

Would the project:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less Than Significant Impact—The project would be subject to the requirements of the Caltrans National Pollutant Discharge Elimination System permit, which regulates discharge of water pollutants in compliance with the Clean Water Act. Best management practices would be implemented during construction, and treatment best management practices are required. See Section 2.3.1 Water Quality and Storm Water Runoff.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

No Impact—The project does not have the potential to decrease groundwater supplies or interfere with groundwater recharge.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i) Result in substantial erosion or siltation onsite or offsite?

Less Than Significant Impact—Inclusion of construction site and permanent treatment Best Management Practices would effectively reduce erosion and siltation potential onsite and offsite.

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

Less Than Significant Impact—The project has been designed in accordance with Caltrans' and federal standards to design culvert crossings to convey the 100-year flood (1 percent probability).

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?

No Impact—All drainage systems are designed to convey the 100-year flood (1 percent probability) without objectionable backwater depths and velocities to prevent flooding of adjacent land.

iv) Impede or redirect flood flows?

Less Than Significant Impact—All drainage systems are designed to convey the 100-year flood (1 percent probability) without objectionable backwater depths and velocities to prevent flooding of adjacent land.

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

No Impact—The project is not within a flood hazard, tsunami, or seiche zone.

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

Less Than Significant Impact—The project does not have the potential to conflict with water quality control plans or sustainable groundwater

management plans. Construction activities have the potential to cause erosion and runoff of topsoil during construction, which could temporarily affect water quality in nearby waterways. Caltrans would prepare a Stormwater Pollution Prevention Plan to develop best management practices to follow during construction to minimize erosion and runoff.

3.2.11 Land Use and Planning

CEQA Significance Determinations for Land Use and Planning

Would the project:

a) Physically divide an established community?

No Impact—The project area is not zoned for residential use, and no residential properties exist in the vicinity; therefore, no impacts to established communities would occur.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact—The project is consistent with applicable land use plans, policies, and regulations. The project is one of many projects planned and included in the San Luis Obispo Council of Governments' 2014 and 2019 Regional Transportation Plans with the aim of reducing congestion and greenhouse gas emissions.

3.2.12 Mineral Resources

CEQA Significance Determinations for Mineral Resources

Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact—No known mineral resources exist within the vicinity of the project area.

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 known mineral resources exist within the vicinity of the project area.

3.2.13 Noise

CEQA Significance Determinations for Noise

Would the project result in:

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

No Impact—No sensitive receptors exist within the vicinity of the project area.

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

No Impact—No sensitive receptors exist within the vicinity of the project area.

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—The project is not within the vicinity of a private airstrip, airport land use plan, or public airport.

3.2.14 Population and Housing

CEQA Significance Determinations for Population and Housing

Would the project:

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact—No unplanned growth-inducing impacts are anticipated. No change in zoning to the land surrounding the project area is proposed; no new or additional driveways or access roads are proposed.

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

No Impact—There are no residential properties in the project vicinity, and no residences would be displaced as a result of construction of the project.

3.2.15 Public Services

CEQA Significance Determinations for Public Services

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire protection?

No Impact—The project would not induce the need for any new or altered fire protection services.

Police protection?

No Impact—The project would not induce the need for any new or altered police protection services.

Schools?

No Impact—The project would not induce the need for any new or altered schools.

Parks?

No Impact—The project would not induce the need for any new or altered park facilities or services.

Other public facilities?

No Impact—The project would not induce the need for any new or altered other public facilities.

3.2.16 Recreation

CEQA Significance Determinations for Recreation

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact—There are no parks and recreational facilities in the project vicinity.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact—The project does not include or require the development or expansion of recreational facilities.

3.2.17 Transportation

CEQA Significance Determinations for Transportation

Would the project:

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

No Impact—The project does not conflict with applicable program plans, ordinances, or policies.

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

No Impact—CEQA Guidelines Section 15064.3 subdivision (b) is inapplicable to this project. Level of Service was used to analyze traffic in the *2005 ND/FONSI*, and the findings remain valid.

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 hazards due to geometric design or incompatible uses are anticipated as a result of the project.

d) Result in inadequate emergency access?

No Impact—Access along existing State Route 46 would remain open as the proposed project alignment is constructed. A Transportation Management Plan would be prepared and implemented prior to construction to ensure access is allowed during construction.

3.2.18 Tribal Cultural Resources

CEQA Significance Determinations for Tribal Cultural Resources

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?

No Impact—No tribal cultural resources were identified within the project area.

b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

No Impact—No tribal cultural resources were identified within the project area.

3.2.19 Utilities and Service Systems

CEQA Significance Determinations for Utilities and Service Systems

Would the project:

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Less Than Significant Impact—Although the project has been designed to reduce utility conflicts to the maximum extent feasible, the project may require relocation of an existing utility pipeline as discussed in Section 2.2.4 Utilities. All utility relocations that are identified through project design will be reviewed and approved by Caltrans.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

No Impact—Water used during construction of the project for dust control would be used on a temporary basis and would be non-potable. No long-term or permanent use of water is proposed.

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—Not applicable; the project would not generate wastewater.

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—Project construction would not generate a substantial volume of solid waste. The project would comply with all federal, state, and local

statutes and regulations related to solid waste. Generated solid waste would be recycled when possible.

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

No Impact—No impacts on local solid waste facilities are expected. The project would comply with all federal, state, and local statutes and regulations related to solid waste. Generated solid waste would be recycled when possible.

3.2.20 Wildfire

CEQA Significance Determinations for Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact—The project area is primarily designated by the California Department of Forestry and Fire Protection's (known as CalFire) as a high fire hazard severity zone with a portion passing through a very high fire hazard severity zone. The proposed project includes the addition of one lane in each direction and increased shoulder width along State Route 46, which would still allow for travel through the area in the event of an emergency. The project would be constructed mostly off of the existing highway, and temporary closures are possible with no delay to emergency services during construction.

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?

Less Than Significant Impact—The project would not exacerbate wildfire risks. The expressway corridor, including shoulders and median, would be maintained regularly to ensure fuel quantities are low to reduce the possibility of a traveling vehicle starting a wildfire.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

No Impact—No additional infrastructure would be installed that would increase fire risk. Existing overhead power lines are south of the existing State Route 46 alignment and would not require relocation.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

No Impact—The project area is not in an area that is prone to landslides or flooding.

3.2.21 Mandatory Findings of Significance

CEQA Significance Determinations for Mandatory Findings of Significance

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less Than Significant Impact With Mitigation Incorporated—As discussed throughout this document, construction of the proposed project has the potential to degrade the quality of the environment without the incorporation of the identified mitigation measures. Impacts to visual resources, biological resources, and paleontological resources are anticipated as a result of the project. Implementing the avoidance, minimization, and mitigation measures described in Section 2.2.5 Visual/Aesthetics, Section 2.3.3 Paleontology, and Section 2.4 Biological Resources would ensure the project's impacts are less than significant. The project would not 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, or substantially reduce the number or restrict the range of a rare or endangered plant or animal.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

Less Than Significant Impact—Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of this proposed project. A cumulative impact assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor but collectively substantial impacts taking place over a period of time.

Cumulative impacts to visual resources, paleontological resources, and biological resources were analyzed in a Cumulative Impact Assessment and are discussed further in Section 2.5. Resources with potentially significant

impacts were assessed compared to a defined Resource Study Area, and other proposed projects were identified for evaluation of incremental changes. Few projects were identified within the Resource Study Areas due to the rural characteristics of the area, and projects that were identified contained appropriate avoidance, minimization, and mitigation measures. Environmental impacts that could occur as a result of the proposed project would be reduced to a less than significant level through implementation of the avoidance, minimization, and mitigation measures described in this document and would not be cumulatively considerable; the project would have less than significant cumulative impacts with the implementation of the mitigation measures discussed throughout this document.

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

Less Than Significant Impact With Mitigation Incorporated—Issue areas that may generally affect human beings discussed in this document include aesthetics, agricultural resources, air quality, cultural resources, energy, greenhouse gas emissions, hazards and hazardous materials, and wildfire. Through the incorporation of avoidance, minimization, and mitigation measures discussed in each section, impacts associated with construction and operation of the project would not cause direct or indirect adverse effects on human beings.

3.3 Wildfire

Regulatory Setting

Senate Bill 1241 required the Office of Planning and Research, the Natural Resources Agency, and the California Department of Forestry and Fire Protection to develop amendments to the “CEQA Checklist” for the inclusion of questions related to fire hazard impacts for projects located on lands classified as very high fire hazard severity zones. The 2018 updates to the CEQA Guidelines expanded this to include projects “near” these very high fire hazard severity zones.

Affected Environment

Based on the 2022 California Department of Forestry and Fire Protection’s (known as CalFire) California Fire Hazard Severity Zone map, the project is designated mostly as a high fire hazard severity zone, with a portion passing through a very high fire hazard severity zone near Antelope Road.

The project lies on State Route 46 in the northeastern portion of San Luis Obispo County and the northwestern portion of Kern County. The whole region is prone to potential wildfires due to its warm, dry climate and surrounding rural hillsides and mountains. Extensive cattle grazing on

surrounding private properties helps reduce the amount of ignitable vegetation.

Warm, dry summers and cool winters with occasional rainy periods characterize the Mediterranean climate of the project area. Maximum summer temperatures in the county average about 70 degrees Fahrenheit near the coast, while inland valleys closer to the project area are often in the high 90s. Minimum winter temperatures in the county range from the low 30s near the coast to the low 20s inland. The region is also subject to seasonal “Santa Ana” winds. These are typically hot, dry northerly winds that blow offshore at 15 to 20 miles per hour, but can reach speeds up to and over 60 miles per hour.

Climate and landscape characteristics are among the most important factors influencing hazard levels. Weather characteristics such as wind, temperature, humidity, and fuel moisture content affect the potential for fire. A fire typically burns faster and with more intensity when the air temperature is high, relative humidity is low, and winds are strong. Of the four weather characteristics, the wind is the dominant factor in spreading fire since burning embers can easily be carried with the wind to adjacent exposed areas, starting additional fires.

The Caltrans Climate Change Vulnerability Assessment for District 5 evaluates roads at risk for future wildfire. Areas that are more densely forested typically have the highest wildfire risk. Mapping of wildfire risk using the most conservative estimate shows the project area along State Route 46 is in an area designated as a moderate concern through the year 2085.

Environmental Consequences

The project would not change any planned or existing emergency response plans or emergency evacuation plans for the region. Long-term access through the area would be improved as a result of the project. Construction of the project would not disrupt access or travel on State Route 46 because two lanes of traffic in each direction would be maintained.

The project would not exacerbate wildfire risk because it is not expected to permanently alter existing wildfire conditions in the region. The project would not involve infrastructure work that would change the existing fire risk in the region.

Caltrans would ensure that the highway remains accessible for emergency response vehicles and emergency evacuation plans during project construction, though shoulder access may be limited. Temporary lane closures may be necessary, as discussed in Section 1.4.1, but these closures would be accounted for in the Transportation Management Plan.

Certain types of construction work have the potential to ignite a wildfire, such as grinding which creates sparks, or work involving electrical utilities.

Precautions would be taken to reduce fire risk from construction work as much as possible, and an emergency water supply would be kept onsite throughout the duration of the project. Prior to construction, vegetation would be cleared in a manner that would minimize fire risk while avoiding harm to the biological environment. The project would incorporate precautions to prevent fire-related incidents during construction as part of the code of safety practices in accordance with the California Division of Occupational Safety and Health–Fire Protection and Prevention Guidance.

The project would also include Caltrans standard measures referenced in Section 1.6, including a fire prevention plan that would be carried out during project construction.

Avoidance, Minimization, and/or Mitigation Measures

No measures are proposed.

3.4 Climate Change

Climate change was not discussed in the 2005 ND/FONSI because the document was completed prior to the implementation of Senate Bill 743. The following discussion is based on the Climate Change Report dated June 2023.

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the Earth's climate system. The Intergovernmental Panel on Climate Change, established by the United Nations and World Meteorological Organization in 1988, is devoted to greenhouse gas emissions reduction and climate change research and policy. Climate change in the past has generally occurred gradually over millennia, or more suddenly in response to cataclysmic natural disruptions. The research of the Intergovernmental Panel on Climate Change and other scientists over recent decades, however, has unequivocally attributed an accelerated rate of climatological changes over the past 150 years to greenhouse gas emissions generated from the production and use of fossil fuels.

Human activities generate greenhouse gas emissions consisting mostly of carbon dioxide, methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, and various hydrofluorocarbons. Carbon dioxide is the most abundant greenhouse gas; while it is a naturally occurring and necessary component of Earth's atmosphere, fossil-fuel combustion is the main source of additional human-generated carbon dioxide that is the main driver of climate change. In the U.S. and in California, transportation is the largest source of greenhouse gas emissions, mostly carbon dioxide.

Greenhouse gas emissions from transportation projects can be divided into those produced during operation and use of the State Highway System (operational emissions) and those produced during project construction (construction emissions). The main greenhouse gas emissions produced by the transportation sector are carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons. Carbon dioxide emissions are a product of burning gasoline or diesel fuel in internal combustion engines, along with relatively small amounts of methane and nitrous oxides. A small amount of hydrofluorocarbons emissions related to refrigeration is also included in the transportation sector. The term “Carbon Dioxide Equivalent” is a measure of various greenhouse gas emissions based on their global warming potential and typically includes emissions from carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons.

The CEQA Guidelines generally address greenhouse gas emissions as a cumulative impact due to the global nature of climate change (Public Resources Code, Section 21083(b)(2)). As the California Supreme Court explained, “because of the global scale of climate change, any one project's contribution is unlikely to be significant by itself” (Cleveland National Forest Foundation v. San Diego Assn. of Governments (2017) 3 Cal.5th 497, 512). In assessing cumulative impacts, it must be determined if a project’s incremental effect is “cumulatively considerable” (CEQA Guidelines Sections 15064(h)(1) and 15130).

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

The impacts of climate change are already being observed in the form of sea level rise, drought, extended and severe fire seasons, and historic flooding from changing storm patterns. The most important strategy to address climate change is to reduce greenhouse gas emissions. Additional strategies are necessary to mitigate and adapt to these impacts. In the context of climate change, “mitigation” involves actions to reduce greenhouse gas emissions to lessen adverse impacts that are likely to occur. “Adaptation” is planning for and responding to impacts to reduce vulnerability to harm, such as by adjusting transportation design standards to withstand more intense storms, heat, and higher sea levels. This analysis will include a discussion of both in the context of this transportation project.

3.4.1 Regulatory Setting

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

Federal

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

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

The Federal Highway Administration recognizes the threats that extreme weather, sea-level change, and other changes in environmental conditions pose to valuable transportation infrastructure and those who depend on it. The Federal Highway Administration therefore supports a sustainability approach that assesses vulnerability to climate risks and incorporates resilience into planning, asset management, project development and design, and operations and maintenance practices. This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values—"the triple bottom line of sustainability." 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.

The federal government has taken steps 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 United States Code Section 6201) as amended by the Energy Independence and Security Act of 2007; and Corporate Average Fuel Economy Standards. This act established fuel economy standards for on-road motor vehicles sold in the United States. The U.S. Department of Transportation's National Highway Traffic and Safety Administration sets and enforces the Corporate Average Fuel Economy Standards based on each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the United States. The Environmental Protection Agency calculates average fuel economy levels for manufacturers, and also sets related greenhouse gas emissions standards under the Clean Air Act. Raising Corporate Average Fuel Economy Standards leads automakers to create a more fuel-efficient fleet, which improves our nation's energy security, saves consumers money at the pump, and reduces greenhouse gas emissions.

The Environmental Protection Agency published a final rulemaking on December 30, 2021, that raised federal greenhouse gas emissions standards for passenger cars and light trucks for model years 2023 through 2026, increasing in stringency each year. The updated standards will avoid more than 3 billion tons of greenhouse gas emissions through 2050. In April 2022, the National Highway Traffic and Safety Administration announced

corresponding new fuel economy standards for model years 2024 through 2026, which will reduce fuel use by more than 200 billion gallons through 2050 compared to the old standards and reduce fuel costs for drivers.

State

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

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

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

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

Executive Order B-30-15 (April 2015): This order establishes an interim statewide greenhouse gas emission reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050. It further orders all state agencies with jurisdiction over sources of greenhouse gas emissions to implement measures, pursuant to statutory authority, to achieve reductions of greenhouse gas emissions to meet the 2030 and 2050 greenhouse gas emissions reductions targets. It also directs the California Air Resources Board to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent. Greenhouse gases differ in how much heat each traps in the atmosphere, called global warming potential. Carbon dioxide is the most important

greenhouse gas, so amounts of other gases are expressed relative to carbon dioxide, using a metric called “carbon dioxide equivalent.” The global warming potential of carbon dioxide is assigned a value of 1, and the global warming potential of other gases is assessed as multiples of carbon dioxide. Finally, it requires the Natural Resources Agency to update the state’s climate adaptation strategy, *Safeguarding California*, every 3 years, and to ensure that the strategy’s provisions are fully implemented.

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

Senate Bill 1386, Chapter 545, 2016: This bill 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.”

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

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

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

Assembly Bill 1279, Chapter 337, 2022, The California Climate Crisis Act: This bill mandates carbon neutrality by 2045 and establishes an emissions reduction target of 85 percent below 1990 level as part of that goal. This bill solidifies a goal included in Executive Order B-55-18. It requires the California Air Resources Board to work with relevant state agencies to ensure that updates to the scoping plan identify and recommend measures to achieve these policy goals and to identify and implement a variety of policies and strategies that enable carbon dioxide removal solutions and carbon capture, utilization, and storage technologies in California, as specified.

3.4.2 Affected Environment

Meteorology

The project footprint lies mostly within the South Central Coast Air Basin in San Luis Obispo County, with less than 0.5 mile of the project reaching into the San Joaquin Valley Air Basin in Kern County. The climate of the San Luis Obispo area is strongly influenced by its proximity to the Pacific Ocean. Warm, dry summers and cool winters with occasional rainy periods characterize the Mediterranean climate of the project area. Maximum summer temperatures in the county average about 70 degrees Fahrenheit near the coast, while inland valleys are often in the high 90s. Minimum winter temperatures in the county range from the low 30s near the coast to the low 20s inland.

Rainfall amounts can vary considerably among different regions in the county. In the Coastal Plain, annual rainfall averages 16 to 28 inches, while the Upper Salinas River Valley generally receives about 12 to 20 inches of rain. The Carrizo Plain is the driest area of the county, with less than 12 inches of rain in a typical year. About 90 percent of the total annual rainfall is received from November through April. Winter conditions are usually mild, with intermittent periods of precipitation followed by mostly clear days.

Airflow around the region plays an important role in the movement and dispersion of pollutants. The speed and direction of local winds are controlled by the location and strength of the Pacific high-pressure system and other global weather patterns, topographical factors, and circulation patterns that result from temperature differences between the land and the sea.

The region is also subject to seasonal “Santa Ana” winds. These are typically hot, dry northerly winds that blow offshore at 15 to 20 miles per hour but can reach speeds up to and over 60 miles per hour. In fall and winter during Santa Ana wind conditions in Southern California, pollutants may accumulate over the ocean for a period of one or more days and can then be carried onshore with the return of the sea breeze, where they combine with local emissions to cause high pollutant concentrations along the Central Coast. Strong inversions can form at any time, and can trap pollutants near the surface, which can result in an increase in pollutant concentrations at nearby monitoring stations.

Traffic Conditions

The proposed project is in a rural area at the eastern edge of San Luis Obispo County and western edge of Kern County, where the State Route 46 corridor connects the Central Valley with the Central Coast. The project spans from post mile 57.3 to post mile 60.8 in San Luis Obispo County and post mile 0.0 to post mile 0.4 in Kern County. State Route 46 is a rural two-lane highway with short passing lanes on a portion of the eastbound and

westbound approach to the grade. Agriculture and open space dominate the landscape.

State Route 46 is the main transportation route to and through the area for both passenger and commercial vehicles. The nearest alternate routes are State Route 41 to the north, State Route 58 to the south, and State Route 166 to the south. State Route 58 and State Route 166 are not as frequently traveled due to steep topography and more curves.

This area does not see a high number of commuters that would cause typical directional “rush hour” traffic. Traffic is mostly interregional, serving a substantial number of recreational visitors and a high level of goods movement to and from the Central Valley. Peak hour is defined as the interval of time during which the average daily traffic is heaviest. Peak-hour traffic congestion has diminished substantially within the other widened sections along State Route 46 since improvements were constructed. The remaining two-lane section of the corridor at Antelope Grade continues to experience peak-hour congestion at varying times depending on the day of the week. Traffic tends to be the heaviest on Friday and Monday in the winter months and Friday, Saturday, Sunday, and Monday during the summer months, as shown in Table 1-1 in Section 1.2.3 Traffic Congestion.

Level of Service is a rating in the Highway Capacity Manual that takes into account factors such as travel speed, freedom to maneuver, and proximity to other vehicles as important parameters in determining a ranking of “A” through “F,” with “A” indicating free flow of traffic and “F” indicating the most congested conditions.

In 2021, the Caltrans Division of Traffic Operations analyzed the Level of Service rating within the project limits with and without construction of the proposed project, as shown in Table 1-2 in Section 1.2.3 Traffic Congestion. The Level of Service is currently ranked at “E,” indicating that driving conditions are at or near capacity with most time spent following other drivers and nearly no safe passing opportunities. Speeds at this ranking average less than or equal to 40 miles per hour with significant delays. Construction of the proposed Build Alternative would increase that ranking to an “A.” An “A” ranking indicates traffic is free flowing with safe passing opportunities and speeds average 55 miles per hour or greater.

The annual average daily traffic count within the project limits increased from the analysis in the *2005 ND/FONSI* from an average of 7,000 vehicles per day in 2002 to 8,550 vehicles per day in the 2019 Baseline year. Of this, about 29 percent of the traffic volume are trucks and 66 percent of the trucks are 5-axle and larger. This is approximately three times the normal (10 percent) levels recommended for a two-lane conventional highway. The

projected annual average daily traffic count is 14,034 for the design year 2046, which represents an increase of 64 percent in traffic over 27 years.

Tractor-trailers and other heavy vehicles are slowed significantly when climbing the steep grades along the corridor leading to queueing (long lines of traffic) and delays for users. The existing corridor has limited facilities for passing the slow-moving vehicles, and for much of the day there are insufficient gaps in oncoming traffic to pass slower traffic in the passing zones along the existing route. Impatient drivers often take unnecessary risk as they attempt to pass slower vehicles by using the opposite lane, and distracted drivers may inadvertently drift into oncoming traffic.

Regional Plans

The project sits between San Luis Obispo and Kern counties. San Luis Obispo Council of Governments and Kern Council of Governments guide transportation development in the area. These two organizations have partnered to focus on improving the State Route 46 corridor and leverage funding for improvements.

The California Air Resources Board sets regional greenhouse gas reduction targets for California's 18 metropolitan planning organizations to achieve. The board does this by planning future projects that will cumulatively achieve those goals and reporting how they will be met in the Regional Transportation Plan/Sustainable Communities Strategy. Targets are set at a percentage reduction of passenger vehicle greenhouse gas emissions per person from 2005 levels. The proposed project is included in the Regional Transportation Plan/Sustainable Communities Strategy for the San Luis Obispo Council of Governments and the Kern Council of Governments. The regional reduction target for the San Luis Obispo Council of Governments is a 3 percent per capita reduction (relative to 2005) for 2020 and an 11 percent reduction for 2035. The regional reduction target for the Kern Council of Governments is a 9 percent per capita reduction for 2020 and 15 percent for 2035.

The Kern Council of Governments indicates in its 2022 Regional Transportation Plan/Sustainable Communities Strategy that a partnership was formed with the San Luis Obispo Council of Governments to implement improvements and support funding opportunities for the State Route 46 corridor. Future projects will be carried out by the San Luis Obispo Council of Governments as most of the improvements in Kern County have been made already or are in construction. Therefore, this analysis focuses mostly on the San Luis Obispo Council of Governments' planning documents.

The project is included in the San Luis Obispo Council of Governments' 2014 fiscally constrained Regional Transportation Plan/Sustainable Communities Strategy, where it is described as "a statewide priority to ensure safe and efficient passage for travelers and commodity moving between the Central Valley and the Central Coast." The 2014 San Luis Obispo Council of

Governments' Regional Transportation Plan/Sustainable Communities Strategy indicates that it is the most important east-west route in the region, and it remains a priority corridor in the 2019 Regional Transportation Plan/Sustainable Communities Strategy. The Regional Transportation Plan reflects a wide spectrum of sustainability objectives as part of long-range planning efforts. The project is included in the Regional Transportation Plan and therefore is one of many projects planned in combination to reduce congestion and greenhouse gas emissions.

In June 2015, the California Air Resources Board established that full implementation of the San Luis Obispo Council of Governments 2014 Regional Transportation Plan/Sustainable Communities Strategy would achieve the greenhouse gas emissions reduction targets that the California Air Resources Board established for the region. The 2015 addendum to the 2014 Regional Transportation Plan/Sustainable Communities Strategy Environmental Impact Report notes that "strategies and investments in the 2014 Regional Transportation Plan/Sustainable Communities Strategy result in a projected 9.43 percent reduction by 2020 and a 10.91 percent reduction by 2035." These reductions exceed the California Air Resources Board 2018 reduction targets (relative to 2005) for San Luis Obispo Council of Governments of 8 percent by both 2020 and 2035.

The 2019 Regional Transportation Plan/Sustainable Communities Strategy identifies goals and policies to focus in on during transportation planning and decision making, including maintaining and maximizing the efficiency of the existing transportation system, reducing fatalities and collisions, reducing congestion, reducing greenhouse gas emissions from vehicles and improving air quality in the region, and enhancing economic activity, travel and tourism. Two key strategies used by the San Luis Obispo Council of Governments include funding projects designed to reduce congestion in highly traveled and highly congested corridors and giving high priority to fund improvements that reduce or mitigate areas of recurring accidents and congestion and for improvements that maximize overall system connectivity and efficiency.

The San Luis Obispo County General Plan, Conservation and Open Space Element, includes air quality goals to improve local and regional air quality and help reduce global climate change.

Also, the 2014 Regional Transportation Plan and the 2019 Regional Transportation Plan include goals, policies, and strategies to improve transportation efficiency, thereby reducing greenhouse gas emissions. Table 3-1 summarizes goals, policies, and strategies that apply to the project area.

Table 3-1 Regional and Local Greenhouse Gas Reduction Policies

Title	Greenhouse Gas Reduction Policies or Strategy
San Luis Obispo Council of Governments 2019 Regional Transportation Plan/Sustainable Communities Strategy	• Highways, Streets, and Roads Action Item 1: Fund projects designed to reduce congestion in highly traveled and highly congested corridors (state highways system, local streets and roads, public transit and rail facilities, bicycle and pedestrian facilities) through performance. • Highways, Streets, and Roads Action Item 2: Give a high priority to fund improvements that reduce or mitigate areas of recurring accidents and congestion and for improvements that maximize overall system connectivity and efficiency. • Freight/Commodity Movement Action Item 1: Improve the efficiency of the transportation system and minimize the adverse impact of commodity movement throughout the region.
San Luis Obispo Council of Governments 2014 Regional Transportation Plan/Sustainable Communities Strategy	• SCS Policy 1: Improve mobility through a combination of strategies and investments to accommodate anticipated growth in transportation demand and reduce current and projected levels of congestion. • OTS Policy 3. Efficiency: Maximize the efficiency of the existing transportation system. • Highways, Streets, and Roads Policy 3: Place higher emphasis on assessing and programming funding for improvements that maximize overall system connectivity and efficiency. • Highways, Streets, and Roads Policy 4: Give a high priority to fund improvements to highways, streets, and roadway facilities to reduce or mitigate areas of recurring accidents and congestion. • Highways, Streets, and Roads Policy 7: Work with Caltrans and local jurisdictions to include socially and environmentally sensitive design, routing, and maximum feasible mitigation of impacts in all roadway construction considering the following highway route concept improvements: State Route 46 East between U.S. 101 and the east junction of State Route 41 and 46: four-lane expressway standards in segments as necessary to meet capacity needs and as funding becomes available. • Commodity Movement Policy 2: Improve the efficiency of the transportation system and minimize the adverse impact of commodity movement throughout the region. • Commodity Movement Policy 1: Work with local jurisdictions and Caltrans to improve truck routes and facilities to maximize their safe use by large trucks and prioritize construction of the following projects, including widening of State Route 46 East to four lanes from the Shandon Roadside Rest Stop to the County Line.
San Luis Obispo County General Plan	• Goal AQ-4 emphasizes a reduction in greenhouse gas emissions from County operations and community-wide sources by a minimum of 15 percent from 2006 baseline emissions by 2020. • Policy AQ-1.5 — improve transportation efficiency. • AQ 1.7— encourage bicycle and pedestrian use. • AQ 1.9 — encourage use of railways as an alternative to trucking materials. • AQ 3.7 – reduce vehicle idling.

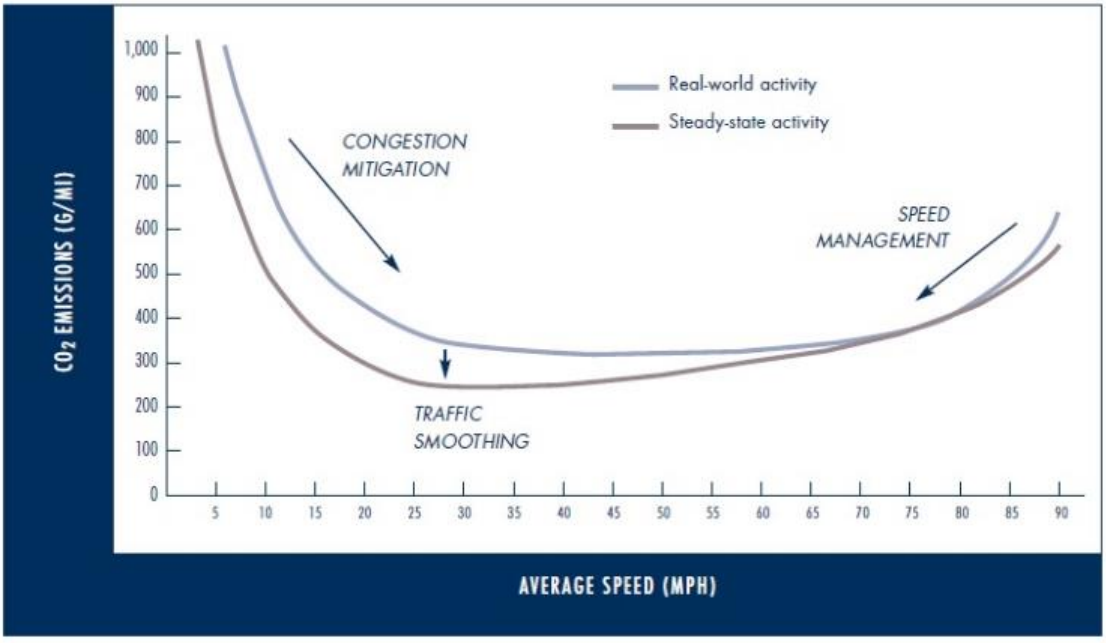
3.4.3 Environmental Consequences

Operational Emissions

Carbon dioxide from fossil fuel combustion is the largest component of greenhouse gas emissions in the United States, and transportation is the largest contributor of carbon dioxide. The highest levels of carbon dioxide from mobile sources such as automobiles occur at stop-and-go speeds (0 to 25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0 to 25 miles per hour (see Figure 3-1). To the extent that a project enhances operational efficiency and improves travel times in high-congestion travel corridors, greenhouse gas emissions, particularly carbon dioxide, may be reduced, provided that improved travel times do not induce additional travel.

Four main strategies can reduce greenhouse gas emissions from transportation sources: (1) improving the transportation system and operational efficiencies, (2) reducing travel activity (e.g. vehicle miles travelled), (3) transitioning to lower greenhouse gas emitting fuels, and (4) improving vehicle technologies and efficiency. To be most effective, all four strategies should be pursued concurrently.

Figure 3-1 Possible Use of Traffic Operation Strategies in Reducing On-Road Carbon Dioxide Emissions



The proposed project would increase the number of lanes on State Route 46 from two lanes to four lanes (two lanes in each direction). The annual average daily traffic count for the 2019 Baseline year is approximately 8,550 vehicles and the 2046 Design Year is anticipated to reach 14,034 vehicles. The design

speed is proposed to increase from 55 miles per hour to 65 miles per hour to be consistent with the other sections along State Route 46.

The CT-EMFAC 2017 model is used to support the California Air Resources Board's regulatory and air quality planning efforts and to meet the Federal Highway Administration's transportation planning requirements. Emission factors were adjusted to account for the Final Safer Affordable Fuel-Efficient Vehicle Rule for carbon dioxide emissions. The most recent model used peak-hour traffic data and emissions factors to calculate carbon dioxide emissions for the Baseline (2019), Build Alternative 2046, and No-Build Alternative 2046. The results of the modeling are summarized in Table 3-2.

Table 3-2 Modeled Greenhouse Gas Emission Estimates

Scenario	Carbon Dioxide Equivalent (U.S. tons per day)	Carbon Dioxide Equivalent (metric tons per year)
Existing 2019 Baseline	14.10	4,670
Design Year 2046 No-Build Alternative	22.21	6,534
Design Year 2046 Build Alternative	23.42	6,890

As shown in Table 3-2, greenhouse gas emissions are expected to increase by the year 2046 due to the increase in number of vehicles on the road compared to the 2019 Baseline in either the Build Alternative or No-Build Alternative. The number of vehicles traveling on State Route 46 are expected to increase as population growth in the Central Valley and Central Coast continues. The annual average daily traffic count for the 2019 Baseline year is approximately 8,550 vehicles, and the 2046 Design year is anticipated to reach 14,034 vehicles, which represents a 64 percent increase in vehicles. The corresponding estimated greenhouse gas emissions between the 2019 Baseline and the 2046 Design year are expected to increase at a slower rate compared to the population growth: approximately 40 percent for the No-Build Alternative or 47 percent for the Build Alternative.

The greenhouse gas emission estimates for the 2046 Build Alternative and the 2046 No-Build Alternative are similar, though the Build Alternative is approximately 5 percent higher. The small increase in anticipated carbon dioxide emissions between the 2046 Build Alternative and 2046 No-Build Alternative is mainly related to the proposed project's increase in design vehicle speed. The optimum speed for fuel efficiency is 55 miles per hour. The proposed project includes raising the design speed for the four-lane expressway to 65 miles per hour. This contributes to slightly lower fuel efficiency and a slight increase in modeled carbon dioxide emissions.

The proposed project is one of many projects planned and included in the San Luis Obispo Council of Governments' 2014 and 2019 Regional Transportation Plans with the aim of reducing congestion and greenhouse emissions. The San Luis Obispo Council of Governments has prioritized funding projects designed to reduce congestion in highly traveled and congested corridors to maximize overall system connectivity, efficiency, and safety. The Final Environmental Impact Report concludes that implementation of projects included in the 2019 Regional Transportation Plan would not result in a net increase in greenhouse gas emissions or result in a significant impact on the environment.

The California Air Resources Board developed the EMission FACtors (EMFAC) model to facilitate preparation of statewide and regional mobile source emissions inventories. The model generates emissions rates that can be multiplied by vehicle activity data from all motor vehicles, including passenger cars to heavy-duty trucks, operating on highways, freeways, and local roads in California. EMFAC has a rigorous scientific foundation, has been approved by U.S. Environmental Protection Agency, and has been vetted through multiple stakeholder reviews. Caltrans developed CT-EMFAC to apply project-specific factors to the California Air Resources Board model.

EMFAC's greenhouse gas emission rates are based on tailpipe emissions test data, and the model does not account for factors such as the rate of acceleration and vehicle aerodynamics, which influence the amount of emissions generated by a vehicle. Greenhouse gas emissions quantified using CT-EMFAC are therefore estimates and may not reflect actual on-road emissions. Furthermore, the model does not account for induced travel. Modeling greenhouse gas emissions estimates with the model nevertheless remains the most precise means of estimating future greenhouse gas emissions. While CT-EMFAC is currently the best available tool for calculating greenhouse gas emissions from mobile sources, it is important to note that the greenhouse gas results are only useful for a comparison of alternatives. Federal Corporate Average Fuel Economy and greenhouse gas emissions standards continue to evolve, and models will be updated to account for regulatory changes.

Construction Emissions

Construction greenhouse gas emissions would result from material processing, onsite construction equipment, and traffic delays due to construction. These emissions would 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. The grading quantities of cut and fill volumes were balanced to reduce the need for transport of earthen materials, thus reducing truck trips and subsequent greenhouse gas emissions.

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

Construction greenhouse gas emissions were estimated using Caltrans' Construction Emissions Tool. The estimated carbon dioxide emissions would be approximately 828 tons per year or a total of approximately 2,483 tons generated over a period of about 500 days for project construction.

All construction contracts include Caltrans Standard Specifications Section 7-1.02A and 7-1.02C, Emissions Reduction, which require contractors to comply with all laws applicable to the project and to certify they are aware of and will comply with all the California Air Resources Board emission reduction regulations, and Section 14-9.02, Air Pollution Control, which requires contractors to comply with all air pollution control rules, regulations, ordinances, and statutes. Certain common regulations, such as equipment idling restrictions, that reduce construction vehicle emissions also help reduce greenhouse gas emissions.

The project will also implement Caltrans standardized measures (such as construction best management practice) that apply to most or all Caltrans projects. Certain common regulations, such as equipment idling restrictions and development and implementation of a traffic control plan that reduce construction vehicle emissions, also help reduce greenhouse gas emissions. These measures are discussed in Section 3.2.3 Air Quality and Section 2.2.7 Energy.

Conclusion

Estimated operational greenhouse gas emissions resulting from the 2046 Build Alternative are approximately 5 percent higher than the 2046 No Build Alternative using the Caltrans' Construction Emissions Tool. Although a slight increase in operational greenhouse gas emissions was estimated, with the implementation of greenhouse gas reduction measures listed in the following section, impacts to climate change would be less than significant.

Avoidance and minimization measures to reduce greenhouse gas emissions will be applied to the project and are discussed in the following section. Also, a variety of influences including regulatory requirements and technological advances are expected to improve vehicle efficiency and transition away from fossil fuels in the future. It should also be noted that California's legislative greenhouse gas reduction standards imposed on automobile manufacturers and automotive fuel mixtures would further reduce the annual greenhouse gas emissions per capita produced in San Luis Obispo County (San Luis Obispo Council of Governments 2019 Regional Transportation Plan Environmental Impact Report).

Peak-hour traffic congestion has diminished substantially within the other widened sections along State Route 46 since improvements were constructed. It is anticipated that traffic congestion would improve significantly as a result of this project, raising the Level of Service from an “E” currently to an “A.” Also, according to the 2022 Fuel Economy Guide published by the U.S. Environmental Protection Agency and the U.S. Department of Energy, aggressive driving (speeding and rapid acceleration/braking) can lower gas mileage by roughly 15 to 30 percent at highway speeds and 10 to 40 percent in stop-and-go traffic. The project is expected to relieve stop-and-go traffic conditions and reduce the need for aggressive driving, such as passing slower vehicles.

The project does not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. The widening of State Route 46 to the Kern County line is supported in the 2014 Regional Transportation Plan and 2019 Regional Transportation Plan. The Environmental Impact Report for the 2014 and 2019 Regional Transportation Plans indicates in Impact GHG-1 that implementation of the capital improvement projects included in the 2014 and 2019 Regional Transportation Plans would not result in a net increase of greenhouse gas emissions that would conflict with the goals of Assembly Bill 32 or result in a significant impact on the environment.

3.4.4 Avoidance, Minimization, and/or Mitigation Measures

The application of the minimization measures below and the minimization measures listed in the Air Quality and Energy sections above, as well as following Caltrans Standard Specifications Section 14-9 for Air Quality, would reduce greenhouse gas emissions and potential climate change impacts from the project.

Minimization Measure GHG 1 – Caltrans staff will enhance the environmental training provided for contractor staff by adding a module on greenhouse gas emissions reduction strategies, including limiting equipment idling time as much as possible.

Minimization Measure GHG 2 – The project would revegetate previously undisturbed areas, where applicable, following construction completion. Landscaping reduces surface warming and, through photosynthesis, removes carbon dioxide from the atmosphere.

Chapter 4 Comments and Coordination

Agencies formally or informally contacted and consulted during the preparation of this Subsequent Initial Study with Proposed Mitigated Negative Declaration/Updated Environmental Assessment include the following:

California Department of Fish and Wildlife

California Department of Forestry and Fire Protection

California Department of Conservation

California Native American Heritage Commission

California Transportation Commission

Native American Consultation

Natural Resources Conservation Service

Central Coast Regional Water Quality Control Board

San Luis Obispo County Planning Department

Shandon Advisory Council

State Water Resources Control Board

U.S. Army Corps of Engineers

U.S. Bureau of Land Management

Chapter 5 List of Preparers

This document was prepared by the following Caltrans District 5 staff:

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Damon Haydu, Associate Environmental Planner (Archaeology). M.A., Cultural Resource Management, California State University, Sonoma; 20 years of experience in cultural resource management. Contribution: Prepared Supplemental Historical Property Survey Report and Supplemental Archaeological Survey Report.

Krista Kiaha, Senior Environmental Planner. Bachelor of Sciences, Anthropology, University of California, Santa Cruz; Master of Sciences, Anthropology, Idaho State University; more than 20 years of cultural resource management experience. Contribution: Review of Historic Properties Survey Report.

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Daniel Leckie, Environmental Scientist/PQS Principal Architectural Historian. M.S., Historic Preservation, The University of Vermont (2014); B.A., American History and Sociology, State University of New York (SUNY) at Stony Brook (2010); over 9 years of experience in the fields of Architectural History and Historic Preservation Planning. Contribution: Principal Architectural Historian.

Karl Mikel, Senior Transportation Engineer. B.S., Environmental Engineering, M.S., Civil/Environmental Engineering, California Polytechnic State University, San Luis Obispo; 17 years of engineering experience. Contribution: Oversight of preparation of technical studies, including Air Quality, Paleontology, Hazardous Waste, Noise, and Water Quality Studies.

Amy Millan, Senior Environmental Scientist (Specialist). B.S., Ecology and Systematic Biology, California Polytechnic State University, San Luis Obispo; 18 years of experience in California biology, wildlife and habitat studies, management, and monitoring. Contribution: Supplemental Natural Environment Study.

Margaret Perry, Senior Environmental Scientist (Aquatic Resource Biologist Leadworker). B.S., Soil Science, California Polytechnic State University, San Luis Obispo; 17 years of experience in California biology and habitat studies, emphasizing botany, wetland science, permitting, and environmental compliance. Contribution: Supplemental Natural Environment Study and Jurisdictional Delineation.

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Kaya Wiggins, Associate Environmental Planner (Archaeology). M.A., Applied Anthropology, Humboldt State University, Arcata; B.S., Anthropology and Geography, California Polytechnic State University, San Luis Obispo; 10 years of experience in cultural resource management. Contribution: Prepared Supplemental Historical Property Survey Report and Supplemental Archaeological Survey Report.

Jason Wilkinson, Acting Deputy District Director of Environmental Analysis. B.S., Natural Resource Management, Minor in Geographical Information System (GIS), California Polytechnic State University, San Luis Obispo; 16 years of environmental planning experience. Contribution: Supervised the preparation of the Subsequent Mitigated Negative Declaration/Updated Environmental Assessment.

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Autumn Wycoff, Stormwater Coordinator. B.S., Civil Engineering, Georgia Institute of Technology; 20 years of experience in Construction/Civil Engineering. Contribution: Preparation of Storm Water Data Report and review of Water Quality Assessment.

Chapter 6 Distribution List

The Subsequent Initial Study/Updated Environmental Assessment was sent to the following agencies and individuals for review and comment:

Political Representatives

United States Senator Dianne Feinstein

United States Senator Alex Padilla

United States Congressman Jimmy Panetta (19th Congressional District)

United States Congressman David G. Valadao (22nd Congressional District)

California State Senator John Laird (17th Senate District)

California State Assemblywoman Dawn Addis (30th Assembly District)

California State Assemblyman Jasmeet Bains (35th Assembly District)

Federal Agencies

United States Army Corps of Engineers

United States Fish and Wildlife Service

United States Bureau of Land Management

United States Department of Interior, Office of Environmental Policy and Compliance

Natural Resources Conservation Service

State Agencies

California Air Resources Board

California Department of Conservation

California Department of Fish and Wildlife

California Department of Forestry and Fire Protection – Shandon Station 51

California Department of Water Resources

California Highway Patrol - Templeton

California Native American Heritage Commission

California Natural Resources Agency

California State Clearinghouse

California Transportation Commission

Central Coast Regional Water Quality Control Board

State Water Resources Control Board

County Agencies

San Luis Obispo County Air Pollution Control District

San Luis Obispo County Planning and Building Department

San Luis Obispo County Public Works

San Luis Obispo County Clerk-Recorder's Office

San Luis Obispo County Board of Supervisors

San Luis Obispo Council of Governments

San Joaquin Valley Unified Air Pollution Control District

Kern County Planning and Natural Resources Department

Kern County Public Works

Kern County Office of the County Clerk

Kern County Board of Supervisors

Kern Council of Governments

City Agency

Paso Robles City Planning Department

Native American Contact List for Section 106 Consultation

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Violet Walker, Northern Chumash Tribal Council

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Patti Dunton, Salinan Tribe of Monterey, San Luis Obispo Counties

Leo Sisco, Santa Rosa Rancheria Tachi Yokut Tribe

Nakia Zavalla, Santa Ynez Band of Chumash Indians

Wendy Teeter, Santa Ynez Band of Chumash Indians

Kelsie Shroll, Santa Ynez Band of Chumash Indians

Sam Cohen, Santa Ynez Band of Chumash Indians

Neil Peyron, Tule River Indian Tribe

Penny Hurt, Xolon-Salinan Tribe

Karen White, Xolon-Salinan Tribe

Mona Tucker, yak tityu tityu yak tiłhini – Northern Chumash Tribe

Other

Shandon Advisory Council

Phillips 66

Kevin Johnston

Property owners affected by the proposed project

Appendix A Title VI/Non-Discrimination Policy Statement

CALIFORNIA STATE TRANSPORTATION AGENCY

GAVIN NEWSOM, GOVERNOR

California Department of Transportation

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September 2022

NON-DISCRIMINATION POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964, ensures *"No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance."*

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To obtain this information in an alternate format such as Braille or in a language other than English, please contact the California Department of Transportation, Office of Civil Rights, at PO Box 942874, MS-79, Sacramento, CA 94274-0001; (916) 879-6768 (TTY 711); or at Title.VI@dot.ca.gov.

TONY TAVARES
Director

"Provide a safe and reliable transportation network that serves all people and respects the environment"

Appendix B Avoidance, Minimization and/or Mitigation Summary

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

This section contains a discussion of measures from the 2005 ND/FONSI in each relevant heading. Some measures from the 2005 ND/FONSI are no longer relevant or applicable and have been removed from the project. Some measures have been replaced with similar or updated language and are so indicated.

2.2.2 Farmland

The following measures are proposed to further minimize impacts to agriculture and farmland resources:

Minimization Measure AG-1 – The proposed project shall limit the amount of new right-of-way acquisition from adjacent farmland properties and only acquire new right-of-way necessary for project completion.

Minimization Measure AG-2 – Infill materials to be used in the project shall not be obtained from borrow sites comprised of prime agricultural soils.

Minimization Measure AG-3 – Construction activities would be coordinated with local farmland operations to ensure that access to adjacent farmland properties is maintained during project construction.

2.2.5 Visual/Aesthetics

The measures in the *2005 ND/FONSI* have been replaced with the following measures to reduce adverse effects to visual resources. Also, native tree replacement, soil salvage requirements, use of native seed mixes, and erosion control and stormwater runoff control measures are discussed in the Biological Resources and Water Quality and Stormwater Runoff sections.

Mitigation Measure AES 1 – Preserve as much existing vegetation as possible. Prescriptive clearing and grubbing and grading techniques which save the most existing vegetation possible shall be employed.

Mitigation Measure AES 2 – Revegetate all disturbed areas with native plant species appropriate to each specific work location.

Mitigation Measure AES 3 – Replacement planting shall include aesthetic considerations as well as the inherent biological goals. Revegetation shall include native trees and plants as determined by Caltrans District 5 Biology and Landscape Architecture. Revegetation shall occur at the maximum extent horticulturally viable and maintained until established.

Mitigation Measure AES 4 – All visible concrete drainage elements including but not limited to headwalls, drain inlet aprons, etc. should be colored to blend with the surroundings and reduce reflectivity. The specific colors of these concrete elements shall be determined by Caltrans District 5 Landscape Architecture.

Mitigation Measure AES 5 – All visible metal drainage components related to down drains and inlets, including but not limited to flared end sections, connectors, anchorage systems, safety cable systems, etc., should be darkened or colored to blend with the surroundings and reduce reflectivity. The specific color shall be determined by Caltrans District 5 Landscape Architecture.

Mitigation Measure AES 6 – The Type 842 Bridge Barrier and related components shall be colored and/or darkened to blend with the natural setting. The specific color shall be determined by Caltrans District 5 Landscape Architecture.

Mitigation Measure AES 7 – All metal roadside elements associated with the bridges including but not limited to guardrail, guardrail transitions, and end treatments shall be stained or darkened to be visually compatible with the rural setting. The color shall be determined and approved by District 5 Landscape Architecture.

Mitigation Measure AES 8 – The earthen berm shall be constructed to appear as naturally occurring as possible. The height and length of the berm shall be the minimum required. Side slopes shall be constructed as flat as possible, contour grading shall be used, and the alignment shall be subtly varied.

Mitigation Measure AES 9 –The height of the earthen berm shall not block views of the surrounding hillsides or horizon lines. Berms shall have undulating profiles, footprints, and side slopes to replicate a natural landform.

Mitigation Measure AES 10 – The earthen berm shall be constructed in such a way that it does not require the addition of guardrail or concrete barrier.

Mitigation Measure AES 11 – Following construction, re-grade and re-contour all new construction staging areas and other temporary uses as necessary to match the surrounding pre-project topography.

2.2.6 Cultural Resources

The measure listed under Historic and Archaeological Preservation in Appendix F of the *2005 ND/FONSI* is not applicable to the proposed Build Alternative as it was written for Project 2 extending into Kern County where the Tosco Pumping Station is located near post mile 2.0. No historic or archeological resources are present in the project's Area of Potential Effect. Although Caltrans does not anticipate impacts to cultural resources based on consultation, studies, and surveys, tribal monitoring will be included throughout construction of the project to be consistent with monitoring efforts on previous sections of State Route 46 construction for the Cholame and Wye sections. Therefore, the following measure is proposed:

Minimization Measure CUL 1 – A tribal monitor approved by the Salinan Tribe shall be present during ground-disturbing activities. Monitoring of work in modern fill or bedrock is not necessary. Once the tribal monitor determines that there is no danger of encountering archaeological or sacred resources in the project area, work may continue without a tribal monitor.

2.3.1 Water Quality and Stormwater Runoff

Best management practices will be implemented during construction and include the following standard measures:

Best Management Practice Measure 1 – Minimize active disturbed soil areas during the rainy season by using scheduling techniques.

Best Management Practice Measure 2 – Preserve existing vegetation to the maximum extent feasible.

Best Management Practice Measure 3 – Implement temporary protective cover/erosion control on all non-active disturbed soil areas and soil stockpiles.

Best Management Practice Measure 4 – Control erosive forces of stormwater runoff with effective storm flow management such as temporary concentrated flow conveyance devices, earthen dikes, drainage swales, lined ditches, outlet protection/velocity dissipation devices, and slope drains as determined feasible.

Best Management Practice Measure 5 – Implement linear sediment controls such as fiber rolls, check dams, or gravel bag berms on all active and non-active disturbed soil areas during the rainy season.

Best Management Practice Measure 6 – To further help prevent sediment discharge, stabilized construction site entrances, temporary drainage inlet protection, street sweeping, and vacuuming will be necessary.

Best Management Practice Measure 7 – Implement appropriate wind erosion controls year-round.

Best Management Practice Measure 8 – Water conservation practices are implemented on all construction sites and wherever water is used.

Best Management Practice Measure 9 – Paving and grinding procedures are implemented where paving, surfacing, resurfacing, grinding, or saw cutting may pollute stormwater runoff or discharge to the storm drain system or watercourses.

Best Management Practice Measure 10 – Procedures and practices designed for construction contractors to recognize illicit connections or illegally dumped or discharged materials on a construction site, and report incidents to the Resident Engineer.

Best Management Practice Measure 11 – The following activities must be performed at least 50 feet from concentrated flows of stormwater, drainage courses, and inlets: stockpiling materials, storing equipment and liquid waste containers, washing vehicles or equipment, fueling, and maintaining vehicles and equipment.

Best Management Practice Measure 12 – Concrete curing may be used during the installation and construction of concrete structures. Proper procedures will minimize pollution of runoff during concrete curing.

Best Management Practice Measure 13 – Proper procedures will be implemented to minimize pollution when culverts are removed/relocated from existing locations.

2.3.3 Paleontology

The proposed mitigation measures below have been updated to replace the language in the *2005 ND/FONSI* to reduce impacts to paleontological resources:

Mitigation Measure PALEO 1 – Caltrans shall retain a Principal Paleontologist that meets Caltrans qualifications to prepare or oversee preparation of a Paleontological Mitigation Plan during the project Plans, Specifications, and Estimates phase once more detailed project plans are available. Elements of the Paleontological Mitigation Plan should conform to Caltrans guidelines (Standard Environmental Reference, Volume 1, Chapter 8).

Mitigation Measure PALEO 2 – Caltrans shall retain a Principal Paleontologist that meets Caltrans qualifications to implement the prepared Paleontological

Mitigation Plan during construction. Implementation of the Paleontological Mitigation Plan will follow Caltrans standards and involve:

a) Conducting Worker Environmental Awareness Training.
b) Paleontological monitoring of earthwork operations that disturb high paleontological potential deposits. Monitoring will be conducted by qualified paleontological monitors under the direction of the Principal Paleontologist. Monitors will inspect exposures and record data. The Principal Paleontologist has the authority to adjust the level of effort for monitoring based on the results in the field.
c) Evaluating fossil discoveries and collecting scientifically significant fossils. Paleontological monitors have the authority to temporarily halt or divert earthwork in the vicinity of a fossil discovery.
d) Preparation, identification, and cataloguing collected fossils. Fossils will be curated into an accredited scientific repository as designated in the Paleontological Mitigation Plan.
e) Preparation of a final Paleontological Mitigation Report that summarizes results of construction monitoring and conforms with Caltrans guidelines. Copies of the report shall be filed with Caltrans and the designated repository (if fossils are discovered).

2.3.4 Hazardous Waste and Materials

The measure in the *2005 ND/FONSI* is not applicable to the proposed Build Alternative because it was written for bridges and structures that are located farther east of the project site at the Interstate 5 interchange, Main Flood Canal Bridge, and West Side Canal Bridge.

2.3.5 Air Quality

Implementation of the following standardized measures, some of which may also be required for other purposes such as stormwater pollution control, will also reduce air quality impacts resulting from construction activities:

Minimization Measure AIR 1 – Reduce the amount of disturbed areas where possible and preserve mature vegetation to the maximum extent feasible.

Minimization Measure AIR 2 – Use water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency would be required whenever wind speeds exceed 25 miles per hour. Reclaimed (non-potable) water would be used whenever possible.

Minimization Measure AIR 3 – All dirt stock-pile areas would be sprayed daily as needed.

Minimization Measure AIR 4 – Permanent dust control measures identified in the approved project re-vegetation and landscape plans would be implemented as soon as possible following completion of any soil-disturbing activities.

Minimization Measure AIR 5 – All roadways, driveways, sidewalks, etc. to be paved would be completed as soon as possible unless seeding or soil binders are used.

Minimization Measure AIR 6 – All trucks hauling dirt, sand, soil, or other loose materials on public roads are to be covered or would maintain at least 2 feet of freeboard in accordance with California Vehicle Code Section 23114.

Minimization Measure AIR 7 – Sweep streets at the end of the day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water would be used where feasible.

Minimization Measure AIR 8 – Schedule truck trips to minimize impacts to traffic flow.

Minimization Measure AIR 9 – Use only California Air Resources Board-approved fuel for all diesel-powered equipment used during construction.

Minimization Measure AIR 10 – To the extent feasible, use electric grid power to replace diesel-powered generators and to power air compressors and light sources.

Minimization Measure AIR 11 – Diesel equipment shall not be allowed to idle for more than 5 minutes.

Minimization Measure AIR 12 – The project would seed slopes, drainage channels, riparian areas, and other disturbed areas with native and drought-tolerant shrubs, perennials and grasses.

Minimization Measure AIR 13 – The following “green” practices and materials would be used in the project to the extent feasible as part of highway planting and erosion control work:

a) Compost and soil amendments derived from recycled wood products and green waste materials,
b) Fiber produced from recycled pulp such as newspaper, chipboard, cardboard,
c) Wood mulch made from green waste and/or clean manufactured wood or natural wood,
d) Native and drought-tolerant seed and plants species,

e) Irrigation controllers including water conservation features will use “smart” irrigation technology that uses “real world” data for only applying the water needed by the plants dependent on actual climate conditions,

f) Restricted pesticide use and reduction goals, and

g) Use of fly-ash in all concrete poured on the project.

2.3.7 Energy

Minimization Measure ENE 1 – To the extent feasible, schedule truck trips to minimize impacts to traffic flow and reduce idling time during peak travel times.

Minimization Measure ENE 2 – Construction equipment and vehicles would be operated in proper tune and maintained according to manufacturer’s specifications. All construction equipment will use low sulfur fuel as required by California Code of Regulations Title 17, Section 93114.

Minimization Measure ENE 3 – All on- and off-road diesel equipment shall not idle for more than 5 minutes. The contractor shall post signs in the designated queuing areas and/or job sites to remind drivers and operators of the 5-minute idling limit. For non-diesel equipment, idling time for lane closure during construction shall be restricted to 10 minutes in each direction to the extent as feasible.

2.4.2 Wetlands and Other Waters

The following avoidance and minimization measures are included for impacts to jurisdictional areas below. Measures to protect jurisdictional areas were not included in the *2005 ND/FONSI*; instead, the document stated that minor impacts to wetlands and other waters of the U.S. would be mitigated via wetland creation and/or purchase of wetland acres. The measures below replace the language in the Wetlands section of the *2005 ND/FONSI* Mitigation and Monitoring Program in Appendix F.

Minimization Measure WET 1 – Prior to construction, Caltrans shall obtain a Section 404 Nationwide Permit from the U.S. Army Corps of Engineers, a Section 401 Water Quality Certification/Waste Discharge Requirements from the Regional Water Quality Control Board or State Water Resources Control Board, and a Section 1602 Streambed Alteration Agreement from the California Department of Fish and Wildlife.

Mitigation Measure WET 2 – Restoration for impacts to jurisdictional waters shall occur at a 1 to 1 ratio (acreage) for temporary impacts, and compensatory mitigation shall occur at a 3 to 1 ratio (acreage) for permanent impacts. Restoration and mitigation shall be achieved through onsite restoration (re-establishment) and/or pursuing purchase of offsite mitigation credits from an in-lieu fee program, depending on the impact location within the project area and in accordance with the associated permit requirements.

Mitigation Measure WET 3 – Impacts to red willows in jurisdictional areas shall be replaced at a minimum of three replacement trees for every tree with a trunk greater than 4 inches in diameter at breast height removed. Final compensatory mitigation will be determined during the consultation process with the regulatory agencies.

Avoidance Measure WET 4 – Prior to any ground-disturbing activities, environmentally sensitive area fencing shall be installed around jurisdictional waters and the dripline of trees to be protected within project limits. Caltrans-defined environmentally sensitive areas will be noted on design plans and delineated in the field prior to the start of construction activities.

Avoidance Measure WET 5 – No construction activities shall be conducted in jurisdictional areas between November 1 through April 30 without prior written approval by the State Water Resources Control Board or Regional Water Quality Control Board. Caltrans shall submit detailed plans and descriptions for proposed activities to occur in jurisdictional areas between November 1 through April 30 at least 21 working days prior to the start of the proposed work. Work within jurisdictional areas that occurs during the wet season requires prior approval by the State Water Resources Control Board or Regional Water Quality Control Board through submittal of a Preparedness Plan for Rain/Waterbody Flow Events During May and October Work.

Avoidance Measure WET 6 – No construction activities shall occur at any time during rain events or on any day for which the National Weather Service has predicted a chance of at least 0.1 inch of rain within a 24-hour period for Shandon, California. Construction may resume after rain has ceased, the National Weather Service predicts clear weather for at least 24 hours, and the site conditions are dry enough to continue work without discharge of sediment or other pollutants from the project site.

Avoidance Measure WET 7 – No concrete shall be poured if the National Weather Service 5-day forecast predicts a 10 percent or greater chance of rain for Shandon, California.

Avoidance Measure WET 8 – All poured concrete must be protected from contact with rainwater or surface waters for 30 days or until testing levels for pH with tap water measures below 9.5.

Avoidance Measure WET 9 – No work shall occur in areas of standing or flowing surface water. If dewatering or diversion operations are necessary, Caltrans shall submit a detailed dewatering/diversion plan to the State Water Resources Control Board or Regional Water Quality Control Board staff and provide them 30 days review and approval time prior to any dewatering or diversion.

Avoidance Measure WET 10 – Jurisdictional areas shall be stabilized for winter prior to November 1, either by completing construction in these areas, including installation of permanent erosion control measures, or by implementing winterization stabilization measures capable of stabilizing the area and preventing erosion under winter rain and flow conditions generated by the 10-year, 24-hour storm event.

Avoidance Measure WET 11 – All equipment shall be cleaned and free of weed propagules prior to entry into jurisdictional features.

Avoidance Measure WET 12 – Erosion and sediment control measures shall be onsite prior to the start of construction and kept onsite so they are immediately available for installation in anticipation of rain events. Effective erosion control measures must be installed no later than the day prior to predicted rain events (0.1 inch or more in 24 hours).

Avoidance Measure WET 13 – Staging areas for mobile equipment and mobile equipment fueling and storage shall be located at least 100 feet away from creek banks and in a location where fluids or accidental discharges cannot flow into the jurisdictional areas. All stationary equipment located within the creek banks shall be positioned over secondary containment and refueling of stationary equipment within jurisdictional areas requires prior approval by the State Water Resources Control Board or Regional Water Quality Control Board through submittal of a stationary equipment refueling plan. Stationary equipment must be removed from the channel and staged at least 100 feet away from jurisdictional areas if the National Weather Service predicts a chance of at least 0.1 inch of rain within a 24-hour period for Shandon, California.

Avoidance Measure WET 14 – Night work is not permitted within jurisdictional areas in streambeds or below tops of bank.

Avoidance Measure WET 15 – All litter, construction debris, equipment, loose materials and soil spoils shall be removed at the end of every work shift. Stockpiles of materials including temporary stockpiled soils shall not be stored within jurisdictional areas. Stockpiles not actively being used for construction shall be covered and surrounded with a linear sediment barrier.

2.4.3 Plant Species

The following avoidance and minimization measures are included for sensitive plant species below. Measures to protect these species were not included in the *2005 ND/FONSI*; instead, the document stated that compensatory land acquisition would mitigate for impacts to vegetation. The measures below replace the language in the Vegetation and Wildlife section of the *2005 ND/FONSI* Mitigation and Monitoring Program in Appendix F.

California Androsace

Avoidance Measure PLA 1 – Environmentally Sensitive Area fencing will be installed during construction to prevent inadvertent disturbance to the California androsace outside of the grading limits. Fencing shall be shown on the design plans and will be established in the field to alert construction of the sensitive area and to avoid entering it for any reason.

Protruding Buckwheat

Minimization Measure PLA 2 – Environmentally Sensitive Area fencing will be installed during construction to prevent inadvertent disturbance to protruding buckwheat habitat outside of the grading limits. Fencing shall be shown on the design plans and will be established in the field to alert construction of the sensitive area and to avoid entering it for any reason.

Minimization Measure PLA 3 – Caltrans shall collect seed from the protruding buckwheat plants within the project footprint for one to two years prior to construction. These seeds shall be used in the hydroseed mix or hand-broadcast on the new north-facing fill slopes for permanent erosion control.

Temblor Buckwheat

Minimization Measure PLA 4 – Caltrans shall collect seed from the Temblor buckwheat plants within the project footprint for one to two years prior to construction. These seeds shall be hand-broadcast on areas within the new Caltrans right-of-way, any adjacent temporary easements that contain shale barrens with sparse populations of Temblor buckwheat, or where there are shale barrens that are not currently occupied by Temblor buckwheat. It is anticipated that these receiver sites for collected seed will be fenced and protected from construction impacts and grazing pressure for the duration of construction.

Minimization Measure PLA 5 – Environmentally Sensitive Area fencing will be installed during construction to prevent inadvertent disturbance to Temblor buckwheat habitat outside of the grading limits. Fencing shall be shown on the design plans and will be established in the field to alert construction of the sensitive area and to avoid entering it for any reason.

San Benito Poppy

Avoidance Measure PLA 6 – Environmentally Sensitive Area fencing will be installed during construction to prevent inadvertent disturbance to the San Benito poppy outside of the grading limits. Fencing shall be shown on the design plans and will be established in the field to alert construction of the sensitive area and to avoid entering it for any reason.

Stinkbells

Minimization Measure PLA 7 – Environmentally Sensitive Area fencing will be installed during construction to prevent inadvertent disturbance to the stinkbells outside of the grading limits. Fencing shall be shown on the design plans and will be established in the field to alert construction of the sensitive area and to avoid entering it for any reason.

Minimization Measure PLA 8 – Caltrans shall collect seeds and fruiting capsules from stinkbells within the project footprint for one to two years prior to construction. Seeds and fruiting bodies shall be used in the hydroseed mix or hand-broadcast in appropriate areas on the new north-facing fill slopes for permanent erosion control.

2.4.4 Animal Species

The following avoidance and minimization measures are included for sensitive animal species below. Measures to protect these species were not included in the *2005 ND/FONSI*; instead, the document stated that compensatory land acquisition would mitigate for impacts to wildlife. The measures below replace the language in the Vegetation and Wildlife section of the *2005 ND/FONSI* Mitigation and Monitoring Program in Appendix F.

Western Spadefoot Toad

The minimization and avoidance measures for the California Tiger Salamander (measures TES 16 through TES 34, see Section 2.4.5 Threatened and Endangered Species) may also avoid and minimize impacts to the western spadefoot toad. No additional measures will be incorporated for this species. Also, measures TES 16 and TES 49 require the purchase of mitigation credits from a conservation bank such as Palo Prieto for habitat impacts to the San Joaquin kit fox and California tiger salamander. This will benefit western spadefoot toad, which is known to breed and use upland refugia on the Palo Prieto Conservation Bank.

California Glossy Snake (New Resource), San Joaquin Coachwhip, and Coast Horned Lizard

The minimization and avoidance measures for the California red-legged frog and San Joaquin kit fox (measures TES 35 to TES 46 and TES 49 to TES 51, see Section 2.4.5 Threatened and Endangered Species) may also avoid and minimize impacts to the California glossy snake, San Joaquin coachwhip, and coast horned lizard, including worker environmental awareness training and preconstruction surveys. Also, measures TES 16 and TES 49 require the purchase of mitigation credits from a conservation bank such as Palo Prieto for habitat impacts to the San Joaquin kit fox and California tiger salamander. This will benefit the California glossy snake, San Joaquin coachwhip, and coast horned lizard, which have been documented on the Palo Prieto Conservation Bank.

Grasshopper Sparrow (New Resource), California Horned Lark, and Other Nesting Birds

The minimization and avoidance measures for the California red-legged frog and San Joaquin kit fox (measures TES 35 to TES 46 and TES 49 to TES 51, see Section 2.4.5 Threatened and Endangered Species) may also avoid and minimize impacts to the grasshopper sparrow, California horned lark and other nesting birds, including preconstruction surveys prior to initial ground disturbance. Also, measures TES 16 and TES 49 require the purchase of mitigation credits from a conservation bank such as Palo Prieto for habitat impacts to the San Joaquin kit fox and California tiger salamander. This will benefit the grasshopper sparrow, California horned lark, and other nesting birds, which have been documented on the Palo Prieto Conservation Bank. The following measures will also apply:

Avoidance Measure AMS 1 – During the nesting bird season, pre-construction surveys for ground-nesting bird species will be conducted prior to initial ground disturbance and repeated if a construction area is inactive for more than 14 days.

Avoidance Measure AMS 2 – If an active nest is discovered within the project limits or within 250 feet of the project limits, a buffer and monitoring will be implemented to provide protection to the nest and its occupants until it is determined that the fledglings can fly on their own and are no longer dependent on the nest.

Mountain Plover

No specific measures for the mountain plover are proposed. Impacts will be minimized with the implementation of avoidance and minimization measures proposed for other species such as preconstruction surveys. The mountain plover does not nest or breed in California; therefore, no measures are needed to avoid or minimize their nests.

Burrowing Owl

In addition to the avoidance and minimization measures discussed for the San Joaquin kit fox in Section 2.4.5 Threatened and Endangered Species, the following measures will be implemented:

Avoidance Measure AMS 3 – A qualified biologist shall conduct pre-construction surveys for the burrowing owl within a 250-foot radius of proposed ground disturbance, within 30 days prior to project commencement. The biologist shall survey for burrows with molted feathers, cast pellets, prey remains, eggshell fragments, or excrement at or near the burrow entrance and listen for burrowing owl calls.

Avoidance Measure AMS 4 – If a burrowing owl is detected within the project limits or within 500 feet of the construction activities, a buffer zone for the

burrow or burrow complex shall be defined. Between February 1 and August 31, the owls are presumed to be nesting and a buffer and monitoring shall be implemented in consultation with the California Department of Fish and Wildlife to provide protection to the nest and its occupants. During the fall or winter from September 1 to January 31, the owls are assumed to be overwintering or migrating, so the buffer zone would be smaller than a nesting season buffer but would also be implemented in consultation with the California Department of Fish and Wildlife. If active, unavoidable burrows are discovered, Caltrans shall consult with the California Department of Fish and Wildlife for guidance.

Golden Eagle Nesting Habitat (New Resource)

Avoidance Measure AMS 5 – Surveys for raptor nests within 1 mile of construction activities shall be conducted by a qualified biologist prior to construction. If an active golden eagle nest is found within 1 mile of construction activities, an adequate buffer and monitoring would be implemented and developed in consultation with the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service.

Prairie Falcon Nesting Habitat (New Resource)

Avoidance Measure AMS 6 – Surveys for raptor nests within 1 mile of construction activities shall be conducted by a qualified biologist prior to construction. Available nesting habitat for prairie falcons is located outside of the project area in steep topography and within private property; therefore, Caltrans shall thoroughly survey for nests from the Caltrans right-of-way using spotting scopes as feasible. If an active prairie falcon nest is found within 500 feet of the construction activities, an adequate buffer zone for the nest shall be defined and monitoring of the nest shall be implemented.

Mountain Lion (New Resource)

No specific measures for the mountain lion are proposed. Impacts will be minimized with the implementation of the new bridge structures, additional undercrossings, and directional wildlife fencing.

American Badger

Avoidance and minimization measures for the San Joaquin kit fox and burrowing owl will also benefit the American badger because they have similar lifestyles and occupy similar habitat areas. See measures TES 49 through TES 51 and measures AMS 3 and AMS 4 above. No additional measures for protection of the American badger are proposed.

2.4.5 Threatened and Endangered Species

The following avoidance, minimization, and mitigation measures are included for threatened and endangered species below. Measures to protect these species were not specifically included in the *2005 ND/FONSI*; instead, the

document stated that mitigation measures would be finalized through the permit process. The measures below replace the language in the Threatened and Endangered Species section of the *2005 ND/FONSI* Mitigation and Monitoring Program in Appendix F.

Crotch Bumble Bee (New Resource)

Minimization Measure TES 1 – During the project design phase in 2024, focused bumble bee surveys shall be conducted to determine if the Crotch bumble bee occurs in the project area. If the Crotch bumble bee is identified in the project area, Caltrans shall coordinate with the California Department of Fish and Wildlife and, if necessary, a 2081 Incidental Take Permit will be acquired.

Minimization Measure TES 2 – Surveys shall occur prior to ground disturbance for nesting bumble bees. No work shall occur within 50 feet of an active Crotch bumble bee nest unless approved by the California Department of Fish and Wildlife.

Avoidance Measure TES 3 – A Worker Environmental Awareness Training will be provided for all construction personnel prior to the start of any ground-disturbance or vegetation removal to discuss Crotch bumble bee identification, ecology, habitat, and avoidance and minimization measures.

Minimization Measure TES 4 – Prior to any ground-disturbing activities, environmentally sensitive area fencing shall be installed, as appropriate, around Crotch bumble bee feeding and nesting habitat to be avoided. Environmentally sensitive areas shall be noted on design plans and delineated in the field prior to the start of construction activities.

Avoidance Measure TES 5 – All areas greater than 15 feet beyond the proposed cut/fill limits shall be off-limits to construction equipment.

Minimization Measure TES 6 – California native species (local stock preferred) shall be used in revegetation and habitat enhancement efforts associated with the project. Crotch bumble bee nectar plant species shall be incorporated into the seed mixes to be used for re-vegetation and restoration of temporary impact areas.

Avoidance Measure TES 7 – Equipment and materials storage shall be restricted to areas within the proposed median (or between the existing highway and the proposed alignment) to the maximum extent practicable.

Minimization Measure TES 8 – Use of rodenticides and herbicides in the project area shall be limited in areas that contain suitable Crotch bumble bee habitat.

Minimization Measure TES 9 – Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. shall be revegetated and recontoured if necessary to promote restoration of the area to pre-project conditions. Appropriate methods and plant species will be used to revegetate grassland habitats.

Monarch Butterfly (New Resource)

Avoidance Measure TES 10 – All areas greater than 15 feet beyond the proposed cut/fill limits shall be off limits to construction equipment.

Minimization Measure TES 11 – California native species (local stock preferred) shall be used in revegetation and habitat enhancement efforts associated with the project. Native milkweed species and monarch nectar plant species shall be incorporated into the seed mixes to be used for re-vegetation and restoration of temporary impact areas.

Avoidance Measure TES 12 – Equipment and materials storage shall be restricted to areas within the proposed median (or between the existing highway and the proposed alignment) to the maximum extent practicable.

Minimization Measure TES 13 – Use of rodenticides and herbicides in the project area shall be limited in areas that contain suitable monarch butterfly habitat.

Minimization Measure TES 14 – Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. shall be recontoured if necessary and revegetated to promote restoration of the area to pre-project conditions. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis.

Minimization Measure TES 15 – Prior to project-related vegetation disturbance activities, the contractor shall conduct appropriately timed mowing to remove any milkweed anticipated to be impacted to reduce monarch butterfly egg laying within project area.

California Tiger Salamander

Mitigation Measure TES 16 – Final compensatory mitigation shall be determined in coordination with the California Department of Fish and Wildlife during the California Endangered Species Act 2081 Incidental Take Permit permitting process. Caltrans anticipates that California tiger salamander mitigation credits will be purchased from the Palo Prieto Conservation Bank.

Below are avoidance and minimization measures outlined or referenced in the 2005 Biological Opinion from the U.S. Fish and Wildlife Service that are anticipated to be included in upcoming Section 7 consultation for the project.

Minimization Measure TES 17 – Pre-construction meetings with the construction contractor and crew shall be conducted to brief them on the potential presence of the California tiger salamander in the project area and to educate onsite workers in the identification and habitat requirements of the California tiger salamander, as well as the ramifications of take of listed species. The minimization measures shall also be discussed.

Minimization Measure TES 18 – Pesticide application shall be avoided within 500 feet of all wetlands/water courses.

Minimization Measure TES 19 – California native species (local stock preferred) shall be used in re-vegetation and habitat enhancement efforts associated with the project.

Minimization Measure TES 20 – All areas greater than 15 feet beyond the proposed cut/fill limits shall be off-limits to construction equipment within areas of the project with the potential to impact the California tiger salamander.

Minimization Measure TES 21 – Caltrans shall immediately report any sighting of live California tiger salamanders within the action area to the Service.

Minimization Measure TES 22 – Any live California tiger salamander found within the construction footprint of the proposed project must be relocated out of harm's way.

Minimization Measure TES 23 – If a California tiger salamander is found injured or killed, Caltrans must contact the U.S. Fish and Wildlife Service office immediately (or the following day if found at night) so the agency can review the project activities to determine if additional protective measures are needed. Project activities may continue during this review period, provided that all protective measures proposed by Caltrans and the terms and conditions of the Biological Opinion have been and continue to be implemented.

Minimization Measure TES 24 – Caltrans shall enforce a maximum speed limit of 20 miles per hour on unpaved roads within the project area.

Minimization Measure TES 25 – Caltrans shall ensure that project-related vehicles do not leak anti-freeze or other hazardous materials.

Minimization Measure TES 26 – The biologist shall be given the authority to stop any work that may result in take of the California tiger salamander. If the biologist(s) exercises this authority, the U.S. Fish and Wildlife Service shall be notified by telephone and electronic mail within one (1) working day.

Minimization Measure TES 27 – Caltrans shall submit the name(s) and credentials of the biologist(s) who would conduct activities for the California tiger salamander, as specified in the Biological Opinion. Project activities shall not begin until Caltrans has received written approval from the U.S. Fish and Wildlife Service of the biologist(s) they intend to use.

Minimization Measure TES 28 – Before initiating project activities, the U.S. Fish and Wildlife Service-approved biologist shall identify appropriate areas to relocate California tiger salamanders found in the construction area. These areas shall be near the potential capture site or another approved by the U.S. Fish and Wildlife Service, support suitable vegetation, and be free of exotic predators (i.e., bullfrogs).

Minimization Measure TES 29 – If captured, California tiger salamanders shall be placed in moist cloth bags or plastic buckets and kept shaded and moist until they are released at the new site. The relocation process must be implemented as quickly as possible.

Minimization Measure TES 30 – To avoid transferring disease or pathogens between aquatic habitats during the course of surveys and handling of California tiger salamanders, the U.S. Fish and Wildlife Service-approved biologist shall follow the Declining Amphibian Population Task Force's Code of Practice.

Below are avoidance and minimization measures anticipated to be included in the required California Endangered Species Act 2081 Incidental Take Permit to be issued by the California Department of Fish and Wildlife that pertain to the California tiger salamander.

Minimization Measure TES 31 – A representative sample of small mammal burrows within 0.35 mile of a known or potential California tiger salamander breeding pond that is determined by the Designated Biologist to have the greatest potential to serve as refugia for California tiger salamander shall be excavated prior to initial ground clearing. Determination of these burrows would include known parameters of preferred refugia, such as proximity to ponds and burrow type. Excavation shall be conducted by the California Department of Fish and Wildlife-approved Designated Biologist(s) or Designated Monitor(s) working in the presence of the Designated Biologist(s). Excavations shall occur by digging with hand tools, but if the soil is too difficult to excavate by hand, then a pneumatic spade and/or mini-excavator may be used under direct supervision by the Designated Biologist(s). If no California tiger salamanders are found during excavation of high-potential burrows (of which, no less than 25 percent will be excavated), Caltrans will infer the area is not serving as upland habitat and proceed with work as planned, which will not require further excavation of burrows prior to initial ground clearing. Timing of excavation shall occur outside of the California tiger salamander

breeding season (the excavations shall be done on or after June 1 and before December 1).

Minimization Measure TES 32 – If Permitee initiates or extends Covered Activities into the California tiger salamander breeding season (December through May) within 0.35 mile of a potential or known California tiger salamander breeding pond, the Permittee shall install exclusion fencing around each active work area to prevent breeding adults from moving into the active work areas. Permittee shall have the fencing material and design reviewed and approved in writing by the California Department of Fish and Wildlife before installation. The exclusion fence shall be installed after all small mammal burrows inside the work areas are excavated under the direct supervision of the Designated Biologist(s) to prevent entrapment of California tiger salamanders within the active work areas. When small mammal burrows cannot be avoided by a 50-foot no-disturbance buffer from the fence line, they shall be excavated prior to commencing fence installation. If exclusion fence is not erected at a work area that is located in whole or in part within 0.35 mile of known or potential breeding habitat outside the California tiger salamander breeding season (June through November), all Covered Activities shall cease when a 70 percent or greater chance of rainfall is predicted within 72 hours.

Minimization Measure TES 33 – The Designated Biologist(s) shall accompany the fencing crew to ensure that California tiger salamanders are not killed or injured during installation. Permittee shall construct the exclusion fence so its integrity is maintained under all weather conditions for the duration of the Covered Activities in each work area. Permittee shall inspect the exclusion fence at least once weekly during the non-breeding season and as needed, but at least daily during the breeding season (December through May) and maintain/repair the fence as necessary. The Designated Biologist(s) shall relocate any California tiger salamander found up against the exclusion fencing to prevent desiccation or predation in accordance with the California Department of Fish and Wildlife-approved California tiger salamander Relocation Plan. Permittee shall remove the California tiger salamander exclusion fence immediately upon completion of Covered Activities in each work area.

Minimization Measure TES 34 – The Designated Biologist(s) and Permittee shall monitor the National Weather Service 72-hour forecast for the Project Area. If a 70 percent or greater chance of rainfall is predicted within 72 hours, Permittee shall cease all Covered Activities within 0.35 mile of a known or potential California tiger salamander breeding pool—unless California tiger salamander exclusion fencing has been installed—until a 20 percent or less chance of rain is forecast. If work must continue within 0.35 mile of a known or potential California tiger salamander breeding pool when 70 percent or greater chance of rain is forecast in any 24-hour period, then a Designated Biologist or Designated Monitor must survey the project site before construction begins each day that 70 percent or greater chance of rain is

forecast. If a Designated Monitor is used to conduct surveys, a Designated Biologist must still be available to capture and relocate any California tiger salamanders that are discovered during the surveys. The Permittee may continue to work within 0.35 mile of a known or potential California tiger salamander breeding pond 24 hours after the rain ceases and there is a 20 percent or less chance of precipitation in the 72-hour forecast. Work areas that have been cleared of California tiger salamanders and enclosed with California tiger salamander exclusion fencing may continue Covered Activities during rainfall events.

California Red-Legged Frog

Additional measures for the California red-legged frog will be determined in coordination with U.S. Fish and Wildlife Service during the Section 7 consultation process. The following minimization measures were outlined in the 2005 Biological Opinion specifically for the California red-legged frog:

Minimization Measure TES 35 – All earthwork within 270 feet of California red-legged frog aquatic habitat shall be completed between May 1 and October 31.

Minimization Measure TES 36 – A qualified biologist shall conduct pre-construction surveys for the California red-legged frog within the project area within two days of initiation of project construction.

Minimization Measure TES 37 – Any California red-legged frog encountered shall be reported to the U.S. Fish and Wildlife Service immediately or as soon as practicable (i.e., the following business day if encountered at night). California red-legged frogs found in harm's way shall be captured and relocated to appropriate habitat as determined after discussions with Service staff.

Minimization Measure TES 38 – All new sightings of California red-legged frogs within project area shall be reported to the U.S. Fish and Wildlife Service and the California Natural Diversity Database.

Minimization Measure TES 39 – Pre-construction meetings with the construction contractor and crew shall be conducted to brief them on the potential presence of California red-legged frogs in the project area and educate onsite workers in the identification and habitat requirements of the California red-legged frog, as well as the ramifications of take of listed species. The minimization measures outlined will also be discussed.

Minimization Measure TES 40 – To the maximum extent practicable, contractors shall avoid all project-related activities including road construction within 300 feet of all wetlands/water courses that provide suitable breeding and foraging habitat for the California red-legged frog.

Minimization Measure TES 41 – Pesticide application shall be avoided within 500 feet of all wetlands/water courses.

Minimization Measure TES 42 – Bank slope protection placed on creek channel banks will be designed for erosion control by means of riparian function enhancement. Designs using native topsoil and native riparian local stock are preferred (biotechnology, logs, willow wattles, potted willows, "soft-tech" or low-tech dirt terracing, etc.).

Minimization Measure TES 43 – Prior to the commencement of construction activities, Caltrans shall coordinate with the California Department of Fish and Wildlife to prepare a riparian vegetation replacement program for the project. Riparian vegetation removed as a result of the project shall be replaced onsite at a minimum 3 to 1 ratio for riparian tree removals for any tree greater than 4 inches in diameter at breast height.

Minimization Measure TES 44 – California native species (local stock preferred) shall be used in re-vegetation and habitat enhancement efforts associated with the project.

Minimization Measure TES 45 – Erosion control devices shall be installed adjacent to work areas to control sedimentation and turbidity. Measures will be taken to control post-construction runoff and pollutant discharge.

Minimization Measure TES 46 – Within 300 feet of potential California red-legged frog breeding habitat, only water shall be used for dust abatement.

Tricolored Blackbird

Minimization Measure TES 47 – Surveys for tricolored blackbirds shall be performed at the ponds within and adjacent to the project area with records of tricolored blackbird occurrences prior to the start of construction. If a tricolored blackbird nesting colony is present, a 250-foot buffer shall be applied from the outer edge of hydric vegetation associated with the pond. If construction takes place during the breeding season when an active tricolored colony is present, a qualified biologist shall monitor construction activities to ensure that the 250-foot buffer is adequate, and the breeding colony is not affected by construction occurring outside this buffer. If monitoring indicates that construction outside the 250-foot buffer is affecting a breeding colony, the buffer shall be increased to the distance necessary to result in no harm or harassment to the nesting colony. If a larger buffer is not feasible or if the biologist determines that the nesting colony is at risk, construction near the ponds shall cease until the young have fledged and are no longer reliant on the nest or until an adequate buffer and monitoring plan is implemented and developed in consultation with the California Department of Fish and Wildlife.

Minimization Measure TES 48 – Pesticide application shall be avoided within 500 feet of all wetlands/water courses.

San Joaquin Kit Fox

Mitigation Measure TES 49 – Final compensatory mitigation shall be determined in coordination with the California Department of Fish and Wildlife during the California Endangered Species Act 2081 Incidental Take Permit permitting process. Caltrans anticipates that San Joaquin kit fox mitigation credits will be purchased from the Palo Prieto Conservation Bank.

Minimization Measure TES 50 – Caltrans shall comply with the conditions of the California Endangered Species Act 2081 Incidental Take Permit to be issued by the California Department of Fish and Wildlife that pertain to the San Joaquin kit fox. Conditions anticipated to be required by the permit include the following:

a) Workers shall inspect for San Joaquin kit foxes under vehicles and equipment before vehicles and equipment are moved. If a San Joaquin kit fox is discovered during inspection, the worker shall notify the Designated Biologist and wait for the San Joaquin kit fox to move unimpeded out of the project site or area. During all ground- or vegetation-disturbing activities, all workers shall inform the Designated Biologist if a San Joaquin kit fox is observed in the project area. All work in the vicinity of the San Joaquin kit fox, which could injure or kill the animal, shall cease immediately.
b) Dens (including dens in natural substrate and in/beneath human-made structures) may be excavated/destroyed only after the Designated Biologist has conducted four consecutive days (and nights) of monitoring with tracking medium or infrared camera and determined that San Joaquin kit fox are not currently present. Natal dens shall not be excavated until the pups and adults have vacated the den and then only after written concurrence from the California Department of Fish and Wildlife. If the excavation process reveals evidence of current use by a San Joaquin kit fox, then den excavation/destruction shall cease immediately and tracking or camera monitoring shall be conducted/resumed.
c) Any known or natal San Joaquin kit fox den that must be destroyed shall be replaced with an artificial den.
d) The Designated Biologist or Biological Monitor shall inspect all open holes, sumps, and trenches within the project area at the beginning of the day, middle of the day, and end of the day for trapped San Joaquin kit foxes. To prevent inadvertent entrapment of wildlife, all excavations with sidewalls steeper than a 1 to 1 (45-degree) slope and that are up to 6 feet deep shall be covered when workers or equipment are not actively working in the excavation or shall have an escape ramp of earth or non-slip material with a less than 1 to 1 (45-degree) slope.
e) Ground- or vegetation-disturbing activities shall be confined to daylight hours only. Daylight shall be defined as the daytime period between sunrise and sunset.

Minimization Measure TES 51 – Caltrans shall comply with the conditions of the Biological Opinion to be issued by the U.S. Fish and Wildlife Service that pertain to the San Joaquin kit fox. Conditions anticipated to be required by the permit include the following:

a) Pre-construction surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact the San Joaquin kit fox. Surveys should identify San Joaquin kit fox habitat features on the project site and evaluate use by San Joaquin kit foxes if found to be present. The status of all dens should be determined and mapped and provided to the U.S. Fish and Wildlife Service within 5 days after survey completion and prior to the start of construction activities.

b) Using the U.S. Fish and Wildlife Service *Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior To Or During Ground Disturbance* (2011), the following buffers shall be used: potential den (50-foot buffer), known den (100-foot buffer), atypical den (50-foot buffer), potential natal den (200-foot buffer), and known natal den (500-foot buffer) with consultation with the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife.

c) The take authorization permit as issued provides a qualified biologist to proceed with den destruction of “potential dens” without monitoring within the project boundary, except for “natal or pupping” dens, which cannot be impacted until consultation with the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife has occurred. Destruction of “known” dens can only take place if the den is monitored for three consecutive days with tracking medium or wildlife camera to determine use.

d) Project-related vehicles should observe a 20-mile-per-hour speed limit in all project areas, except on county roads and state and federal highways; this is particularly important at night when San Joaquin kit foxes are most active. To the extent possible, night-time construction should be minimized. Off-road traffic outside of designated project areas should be prohibited.

e) To prevent inadvertent entrapment of San Joaquin kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2 feet deep should be covered at the close of each working day by plywood or similar materials or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured San Joaquin kit fox is discovered, the procedures under letter “n” of this section (TES 51) must be followed.

f) San Joaquin kit foxes are attracted to den-like structures such as pipes and may enter stored pipe becoming trapped or injured. All construction

pipes, culverts, or similar structures with a diameter of 4 inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for San Joaquin kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a San Joaquin kit fox is discovered inside a pipe, that section of pipe should not be moved until the U.S. Fish and Wildlife Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the San Joaquin kit fox has escaped.

g) All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in closed containers and removed at least once a week from a construction or project site.

h) No firearms shall be allowed on the project site.

i) To prevent harassment, mortality of San Joaquin kit foxes or destruction of dens by dogs or cats, no pets should be permitted on project sites.

j) Use of rodenticides and herbicides in project areas should be restricted. This is necessary to prevent primary or secondary poisoning of San Joaquin kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the U.S. Fish and Wildlife Service. If rodent control must be conducted, zinc phosphide should be used because of proven lower risk to the San Joaquin kit fox.

k) A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a San Joaquin kit fox or who finds a dead, injured or entrapped individual. The representative will be identified during the employee education program. The representative's name and telephone number shall be provided to the U.S. Fish and Wildlife Service.

l) An employee education program should be conducted for any project that has expected impacts to the San Joaquin kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in San Joaquin kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and agency personnel involved in the project. The program should include the following: a description of the San Joaquin kit fox and its habitat needs; a report of the occurrence of San Joaquin kit foxes in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be

prepared for distribution to the above-mentioned people and anyone else who may enter the project site.

m) Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc., should be recontoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but that after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and revegetation experts.

n) In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the U.S. Fish and Wildlife Service should be contacted for advice.

o) Any contractor, employee, or military or agency personnel who inadvertently kills or injures a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the California Department of Fish and Wildlife immediately in the case of a dead, injured or entrapped kit fox. The California Department of Fish and Wildlife contact for immediate assistance is State Dispatch at (916) 445-0045. They will contact the local warden or biologist.

p) The U.S. Fish and Wildlife Service and California Department of Fish and Wildlife will be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project-related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information.

q) A full-time, qualified biologist will implement the U.S. Fish and Wildlife Service's recommendations and other project-related biological monitoring requirements.

r) Dry culverts, a minimum of 36 inches in diameter, will cross all four lanes of traffic and will be located along the entire length of the proposed project every 0.3 mile based on recommendations in the literature (Cypher 2000). Culverts will not be placed at 0.3-mile intervals where drainage culverts or bridges greater than 36 inches are already proposed.

s) Wire mesh drift fencing with less than 2-inch squares will be used to funnel San Joaquin kit foxes toward culvert openings. Drift fencing will extend out approximately 150 feet on either side of culvert openings.

t) If a San Joaquin kit fox is found injured or killed as a result of the activities described in the Biological Opinion, the Federal Highway Administration or Caltrans must contact the U.S. Fish and Wildlife Service immediately, so

the agency can review the project activities to determine if additional protective measures are needed. Project activities may continue during this review period, provided that all protective measures proposed by Caltrans and the terms and conditions of the Biological Opinion have been and continue to be implemented.

u) Prior to the completion of the first phase of the project, Caltrans must provide the U.S. Fish and Wildlife Service with a draft plan to monitor the wildlife undercrossings associated with the proposed project. Following U.S. Fish and Wildlife Service review, a final monitoring plan must be completed within one year.

v) Caltrans must implement the final monitoring plan during the project to determine if their protective measures are effective in reducing San Joaquin kit fox mortality.

2.4.6 Invasive Species

The measures below replace the language on invasive species control in the Visual section of the *2005 ND/FONSI* Mitigation and Monitoring Program in Appendix F. The following avoidance and minimization measures will be implemented to prevent the spread of invasive species during construction:

Minimization Measure IS 1 – Caltrans shall incorporate methods of weed control, including herbicide spraying for annual species such as tumble weed and yellow star thistle where appropriate and allowed by permit requirements.

Avoidance Measure IS 2 – Invasive species listed in the California Invasive Plant Council Invasive Plant Inventory shall not be included in the Caltrans erosion control seed mix or landscaping planting plans.

Avoidance Measure IS 3 – The contract specifications for permanent erosion control will require the use of regionally appropriate California native forb and grass species that occur in the same general geographic area as the project site.

Avoidance Measure IS 4 – Construction equipment shall be free of excessive dirt that may contain weed seed before entering the construction site. If necessary, wash stations, either onsite or offsite, shall be established for construction equipment under the guidance of Caltrans to avoid or minimize the spread of invasive plants and/or seed within the construction area.

Avoidance Measure IS 5 – Mulches used on the project site shall be from source materials that will not introduce exotic species.

Minimization Measure IS 6 – In locations where the existing roadbed will be removed, Caltrans shall loosen up the soil to a 12-inch depth and incorporate 4 inches of compost to make the soil more fertile and less compacted with a greater potential for establishing native grasses and forbs. Caltrans shall re-

contour the area and restore it to natural habitat with various methods of re-vegetation using native plants and seed.

Minimization Measure IS 7 – Herbicide use shall be appropriate for the target species, and shall follow the guidelines below:

g) All precautions shall be taken to ensure that no herbicide is applied to native vegetation;

h) Herbicides shall not be applied on or near open water surfaces (no closer than 100 feet from open water);

i) Herbicide spraying shall not occur when wind speeds are more than 3 miles per hour;

j) No herbicides shall be applied within 24 hours of forecasted rain;

k) Application of all herbicides shall be done by qualified Caltrans staff or contractors with a current applicator's license to ensure that overspray is minimized, that all applications are made in accordance with the label recommendations, and with implementation of all required and reasonable safety measures. A safe dye shall be added to the mixture to visually denote treated sites. Application of herbicides shall be consistent with the U.S. Environmental Protection Agency's Office of Pesticide Programs, Endangered Species Protection Program county bulletins;

l) All herbicides, fuels, lubricants, and equipment shall be stored, poured, or refilled at least 500 feet from riparian habitat or water bodies in a location where a spill would not drain directly toward aquatic habitat. Prior to the onset of work, Caltrans shall ensure that a plan is in place for a prompt and effective response to accidental spills. All workers shall be informed of the importance preventing spills and of the appropriate measures to take should a spill occur.

3.3 Climate Change

Minimization Measure GHG 1 – Caltrans staff will enhance the environmental training provided for contractor staff by adding a module on greenhouse gas emission reduction strategies, including limiting equipment idling time as much as possible.

Minimization Measure GHG 2 – The project would revegetate previously undisturbed areas, where applicable, following construction completion. Landscaping reduces surface warming and, through photosynthesis, removes carbon dioxide from the atmosphere.

Appendix C Farmland Conversion Impact Rating Form

2002 Farmland Conversion Impact Rating Form

Aug 13 20 04:56p California (0005773337) (805) 434-0284 p.2

U.S. DEPARTMENT OF AGRICULTURE — Form AD-1006

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	1. Date of Land Evaluation Request: July 24, 2002	2. Sheet 1 of 1
3. Name of Project: EA 0C6500 SR 46 Corridor Improvements (Antelope) PM 55.1/60.9	4. Federal Agency Involved: Federal Highway Administration	
5. Proposed Land Use: Highway Improvements 2 to 4 lane widening	6. County and State: San Luis Obispo, Ca	7. Type of Project: Corridor ✓ Other ☐
PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS: 8/12/2002	2. Person Completing the NRCS parts of this form: TINA VANDER HOEK
3. Does the site or corridor contain prime, unique ,statewide or local important farmland? Yes ☒ No ☐ (If no, the FPPA does not apply - Do not complete additional parts of this form)		4. Acres Irrigated: NONE / 5. Average Farm Size: 704
6. Major Crop(s): WINE GRAPES, HAY, SMALL GRAIN	7. Farmable Land In Government Jurisdiction: Acres: 304,740 % 13.2	8. Amount of Farmland As Defined in FPPA: Acres: 358,025 % 15.5
9. Name of Land Evaluation System Used: CALIFORNIA STORIE INDEX	10. Name of Local Site Assessment System: NONE	11. Date Land Evaluation Returned by NRCS: 8/13/2002

PART III *(To be completed by Federal Agency)*	Alternative Site Rating: Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	75			
B. Total Acres To Be Converted Indirectly, Or To Receive Services				
C. Total Acres In Site	75			
PART IV *(To be completed by NRCS) Land Evaluation Information*				
A. Total Acres Prime and Unique Farmland	7.7AC			
B. Total Acres Statewide and Local Important Farmland	2.9 AC			
C. Percentage of Farmland in County or Local Govt. Unit to be Converted	.0000348			
D. Percentage of Farmland in Govt. Jurisdiction with Same or Higher Relative Value	NOT AVAILABLE			
PART V *(To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland to be Serviced or Converted (Scale of 0 - 100 Points)*	72.6			

PART VI *(To be completed by Federal Agency) Corridor or Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b & c))*	Max. Points Corridor	Other				
1. Area in Nonurban Use	15	15	15			
2. Perimeter in Nonurban Use	10	10	10			
3. Percent of Site Being Farmed	20	20	0			
4. Protection Provided by State and Local Government	20	20	20			
5. Distance from Urban Built-up area	0	15	—			
6. Distance to Urban Support Services	0	15	—			
7. Size of Present Farm Unit Compared to Average	10	10	5			
8. Creation of Non-Farmable Farmland	25	10	3			
9. Availability of Farm Support Services	5	5	3			
10. On-Farm Investments	20	20	10			
11. Effects of Conversion on Farm Support Services	25	10	0			
12. Compatibility with Existing Agricultural Use	10	10	2			
TOTAL CORRIDOR OR SITE ASSESSMENT POINTS	160		72			
PART VII *(To be completed by Federal Agency)*						
Relative Value of Farmland (from Part V above)	100		72.6			
Total Corridor or Site Assessment (From Part VI above or a local site assessment)	160		72			
TOTAL POINTS *(Total of above 2 lines)*	260		144.6			

PART VIII *(To be completed by Federal Agency after final alternative is chosen)*

1. Corridor or Site Selected:	2. Date of Selection:	3. Was A Local Site Assessment Used? Yes ☐ No ☐

4. Reason For Selection:

Signature of person completing the Federal Agency parts of this form: | DATE

Wisconsin substitute form AD-1006 6-9-97 Completion Instructions: http://www.wi.nrcs.usda.gov/soil/prime/primotes.html

2023 Farmland Conversion Impact Rating Form

U.S. DEPARTMENT OF AGRICULTURE
Natural Resources Conservation Service

NRCS-CPA-106
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I *(To be completed by Federal Agency)*	3. Date of Land Evaluation Request 8/8/23	4. Sheet 1 of _____
1. Name of Project Antelope Grade Section - Route 46 4-Lane Wi	5. Federal Agency Involved FHWA Represented by Caltrans	
2. Type of Project Highway Widening	6. County and State San Luis Obispo County	
PART II *(To be completed by NRCS)*	1. Date Request Received by NRCS 8/8/23	2. Person Completing Form Philip Smith
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES ☑ NO ☐	4. Acres Irrigated 76,766	Average Farm Size 396
5. Major Crop(s) Wine grapes, strawberries, cattle, calves	6. Farmable Land in Government Jurisdiction Acres: 703,981 % 33.1	7. Amount of Farmland As Defined in FPPA Acres: 257,935 % 12.1
8. Name Of Land Evaluation System Used California Revised Storie Index	9. Name of Local Site Assessment System None	10. Date Land Evaluation Returned by NRCS 8/18/23

PART III *(To be completed by Federal Agency)*	Maximum Points	Alternative Corridor For Segment (Antelope Grade North Alternative) Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly		108			
B. Total Acres To Be Converted Indirectly, Or To Receive Services					
C. Total Acres In Corridor					
PART IV *(To be completed by NRCS) Land Evaluation Information*					
A. Total Acres Prime And Unique Farmland		0			
B. Total Acres Statewide And Local Important Farmland		15.8			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted		0.0061			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value		44			
PART V *(To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)*		33			
PART VI *(To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))*	Maximum Points				
1. Area in Nonurban Use	15	15			
2. Perimeter in Nonurban Use	10	10			
3. Peroent Of Corridor Being Farmed	20	20			
4. Protection Provided By State And Local Government	20	20			
5. Size of Present Farm Unit Compared To Average	10	1			
6. Creation Of Nonfarmable Farmland	25	0			
7. Availablility Of Farm Support Services	5	5			
8. On-Farm Investments	20	10			
9. Effects Of Conversion On Farm Support Services	25	0			
10. Compatibility With Existing Agricultural Use	10	0			
TOTAL CORRIDOR ASSESSMENT POINTS	160	81	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland (From Part V)	100	33	0	0	0
Total Corridor Assessment (From Part VI above or a local site assessment)	160	81	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	114	0	0	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES ☐ NO ☐

5. Reason For Selection:

Signature of Person Completing this Part: | DATE

NOTE: Complete a form for each segment with more than one Alternate Corridor

Appendix D Official Species Lists

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish And Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003-7726
Phone: (805) 644-1766 Fax: (805) 644-3958
Email Address: FW8VenturaSection7@FWS.Gov
https://www.fws.gov/Ventura

In Reply Refer To:
Project Code: 2022-0060163
Project Name: SR-46 Antelope Grade

July 31, 2023

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed list identifies species listed as threatened and endangered, species proposed for listing as threatened or endangered, designated and proposed critical habitat, and species that are candidates for listing that may occur within the boundary of the area you have indicated using the U.S. Fish and Wildlife Service's (Service) Information Planning and Conservation System (IPaC). The species list fulfills the requirements under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the species list should be verified after 90 days. We recommend that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists following the same process you used to receive the enclosed list. Please include the Consultation Tracking Number in the header of this letter with any correspondence about the species list.

Due to staff shortages and excessive workload, we are unable to provide an official list more specific to your area. Numerous other sources of information are available for you to narrow the list to the habitats and conditions of the site in which you are interested. For example, we recommend conducting a biological site assessment or surveys for plants and animals that could help refine the list.

If a Federal agency is involved in the project, that agency has the responsibility to review its proposed activities and determine whether any listed species may be affected. If the project is a major construction project*, the Federal agency has the responsibility to prepare a biological assessment to make a determination of the effects of the action on the listed species or critical habitat. If the Federal agency determines that a listed species or critical habitat is likely to be adversely affected, it should request, in writing through our office, formal consultation pursuant to section 7 of the Act. Informal consultation may be used to exchange information and resolve

conflicts with respect to threatened or endangered species or their critical habitat prior to a written request for formal consultation. During this review process, the Federal agency may engage in planning efforts but may not make any irreversible commitment of resources. Such a commitment could constitute a violation of section 7(d) of the Act.

Federal agencies are required to confer with the Service, pursuant to section 7(a)(4) of the Act, when an agency action is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat (50 CFR 402.10(a)). A request for formal conference must be in writing and should include the same information that would be provided for a request for formal consultation. Conferences can also include discussions between the Service and the Federal agency to identify and resolve potential conflicts between an action and proposed species or proposed critical habitat early in the decision-making process. The Service recommends ways to minimize or avoid adverse effects of the action. These recommendations are advisory because the jeopardy prohibition of section 7(a)(2) of the Act does not apply until the species is listed or the proposed critical habitat is designated. The conference process fulfills the need to inform Federal agencies of possible steps that an agency might take at an early stage to adjust its actions to avoid jeopardizing a proposed species.

When a proposed species or proposed critical habitat may be affected by an action, the lead Federal agency may elect to enter into formal conference with the Service even if the action is not likely to jeopardize or result in the destruction or adverse modification of proposed critical habitat. If the proposed species is listed or the proposed critical habitat is designated after completion of the conference, the Federal agency may ask the Service, in writing, to confirm the conference as a formal consultation. If the Service reviews the proposed action and finds that no significant changes in the action as planned or in the information used during the conference have occurred, the Service will confirm the conference as a formal consultation on the project and no further section 7 consultation will be necessary. Use of the formal conference process in this manner can prevent delays in the event the proposed species is listed or the proposed critical habitat is designated during project development or implementation.

Candidate species are those species presently under review by the Service for consideration for Federal listing. Candidate species should be considered in the planning process because they may become listed or proposed for listing prior to project completion. Preparation of a biological assessment, as described in section 7(c) of the Act, is not required for candidate species. If early evaluation of your project indicates that it is likely to affect a candidate species, you may wish to request technical assistance from this office.

Only listed species receive protection under the Act. However, sensitive species should be considered in the planning process in the event they become listed or proposed for listing prior to project completion. We recommend that you review information in the California Department of Fish and Wildlife's Natural Diversity Data Base. You can contact the California Department of Fish and Wildlife at (916) 324-3812 for information on other sensitive species that may occur in this area.

[*A Biological Assessment is required for construction projects (or other undertakings having

similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

Note: IPaC has provided all available attachments because this project is in multiple field office jurisdictions.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Ventura Fish And Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003-7726
(805) 644-1766

This project's location is within the jurisdiction of multiple offices. However, only one species list document will be provided for all offices. The species and critical habitats in this document reflect the aggregation of those that fall in each of the affiliated office's jurisdiction. Other offices affiliated with the project:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

PROJECT SUMMARY

Project Code: 2022-0060163
Project Name: SR-46 Antelope Grade
Project Type: Road/Hwy - New Construction
Project Description: The California Department of Transportation (Caltrans) proposes to continue realigning and widening State Route (SR-) 46 from two lanes to four lanes in eastern San Luis Obispo County as part of the State Route 46 4-Lane Widening Project.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@35.73393205,-120.20414522934104,14z

Counties: Kern and San Luis Obispo counties, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 16 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Buena Vista Lake Ornate Shrew *Sorex ornatus relictus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1610	Endangered
Giant Kangaroo Rat *Dipodomys ingens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6051	Endangered
San Joaquin Kit Fox *Vulpes macrotis mutica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered

BIRDS

NAME	STATUS
California Clapper Rail *Rallus longirostris obsoletus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4240	Endangered
California Condor *Gymnogyps californianus* Population: U.S.A. only, except where listed as an experimental population There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8193	Endangered
Least Bell's Vireo *Vireo bellii pusillus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5945	Endangered
Southwestern Willow Flycatcher *Empidonax traillii extimus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

REPTILES

NAME	STATUS
Blunt-nosed Leopard Lizard *Gambelia silus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/625	Endangered
Green Sea Turtle *Chelonia mydas* Population: East Pacific DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened

AMPHIBIANS

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander *Ambystoma californiense* Population: U.S.A. (Central CA DPS) There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRUSTACEANS

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened

FLOWERING PLANTS

NAME	STATUS
California Jewelflower *Caulanthus californicus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4599	Endangered
Spreading Navarretia *Navarretia fossalis* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1334	Threatened

CRITICAL HABITATS

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
California Red-legged Frog *Rana draytonii* https://ecos.fws.gov/ecp/species/2891#crithab	Final

From: Millan, Amy@DOT
To: NMFS SpeciesList - NOAA Service Account
Subject: Caltrans Project 05-3307E
Date: Monday, July 31, 2023 8:40:00 AM

I am requesting an official ESA species list for those species under NMFS purview in California.

Agency Name and Address:
California Department of Transportation
50 Higuera Street, San Luis Obispo, CA 93401

Quad Name	**Orchard Peak, Cholame, Cholame Valley, Tent Hills, Camatta Canyon, Holland Canyon**
Quad Number	**35120-F2, 35120-F3, 35120-G3, 35120-G2, 35120-E3, 35120-E2**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) - **X**
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH -
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

Amy Millan | Senior Environmental Scientist, Acting Supervisor
Caltrans District 5 – San Luis Obispo
Central Coast Biology Branch
cell phone: 805-441-4160

List of Technical Studies Bound Separately

Air Quality Report, November 2021

Climate Change Report, June 2023

Community Impact Assessment – Farmland, August 2023

Cumulative Impact Assessment – July 2023

Energy Analysis Technical Memorandum, May 2022

Noise Quality Assessment Memorandum, March 2021

Paleontological Identification Report/Paleontological Evaluation Report, May 2022

Preliminary Geotechnical Design Report, April 2022

Reevaluation - Visual Assessment, July 2023

Supplemental Visual Impact Assessment, October 2021

Supplemental Historical Property Survey Report, September 2021

Supplemental Natural Environment Study, August 2023

Updated Initial Site Assessment Memo, December 2021

Water Quality Technical Memorandum, August 2023

The following was also prepared for the project to document cultural resources; however, this information is confidential and not available to the public:

- Supplemental Archaeological Survey Report, April 2022

To obtain a copy of one or more of these technical studies/reports or the Initial Study/Environmental Assessment, please send your request to:

Dianna Beck, Associate Environmental Planner
California Department of Transportation, District 5
50 Higuera Street, San Luis Obispo, California, 93401
Email: Dianna.Beck@dot.ca.gov
Phone: 805-459-9406

Please provide the following information in your request:

State Route 46 Corridor Improvement Project – Antelope Grade Section
05-SLO/KERN-46- PM 57.3 / 0.4
EA 05-3307E and Project ID 0518000075