State Route 58 Truck Climbing Lane Project

KERN COUNTY, CALIFORNIA
DISTRICT 06/09 – KER – 58 (PM 76.3/79.8)
EA/Project ID: 09-37960/0919000011

Initial Study
with Proposed Mitigated Negative Declaration/ 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 USC 327 and the Memorandum of Understanding dated May 27, 2022, and executed by the Federal Highway Administration and Caltrans.

Caltrans

March 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 Initial Study/Environmental Assessment, which examines the potential environmental impacts of the alternatives being considered for the proposed project in Kern County, California. Caltrans is the lead agency under the National Environmental Policy Act (NEPA), and Caltrans is the lead agency under the California Environmental Quality Act (CEQA). The document tells you why the project is being proposed, what alternatives we have considered for the project, how the existing environment could be affected by the project, the potential impacts of each of the alternatives, and the proposed avoidance, minimization, and/or mitigation measures.

What you should do:

- Please read this document.
- Additional copies of this document and the related technical studies are available for review at the Caltrans District 9 Office at 500 South Main Street, Bishop, California 93514; the Kern County Library at 212 South Green Street, Tehachapi, California 93561; and the Kern County Library at 1619-1629 S Street, Bakersfield, California 93301. This document may be downloaded at the following website: https://dot.ca.gov/caltrans-near-me/district-9/district-9-projects-list/state-route-58-truck-climbing-lane
- We'd like to hear what you think. If you have any comments about the proposed project, please attend the virtual public meeting that will be held on April 11, 2023, from 5:00 PM to 7:00 PM using the WebEx virtual platform. For information on how to join the virtual public meeting, go to the project's webpage located at: https://dot.ca.gov/caltrans-near-me/district-9/district-9-current-projects/58-truck-climbing-lane and/or send your written comments via U.S. mail or email to Caltrans by the deadline.
- Send comments via U.S. mail to: Cecilia Boudreau, Environmental Branch Chief, California Department of Transportation, 500 South Main Street, Bishop, California 93514.
- Send comments via email to: Cecilia.boudreau@dot.ca.gov
- Be sure to send comments by the deadline: April 19, 2023.

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

Alternative Formats:
For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to the California Department of Transportation, Attn: Cecilia Boudreau, District 9 Environmental Division, 500 South Main Street, Bishop, California 93514; (760) 874-8330 (Voice), or use the California Relay Service 1 (800) 735-2929 (TTY to Voice), 1 (800) 735-2922 (Voice to TTY), 1 (800) 855-3000 (Spanish TTY to Voice and Voice to TTY), 1-800-854-7784 (Spanish and English Speech-to-Speech) or 711.

Construct a 12-foot-wide truck climbing lane on eastbound State Route 58 in Kern County, from 0.30 miles east of the State Route 58/223 junction to 0.30 miles west of Hart Flat Road

INITIAL STUDY with Proposed Mitigated Negative Declaration/Environmental Assessment

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

THE STATE OF CALIFORNIA
Department of Transportation
and
Kern Council of Governments

Cooperating Agencies: United States Army Corp of Engineers
Responsible Agencies: California Transportation Commission, California Department of Fish and Wildlife, Central Valley Regional Quality Control Board,

3/14/2023
Date

Kirsten Helton
Deputy District Director, Planning & Environmental Analysis
California Department of Transportation District 9
CEQA/NEPA Lead Agency

The following persons may be contacted for more information about this document:

Cecilia Boudreau, Environmental Office Chief
500 S. Main Street, Bishop, CA 93514
cecilia.boudreau@dot.ca.gov
(760) 874-8330

PROPOSED MITIGATED NEGATIVE DECLARATION

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans), in coorperation with the Kern Council of Governments, proposes to construct a 12-foot-wide truck climbing lane along the eastbound side of State Route 58 in Kern County, about 10 miles west of the town of Tehachapi. The project limits extend from post mile 76.3, 0.30 mile east of the intersection of State Route 58 and State Route 223, to post mile 79.8, 0.30 mile west of Hart Flat Road. The project would also include operational improvements involving removal of the Bena Road and State Route 58 at-grade intersection and construction of an eastbound acceleration lane at the at-grade intersection of Bealville Road and State Route 58. The project would also widen the inside and outside shoulders to the standard 10-foot width and construct a 5-foot maintainable dirt shouder adjacent to the outside paved shoulder. Other highway improvements include drainage upgrades to accommodate the roadway widening, rumble strip installation, guardrail replacement, new or replaced signage, and relocation of lighting near the at-grade intersection of Bealville Road and State Route 58.

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 Agriculture and Forest Resources, Cultural Resources, Energy, Hazards and Hazardous Materials, Land Use and Planning, Mineral Resources, Population and Housing, Public Services, Recreation, Transportation, Tribal Cultural Resources, Utilities and Service Systems, and Wildfire.

The project would have less than significant effects to Aesthetics, Air Quality, Geology and Soils, Greenhouse Gas Emissions, Hydrology and Water Quality, and Noise.

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

BIO-8: To mitigate for impacts to wildlife connectivity, a wildlife underpass structure and directional fencing will be constructed within the Keene Pavement project limits.

BIO-18: Permanent impacts to wetlands, riparian vegetation, and aquatic resources will be reviewed by resource agencies as part of the permitting process during the project's design phase. The proposed strategy to mitigate for these impacts would be to purchase in-lieu fee credits or mitigation bank credits from an approved mitigation bank, at a ratio negotiated with the resource agencies. The specific bank and amount of credits required will need to be determined once impact areas are quantified.

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Kirsten Helton
Deputy District Director, Planning & Environmental Analysis
California Department of Transportation District 9

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Date

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Chapter 1 – Proposed Project

Introduction

NEPA Assignment

California participated in the "Surface Transportation Project Delivery Pilot Program" (Pilot Program) pursuant to 23 U.S. Code 327, for more than five years, beginning July 1, 2007, and ending September 30, 2012. MAP-21 (P.L. 112-141), signed by President Barack Obama on July 6, 2012, amended 23 U.S. Code 327 to establish a permanent Surface Transportation Project Delivery Program. As a result, the California Department of Transportation (Caltrans) entered into a Memorandum of Understanding pursuant to 23 U.S. Code 327 (NEPA Assignment MOU) with the Federal Highway Administration. The NEPA Assignment MOU became effective October 1, 2012, and was renewed on May 27, 2022, for a term of 10 years. In summary, Caltrans continues to assume Federal Highway Administration responsibilities under the National Environmental Policy Act (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 (USDOT) Secretary's responsibilities under the National Environmental Policy Act. This assignment includes projects on the State Highway System and Local Assistance Projects off of the State Highway System within the State of California, except for certain categorical exclusions that the Federal Highway Administration assigned to Caltrans under the 23 U.S. Code 326 CE Assignment MOU, projects excluded by definition, and specific project exclusions.

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

Caltrans proposes to construct a 12-foot-wide truck climbing lane along the eastbound side of State Route 58 from post miles 76.3 to 79.8 in Kern County. The project would also remove the at-grade intersection at Bena Road and State Route 58 and construct an eastbound acceleration lane at the at-grade intersection of Bealville Road and State Route 58. Additional improvements would include widening inside and outside shoulders to the standard 10-foot width, installing rumble strips, upgrading guardrail and signage, replacing lighting at the intersection of Bealville Road and State Route 58, and enhancing culverts to promote use by wildlife. The total length of the project is 3.5 miles.

The project location is shown in Figure 1, Project Vicinity Map. A more detailed view of the project area is shown in Figure 2, Project Location Map.

This project is included in the 2022 Kern Council of Governments 2018 Regional Transportation Plan. Phases for this project will be funded by a combination of funding from the Kern Council of Governments, Caltrans, the State Transportation Improvement Program (STIP), the Trade Corridor Enhancement Program, and/or other state or federal transportation-related programs.

Project construction is estimated to occur during the 2026/2027 fiscal year and be complete in the 2027/2028 fiscal year. Project duration is anticipated to take approximately 300 working days or 14 working months (typically 22 days per working month).

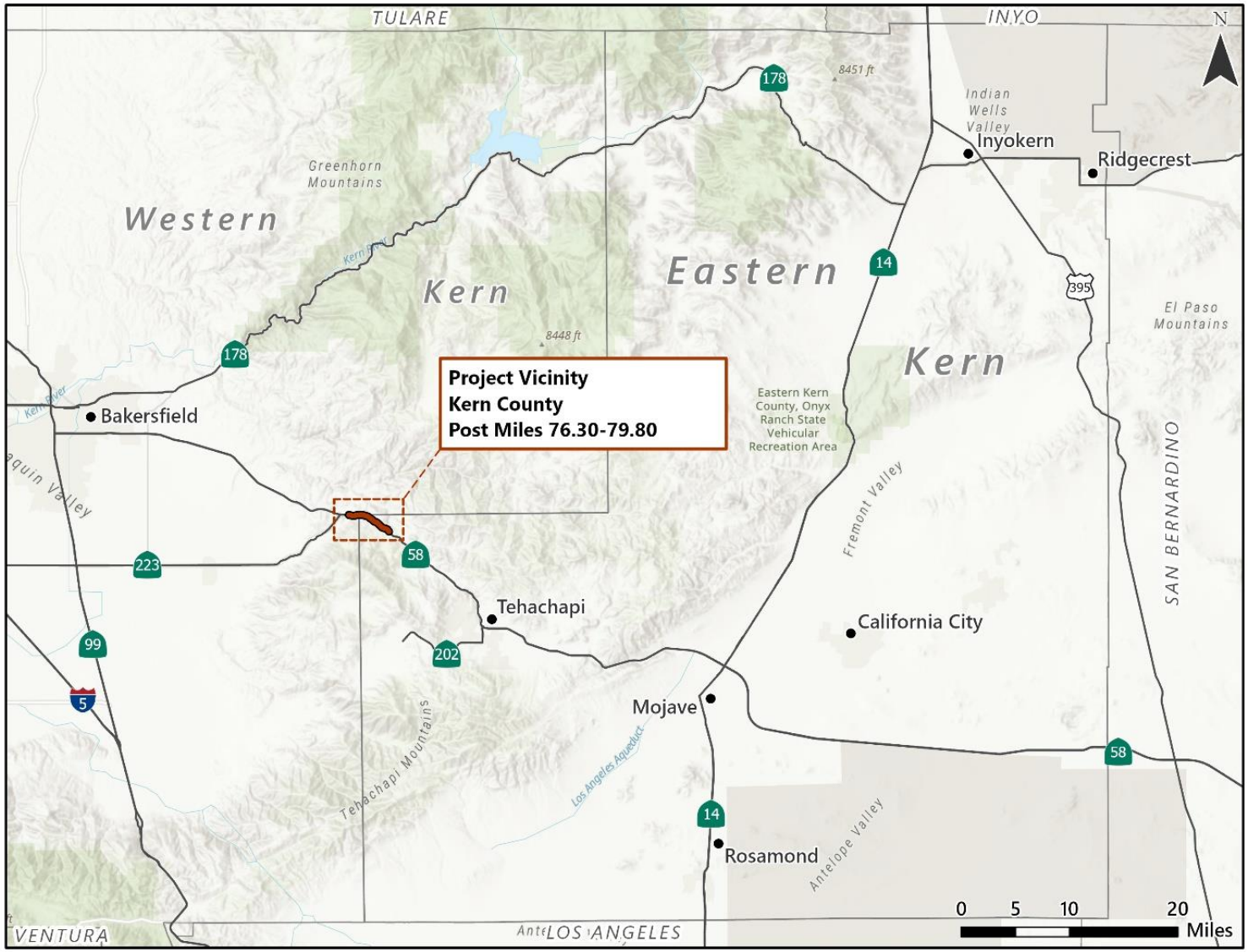

Figure 1 - Project Vicinity Map.

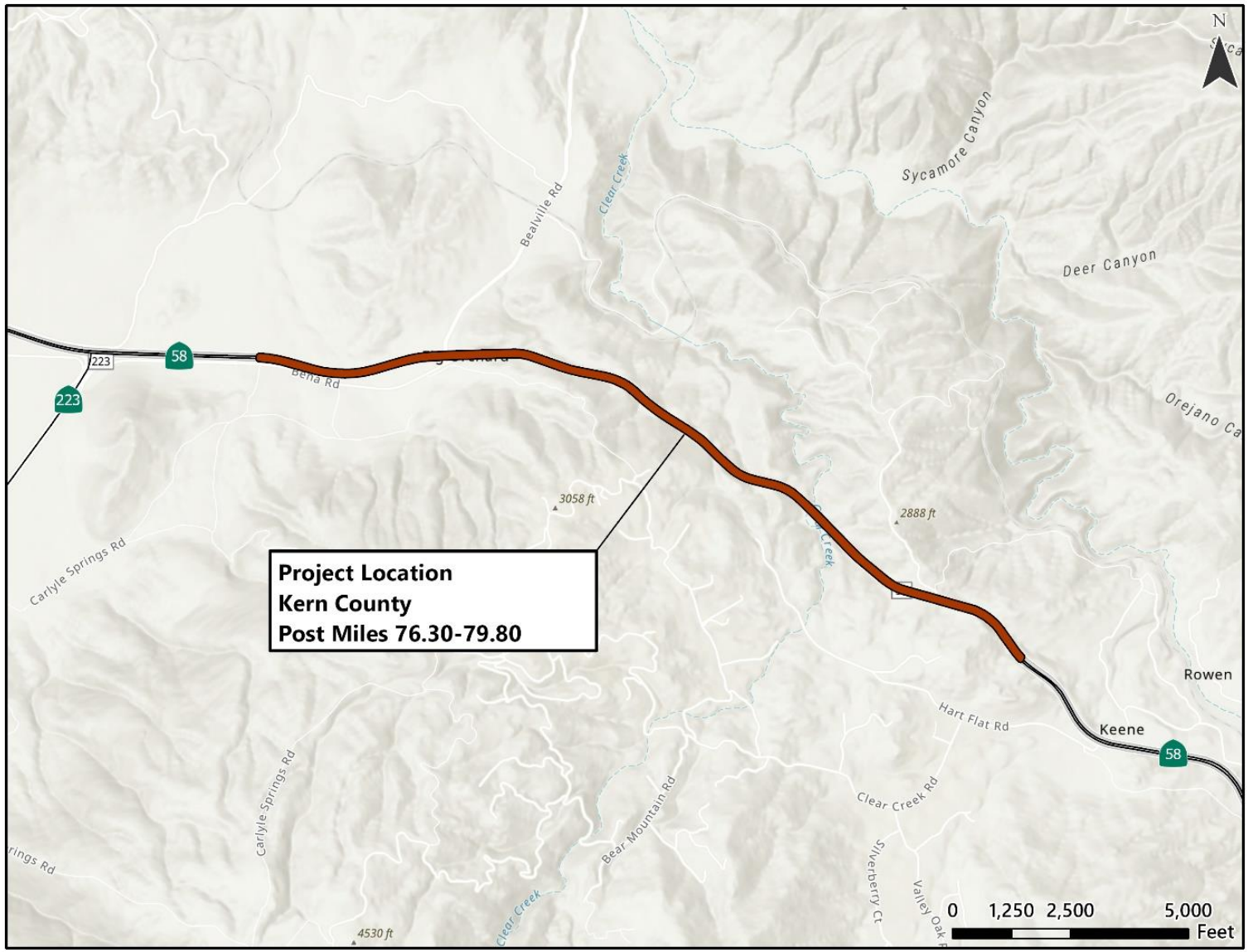

Figure 2 - Project Location Map.

Purpose and Need

Purpose

The purpose of the project is to:

- Improve traffic flow and operational performance on a steep grade section of State Route 58 eastbound where the existing truck speeds fall 30 miles per hour or more below the posted speed limit.

- Improve commuter travel and move freight more efficiently through the interregional corridor.

Need

State Route 58 within the project limits is a four-lane expressway/freeway with an at-grade intersection at Bealville Road (westbound)/Bena Road (eastbound) and controlled access elsewhere. The project is in a hilly area with an average grade of 5.7 percent, a maximum grade of 6.01 percent, and a total rise of 829 feet over 3.5 miles (from post mile 76.3 to post mile 79.8). The posted speed limits are 55 and 65 miles per hour; however, the average freight truck speed drops between 20 and 30 miles per hour at the steepest sections.

The Caltrans Highway Design Manual states that truck climbing lanes should be considered where truck speeds fall 10 miles per hour or more below the running speed of remaining traffic and a truck climbing lane should be considered for sustained grades greater than 2 percent where the total rise is greater than 250 feet.

Slow trucks in the number two (inside/slow) lane force the passenger cars to stack in the number one (fast) lane. The high traffic density from the truck vehicle speed reduction causes a drop in operational speed for all lanes resulting in increased traffic congestion and inefficient flow of traffic. Traffic density and vehicle speed reduction is compounded when slow-moving trucks merge into the fast lane attempting to pass slower moving trucks.

The Caltrans District 9 Traffic Safety Office conducted a Traffic Index Calculation analysis in May 2022 to forecast the increase in traffic within the project area. The analysis used Caltrans 2020 census data from the vehicle count station at post mile 90.72. The analysis assumed a 3.17 percent annual growth rate in Annual Average Daily Traffic. Annual Average Daily Traffic is the total volume of vehicle traffic on a highway for a year divided by 365 days.

Census data indicates that the eastbound Annual Average Daily Traffic makes up 57.1 percent of the total Annual Average Daily Traffic. The data also indicates that truck volumes are 34.74 percent of total traffic volume. The analysis forecasts that the eastbound truck traffic on State Route 58 will increase by 43 percent from 1,757,208 trucks per year in 2020 to 4,081,344 in design year 2047, 20 years following completion of the proposed project. Total eastbound vehicle traffic on State Route 58 will increase from 5,058,170 vehicles per year in 2020 to 11,748,255 in design year 2047 (see Table 1).

Traffic Category	2020 Census Data Year	2027 Construction Year	2047 Forecast Year
Total Eastbound Annual Average Daily Traffic	13,858	17,244	32,187
Total Eastbound Annual Traffic	5,058,170	6,294,060	11,748,255
Truck Eastbound Annual Average Daily Traffic	4,814	5,991	11,182
Truck Eastbound Annual Traffic	1,757,208	2,186,556	4,081,344

Table 1 - Vehicle and Truck Annual Average Daily Traffic Forecasts from Caltrans Traffic Demand Model.

Additional growth in truck traffic volume is anticipated as major distribution centers continue to be built in the San Joaquin Valley. Development of major inland ports being planned in the cities of Shafter and Mojave can be expected to increase truck traffic volumes, and additional traffic is anticipated with the completion of the Centennial Corridor, Westside Parkway, and Stockdale Highway projects, which will extend State Route 58 to connect Bakersfield and Interstate 5 with new freeway. Currently, there are over 184 distribution and logistics centers (with an estimated combined facility size of over 52 million square feet) in the South San Joaquin Valley that rely on State Route 58 to provide truck access to the eastern states. The Tejon Ranch Commerce Center, south of the junction of Interstate 5 and State Route 99, uses Wheeler Ridge Road to State Route 223 to State Route 58 (at the base of the proposed truck climbing lane) to ship east, or to access Southern California when Interstate 5 is closed due to inclement weather.

Independent Utility and Logical Termini

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

1. Connect logical termini and be of sufficient length to address environmental matters on a broad scope.

2. Have independent utility or independent significance (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.

The proposed project limits serve as logical termini or rational end points for transportation improvements and are sufficient to evaluate the environmental impacts of the proposed improvements. If other planned transportation projects are not constructed, the project would still address the need to improve traffic flow, improve commuter travel and move freight more efficiently along the 3.5-mile stretch of the eastbound truck climbing lane. The project has independent utility because no other transportation improvements would be necessary to achieve the benefits of the project and no reasonably foreseeable future transportation improvement projects would be restricted.

The segment between the project limits contains the steepest sustained grades between General Beale Road, post mile 69.7 (at about the 1,300-foot elevation) and the junction with State Route 202, post mile 90.7 (at about the 3,400-foot elevation). The project location contains the geometric characteristics that warrant a truck climbing lane. The location was

identified after observing traffic patterns during multiple field visits, analyzing the roadway profile grade, reviewing traffic data, and collecting verbal input from local users.

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 being considered are a Build Alternative and a No-Build Alternative.

The project lies in Kern County on eastbound State Route 58 from post mile 76.3 to post mile 79.8. Total length of the project is approximately 3.5 miles. The project proposes to improve the eastbound direction of travel. Within the limits of the project, State Route 58 is classified as a four-lane freeway except for a short segment near State Route 223, which is classified as four-lane expressway. State Route 58 performs as a westerly extension of Interstate 40 and provides a connection between US Route 101, near Santa Margarita, and Interstate 15 near Barstow. The route serves both interregional and interstate travel. State Route 58 crosses the Tehachapi Mountains, south of the Sierra Nevada, allowing motorists to travel between the Central Valley to Las Vegas, Nevada, and Phoenix, Arizona.

The purpose of the project is to improve traffic flow and operational performance. Improved traffic operations on State Route 58 would allow commuter travel and freight traffic to move more efficiently through the interregional corridor.

Alternatives

The project offers for consideration a Build Alternative and a No-Build Alternative.

Build Alternative

The Build Alternative will install an eastbound 12-foot-wide truck climbing lane, upgrade shoulder widths to the standard 10-foot width, construct a 5-foot maintainable dirt strip situated outside the paved shoulder, and modify the at-grade intersection at Bealville Road and State Route 58. The Build Alternative will also improve drainage, including removal of debris blockers to enhance wildlife connectivity, install post-construction stormwater treatment Best Management Practices, upgrade guardrail, update and install signage, relocate streetlights at the Bealville intersection, and install rumble strips.

Large cut and fill slopes will be required to construct the improvements. The existing condition between post miles 76.3 and 77.2 includes a 7-foot-wide inside shoulder and a standard 3-foot-wide maintainable dirt strip beyond the outside paved shoulder. For this post mile range, the project will widen the existing 7-foot shoulder to 10 feet, install a 12-foot-wide truck climbing lane, and widen the existing 3-foot maintainable drip strip to 5 feet. Therefore, the total widening between post miles 76.3 and 77.2 would be 17 feet. For the remainder of the project limits, post miles 77.2 to 79.8, the existing inside shoulders meet the standard 10-foot width. The project will install a 12-foot-wide truck climbing lane and widen the 3-foot maintainable dirt strip to 5 feet. Therefore, 14 feet of total widening would occur between post miles 77.2 and 79.8. A cross section diagram displaying existing conditions and proposed work is shown in Figure 3.

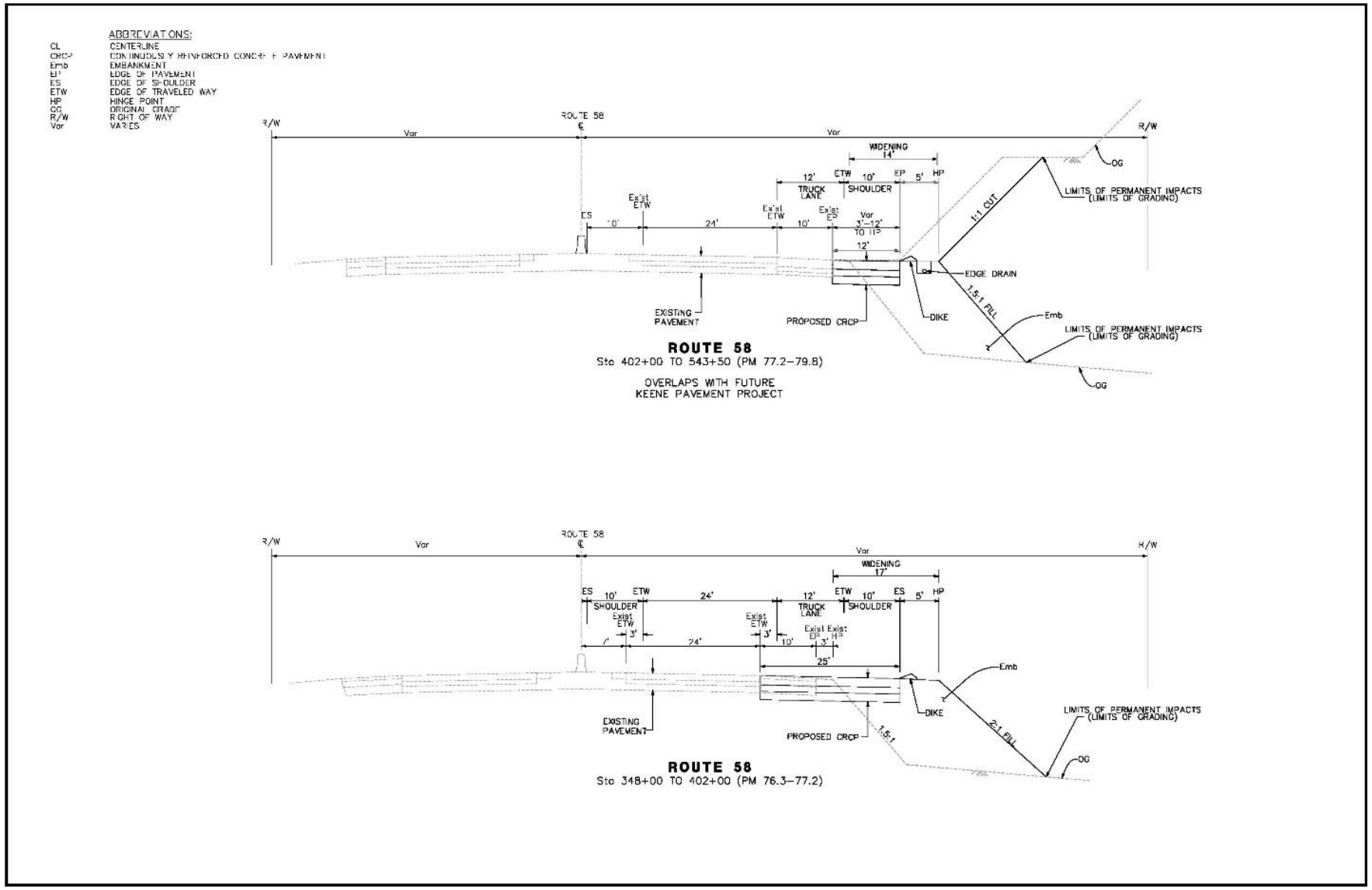

Figure 3 - Typical Cross Sections.

Where feasible, the project will minimize the need to import material by reusing earthwork materials generated onsite. Currently, a geotechnical study is being conducted to determine slope stability in areas requiring steep road cuts to reduce the need to construct retaining walls.

The Bena Road at-grade intersection (post mile 77.06) will be removed to provide access control. Removing this connection will eliminate cross traffic in an existing conflict area. The left-turn pocket from westbound State Route 58 to Bena Road will be removed, and traffic will be diverted 1.4 miles west to the intersection of State Route 223 and State Route 58. The existing westbound left-turn pocket onto Bena Road will be re-striped to provide an acceleration lane for vehicles exiting Bealville Road to travel eastbound on State Route 58. These modifications to the intersection and proposed access control measures will eliminate an existing conflict area and enhance highway operations. A diagram of the changes is provided in Figure 4.

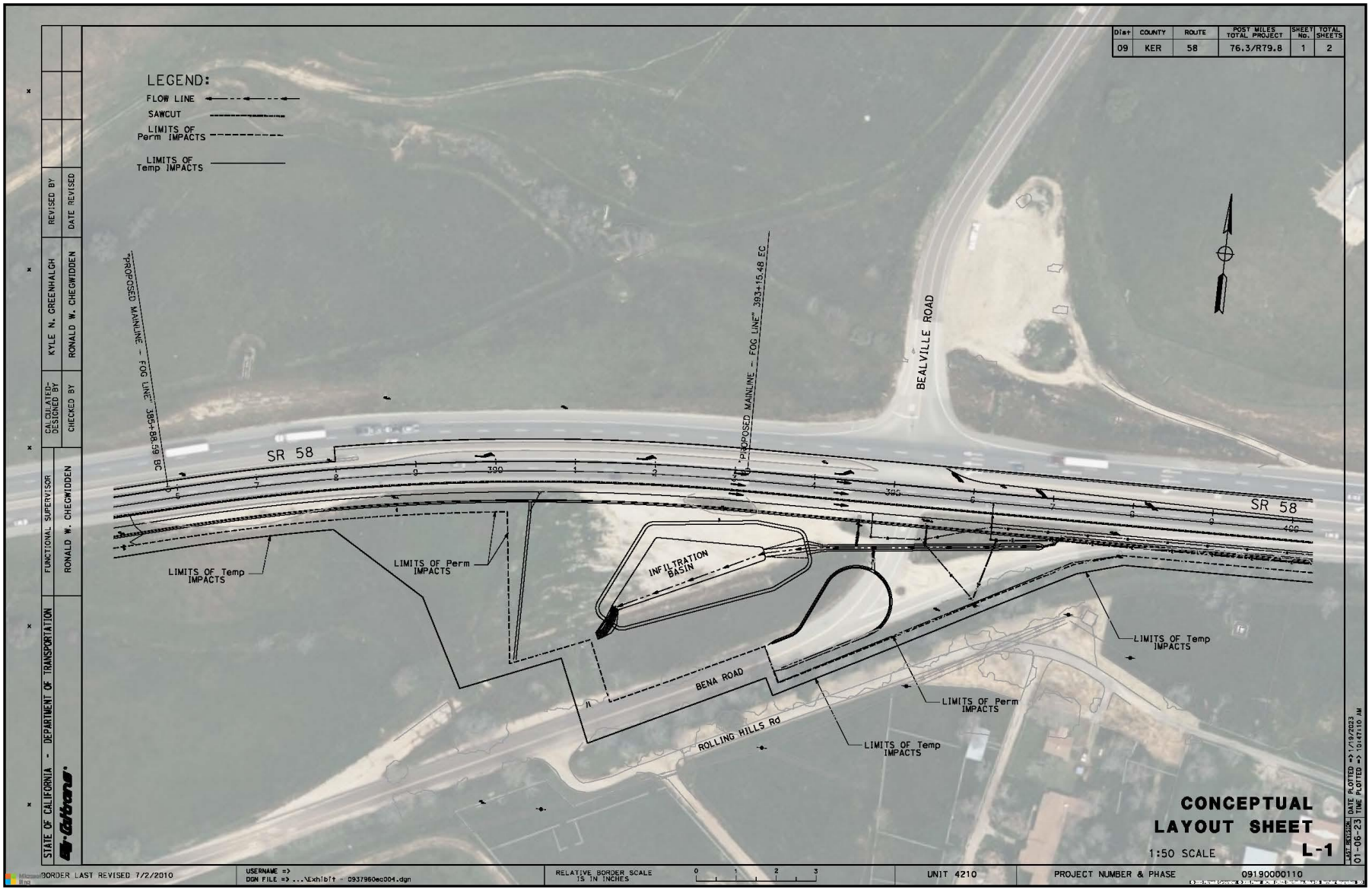

Figure 4 - Proposed work at the Bena Road Intersection, post mile 77.06.

Installation of Permanent Post-Construction Stormwater Treatment Best Management Practices (BMPs) will be implemented to treat the additional stormwater coming off of the new impervious surface created by the roadway widening. Design Pollution Prevention Infiltration areas, infiltration basins and traction sand traps will be implemented to treat the additional stormwater.

The project will also extend culverts and install overside drains to accommodate the roadway widening and remove the existing debris blocker at the Clear Creek culvert and potentially other culvert inlets to promote use by wildlife. Other roadside improvements include installing rumble strips, replacing guardrail, replacing and upgrading signage to meet current standards, relocating the lighting near the at-grade intersection of Bealville Road and State Route 58 and replacing portions of the existing standard right-of-way fencing with wildlife fencing.

The Build Alternative will extend the large 6-foot-diameter culvert at Clear Creek (post mile 78.70) and install a debris deflector separated from the culvert headwall. Figure 5 shows the proposed work at this location. The existing culvert has a debris gate attached to the culvert headwall that blocks wildlife from accessing the culvert to cross under the highway. The proposed separation between the culvert entrance and debris deflector will allow for the passage of wildlife through the culvert.

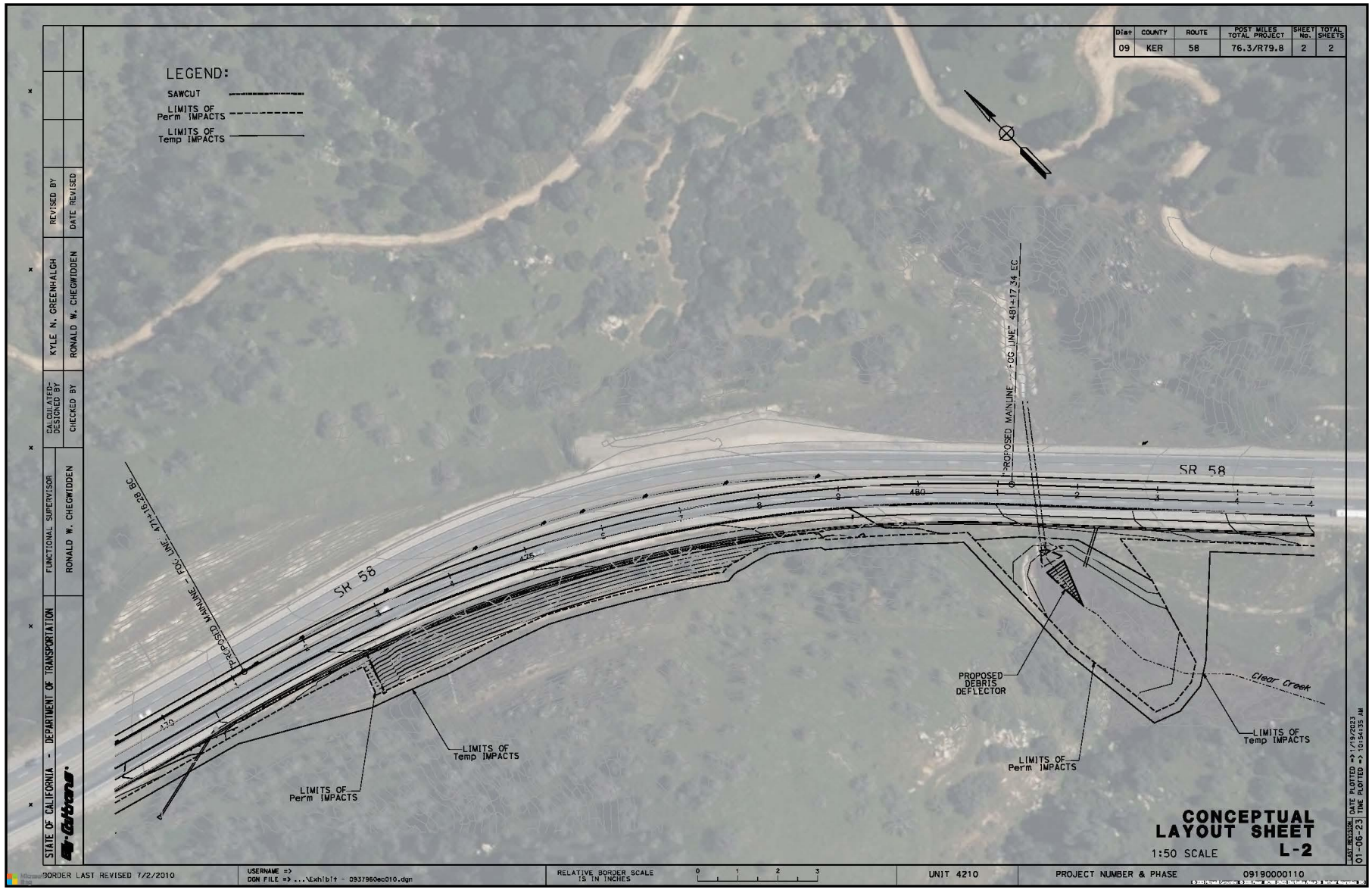

Figure 5 - Proposed work near the Clear Creek culvert, post mile 78.70.

Acquisition of additional right-of-way and temporary construction easements will be required to accommodate the widening and construct the project.

No-Build (No-Action) Alternative

The No-Build Alternative will maintain the existing facilities on State Route 58 within the project limits as-is. The No-Build Alternative will result in continued operational issues due to reduced truck speeds while climbing the grade. Under the No-Build Alternative, no changes will be made to facilitate improvements to traffic flow and operational performance. The continuation of the existing traffic flow for commuters and freight would not meet the project purpose and need. Under the No-Build Alternative, traffic congestion will worsen based on the forecasted increase in truck and vehicle traffic volumes by design year 2047.

Permits and Approvals Needed

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

Agency	Permits, Licenses, Agreements, and Certifications	Status
California Department of Fish and Wildlife	1602 Agreement for Streambed Alteration	To be obtained prior to the start of construction.
California Water Resources Board, Lahontan Region	401 Certification/Waste Discharge Requirement Permit	To be obtained prior to the start of construction.
U.S. Army Corps of Engineers	404 Nationwide Permit	To be obtained prior to the start of construction.
California Transportation Commission	California Transportation Commission vote to approve funds	The California Transportation Commission will be required to vote to approve funding for the project following approval of the final environmental document and final Project Report.

Table 2 - Permits and Approvals Needed.

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

Topics Considered but Determined Not to be Relevant

As part of the scoping and environmental analysis carried out for the project, the following environmental issues were considered but no adverse impacts were identified. As a result, there is no further discussion of these issues in this document.

Existing and Future Land Use
Land adjacent to the project is primarily held in conservation by The Nature Conservancy and Tejon Ranch Preserve, or County zoned agriculture and 1-5 acre Rural Residential (not dense residential). The project would require temporary construction easements for contractor staging and re-establishment of dirt roads. The project would also require right-of-way acquisitions to construct cuts, fills, and retaining walls. Temporary easements and right-of-way acquisitions are not anticipated to affect the existing operation on the property. Easements and acquisitions would be coordinated with the property owner after the project has been approved. All other project-related work is anticipated to occur within the existing state right-of-way. The project is not anticipated to change or affect any existing or future land uses in the area. *2009 Kern County General Plan; November 2022 Community Impact Assessment Memo.*

Consistency with State, Regional, and Local Plans and Programs
State Route 58 through the project area is identified as a vital transportation corridor on state, regional, and local plans. The project is currently programmed in the:

1. Kern Council of Governments (KCOG) Draft RTP 2022
2. KCOG RTIP 2022
3. California STIP (page 23)
4. California 2021 Interregional Transportation Strategic Plan (page 48)
    a. Identified as a Priority interregional facility with strategy of truck climbing and/or passing lane in locations with steep grades.
5. California Freight Mobility Plan 2020 (pages 283-284)
    a. Identifies the need for a truck-passing lane in the proposed project location. Identifies it as a sustainable freight project type.
6. This project also addresses goals in the National Highway Freight Program, specifically:
    a. Investing in infrastructure and operational improvements that strengthen economic competitiveness, reduce congestion, reduce the cost of freight transportation, improve reliability, and increase productivity.
    b. Improving the safety, security, efficiency, and resiliency of freight transportation in rural and urban areas.

November 2022 Community Impacts Assessment Memo.

Coastal Zone
The project is not located within the coastal zone; therefore, there will be no effects to coastal resources.

Wild and Scenic Rivers
There are no waterways listed under the Wild and Scenic Rivers Act (1968) in or adjacent to the proposed project area. National Wild and Scenic Rivers System, accessed October 2022, https://www.rivers.gov/

Parks and Recreational Facilities
There are no historic sites, parks and recreational resources, wildlife or waterfowl refuges that meet the definition of a Section 4(f) resource within or immediately adjacent to the project vicinity. The Caesar Chavez National Monument is 8.4 miles east of the project area, and the Tehachapi Railroad Loop, a California Historic Landmark, is 6 miles east of the project area. There will be no direct or proximity impacts to either of these properties from the project. Therefore, the project is not subject to Section 4(f) provisions of the Department of Transportation Act of 1966. *November 2022 Community Impacts Assessment Memo.*

Farmland
According to the California Department of Conservation's Farmland Mapping and Monitoring Program, no farmlands designated as prime, unique, or farmland of statewide or local importance under the Farmland Protection Policy Act occur within the proposed project limits. *November 2022 Community Impacts Assessment Memo.*

Timberlands
No timberlands protected under the California Timberland Productivity Act of 1982 occur within the project area. *November 2022 Community Impacts Assessment Memo.*

Growth
The Kern County Socioeconomic Growth Model does not forecast significant population growth from 2015-2035 for Kern County. The adopted Kern Council of Governments' regional growth forecast shows little to no growth in this area out to the year 2042. Because of limited water availability, Keene/Hart Flat and Caliente are not likely to see any future subdivision or building activity. The project will construct a truck climbing lane on an existing highway corridor and will not create new access to previously non-accessible areas. The project will not add capacity to State Route 58 and is not expected to change future predicted traffic patterns. Traffic volumes should be the same for both the Build Alternative and No-Build Alternative. The project will not change existing or future planned development in the vicinity of the project area. The project is not growth-inducing. *November 2022 Community Impacts Assessment Memo*.

Community Character and Cohesion
The area adjacent to and surrounding the project site is mostly rural agricultural land. The nearest town is Tehachapi, about 14 miles east of the project area. The addition of the truck climbing lane will relieve roadway congestion and will not divide any communities or significantly impact any residences. No displacements or relocations are associated with the project. No socioeconomic impacts are expected to any population within the vicinity of the project area. The project is not expected to result in long-term or permanent negative effects to community growth, development, or quality of living in the area. The Bena Road at-grade intersection will be removed, but traffic will be able to access Bena Road about 1.4 miles to the west from the State Route 58/223 junction. *November 2022 Community Impacts Assessment Memo*.

Relocations and Real Property Acquisition
The project will require permanent partial property acquisition of 13.61 acres from 7 parcels adjacent to the project area to construct cuts, fills, shoulder widening, and culvert extensions. A 0.33-acre drainage easement is proposed at the Clear Creek box culvert (post mile 78.7) to allow for maintenance activities of the proposed debris deflector and channel grade line. This project will relinquish 0.89-acre of right-of-way at the proposed Bena Road cul-de-sac. The property acquisitions and relinquishment for the Build Alternative are not expected to change the function or usability of the affected properties adjacent to the project location. No relocations are required for the project. *November 2022 Community Impacts Assessment Memo.*

Environmental Justice
The project location is in a mostly rural non-residential area zoned for agriculture. The eastern portion of the project falls within the Keene Census Designated Place. According to the 2020 U.S. Census, the annual median income in the Keene Census Designated Place is $89,115. Minority populations refer to persons who belong to the Black or African American, American Indian and Alaskan Native, Asian, Native Hawaiian and other Pacific Islander race or are of Hispanic or Latino ethnicity regardless of race. According to the 2020 U.S. Census, 27.5 percent of the Keene Census Designated Place population belongs to one of the minority groups listed above. The project will change the Bena Road at-grade intersection, which will provide access control for improved traffic operations on State Route 58. The improvements will require commuters and users going to and from the existing Keene/Hart community off Bena Road to travel an additional 1.4 miles west to the State Route 223/58 junction to access State Route 58. The Keene/Hart community to the south of State Route 58 is not a disadvantaged community, and the proposed changes will not adversely affect this community.

The Caliente Elementary School district is a small community north of State Route 58 off Bealville Road. Based on the available information for the area, the median household income for the Caliente area is less than 80 percent of the California household income, which qualifies the area as a small disadvantaged community. However, the proposed improvements to the Bealville at-grade intersection do not adversely affect the community and ultimately improve operations of the roadway for all users. The project is not expected to result in disproportionate impacts to minority and/or low-income residents in the project area, and the addition of the truck climbing lane will benefit all residents regardless of race, color, national origin, or income. No minority or low-income populations would be adversely affected by the project. Therefore, this project is not subject to the provisions of Executive Order 12898. *November 2022 Community Impact Assessment Memo.*

Utilities/Emergency Services
The project scope does not include any utility relocations. There are no underground utilities in the project impact area. The project will result in benefits to emergency services in the project area. Widening the median shoulder to 10 feet throughout the project limits will enable emergency vehicles to access collision scenes by driving in the median. The widened shoulders will also provide emergency parking for stalled or broken-down vehicles or collisions. The widened median shoulder, the three traffic lanes, and the 10-foot-wide outside shoulder will provide five lanes for emergency evacuation in the eastbound direction. Traffic control will leave the two existing eastbound lanes open during construction, allowing emergency vehicle access through the project area. Access to and from State Route 58 at the Bena Road intersection (post mile 77.06) will be removed, but emergency services will be able to access Bena Road and State Route 58 approximately 1.4 miles to the west from the State Route 58/223 junction. All emergency public services, such as medical services, law enforcement agencies, fire departments, and local ambulance services will be notified prior to construction. *November 2022 Community Impacts Assessment Memo, Right of Way Data Sheet.*

Traffic and Transportation/Pedestrian and Bicycle Facilities
The project will construct a truck climbing lane on an existing highway corridor and will not create new access to previously non-accessible areas. The project will not add capacity to State Route 58 and is not expected to change future predicted traffic patterns. Traffic volumes should be the same with both the Build Alternative and No-Build Alternative. The Bena Road at-grade intersection will be removed, but traffic will be able to access Bena Road about 1.4 miles west from the State Route 58/223 junction. This improvement will remove the existing high conflict left turn from westbound State Route 58 to Bena Road. State Route 58 through the project area is designated as a four-lane freeway except for a short segment near State Route 223, which is

classified as a four-lane expressway. These highway designations restrict pedestrian and bicyclist access along State Route 58 in the project area. During construction, K-rail will be set up at the existing edge of travel way, which will allow both eastbound lanes to remain open for the duration of construction. No impacts to traffic, transportation, pedestrian, or bicycle facilities are anticipated with the project. *November 2022 Community Impacts Assessment Memo, March 2022 Vehicle Miles Traveled Screening Memo.*

Floodplains
There will be no effects to the 100-year floodplain because the project is not located within a 100-year base floodplain. According to the Federal Emergency Management Agency Flood Insurance Rate Maps 06029C2370E, 06029C2400E, and 06029C2825E, the project area sits in an "area of minimal flood hazard."

Hazardous Waste/Materials
The project is in a rural, undeveloped portion of eastern Kern County, and the risk of encountering or disturbing hazardous wastes or buried infrastructure is low. No current or historic sources of contamination within the project limits were identified in databases from the California Department of Water Resources (GeoTracker) or the California Department of Toxic Substances Control (EnviroStor). Treated wood waste generated from guardrail and sign replacements will be required to be handled, stored, and disposed of in accordance with all appropriate state and federal regulations. Roadside soils are anticipated to be excavated onsite and disposed of offsite, which requires testing for aerially deposited lead contamination. A construction task order on-call contract is in place and will be used if contamination is discovered during construction activities. Any materials or substances identified as hazardous would be treated and handled as required by Caltrans' Standard Specifications and Caltrans' Standard Special Provisions, and as required by state and federal regulations. The project is not expected to cause adverse effects as a result of encountering, disturbing, or transporting hazardous materials. *September 2022 Air, Noise, Hazardous Waste, Water, Paleontology Memo.*

Energy
The project will not increase capacity or induce substantial energy use above existing conditions. The project will not result in changes in traffic volumes, vehicle mix, or any other factor that would cause an increase in fuel consumption in the project area over that of the No-Build Alternative. The proposed truck climbing lane will enable traffic to pass more efficiently through the project area in a shorter amount of time, potentially decreasing fuel consumption for eastbound traffic through this portion of State Route 58. Drainage and other permanent stormwater improvements would lengthen intervals between maintenance activities, further reducing energy use associated with maintenance of State Route 58. The project would not cause an increase in long-term (operational) energy consumption from that of the No-Build Alternative.

With almost every construction project, there would be a short-term/temporary increase in energy consumption during the construction period. To assess gasoline and diesel consumed by construction equipment and vehicles, the Road Construction Emissions Model (RCEM), version 9.0.0, provided by the Sacramento Metropolitan Air Quality Management District, was used to estimate carbon dioxide (CO_2) emissions of workers' vehicles and equipment. The U.S. Environmental Protection Agency's greenhouse gas equivalencies formulas were then used to convert CO_2 to fuel volumes. Over an estimated construction duration of 308 days, 1,203 metric tons of CO_2 will be produced, which is roughly equivalent to the amount of CO_2 produced from consumption of 135,390 gallons of gasoline, or 118,193 gallons of diesel. Note that these estimates are based on assumptions made during the environmental planning phase of the project and are considered "ballpark" estimates of energy use. In all projects, Caltrans includes Standard Specifications and Best Management Practices that require contractors to use low-

emission, more fuel-efficient construction vehicles and to limit equipment idling in compliance with mandated California Air Resources Board regulations. Additional measures to minimize energy consumption impacts during construction are discussed in the Chapter 3 Climate Change section. The project will not involve wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation, nor will it conflict with any state or local plan for renewable energy or energy efficiency. *November 2022 Climate Change Memo*.

Human Environment

Visual/Aesthetics

Regulatory Setting

The National Environmental Policy Act (NEPA) of 1969, as amended, 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 U.S. Code 4331[b][2]). To further emphasize this point, the Federal Highway Administration, in its implementation of NEPA (23 U.S. 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.

The California Environmental Quality Act (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 discussion is based on information contained in the January 2023 Visual Impact Assessment.

The project sits along State Route 58 between East Bear Mountain Road and Hart Flat Road in Kern County, California. State Route 58 is configured as a four-lane freeway, with a concrete median barrier beginning just east of the Bena Road intersection and extending through the remainder of the project limits. The project is within the Tehachapi Mountains and Southern Sierra Mountains of southern central California, roughly 2,000 feet above sea level. The landscape is characterized by the Southern Sierra Nevada Mountain Range grassland species. Unvegetated rock outcrops are also common. The landscape also includes Southern Sierra subregions of mid and lower montane forests and woodlands. The rural landscape within the project limits is dominated by rolling hills dotted with oak woodlands and some residential areas near the highway that are typically separated by hills and valleys.

The highway is not currently designated or eligible for Scenic Highway status; however, there is one visual resource within the corridor. The main visual resource within the corridor is the oak woodland matrix, consisting of oak trees and supporting vegetation in the surrounding oak woodland habitat. Mature blue oak, interior live oak and valley oak are all represented in this oak woodland. The hills of the oak woodland are prominent with oaks clustered on the hillsides throughout this corridor. Oak woodlands are listed by the California Department of Fish and

Wildlife as Sensitive Natural Communities in the California Natural Diversity Database due to the rarity of oak woodland community occurrence in the state and globally.

The landscape is characterized by foothill landforms and habitat, accentuated by the curving highway cutting through the rolling hills covered in mature vegetation that includes trees, shrubs, and grasslands, and sporadic open views to surrounding distant hills. The land use in the corridor is mostly agricultural and residential; sparsely populated residential areas are next to horse ranches and other rural land use. Throughout the corridor, viewpoints are primarily from the traveled way perspective. Residential or neighboring views into the corridor are concentrated in the western section of the project, up to the Bena Road crossing.

The project corridor was divided into two “outdoor rooms” or visual assessment units. Each visual assessment unit has its own visual character and visual quality, typically defined by the limits of a particular viewshed. For this project, the following two visual assessment units and their associated key views have been identified (see Figure 6):

- **Landscape Unit A—**From the beginning of the project limits to the Bena Road/Bealville Road intersection: Characterized by rural ranch/grazing landscape, shallow hills and valley, wider views, more grassland dominant and sparse tree spacing. Minimal development and structures are visible in this section. Landscape Unit A is within the western limits of the project, lower in elevation than the remainder of the project limits to the east. The roadway section includes two lanes and shoulders in each direction, concrete median barrier, minimal roadside signage, and no lighting. Intactness and unity are moderately high, as human-made features are not visually prominent, do complement, and do not detract from existing natural features. Key View 1 is contained within Landscape Unit A.

  Key View 1—View from Bena Road, adjacent neighbor facing eastbound traffic, at about post mile 76, Landscape Unit A: This view is open and expansive with views straight on to the roadway as it begins to climb up into the hills. The proposed truck climbing lane widening begins just before this location. The widened lane and shoulder will be visible from this location.

- **Landscape Unit B—**From the Bena Road intersection to the end of the project limits at the Hart Flat Road exit: Characterized by rural and more natural landscape, rolling hills, occasional open views and denser tree spacing dominated by oak woodland. The roadway section includes two lanes and shoulders in each direction, concrete median barrier, minimal roadside signage, and some lighting at the Bena Road intersection. Intactness and unity are high, as human-made features are not visually prominent, do complement and do not detract from existing natural features. Key Views 2 and 3 are contained within Landscape Unit B.

  Key View 2—View from eastbound travel lane, at about post mile 77.4, Landscape Unit B: This view is a typical view as the roadway climbs up into the hills. The view is surrounded by hilly oak woodlands on the south side with north side views opening up to hills in the distance. This view will be altered by the Build Alternative with the slope cut, vegetation removal, and truck climbing lane and shoulder at final design widths.

  Key View 3—View from eastbound travel lane, at about post mile 78.6, Landscape Unit B: This view is typical for the eastern section of the project, where the hills converge, and views are limited by topography to the surrounding hillsides adjacent to the

roadway. This section includes the debris deflector installation and wetland and channel grading activities at Clear Creek.

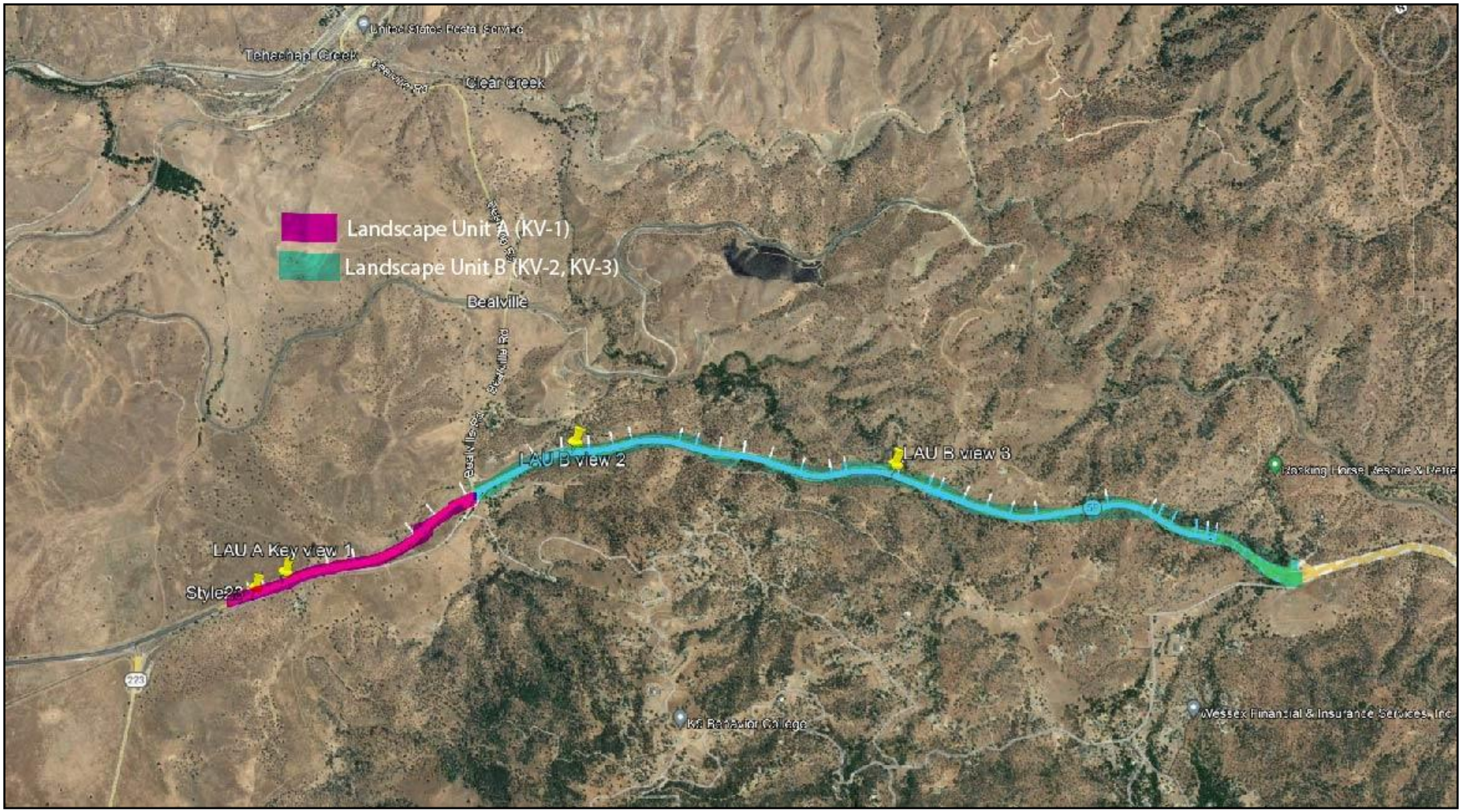

Figure 6 - Visual Assessment Units and Associated Key Views.

Environmental Consequences

The population affected by the project is composed of viewers. Viewers are people whose views of the landscape may be altered by the proposed project, either because the landscape itself has changed or their perception of the landscape has changed. There are two major types of viewer groups for highway projects: highway neighbors and highway users.

Highway neighbors are people who have views to the road. For this project, the following highway neighbors were considered: adjacent landowners and residents: There are adjacent landowners, sparsely sited, with most within the Landscape Unit A area. Most of these residences include buildings and structures that are partially blocked by vegetation and topographic features. There are many dirt roads visible from the roadway. It is anticipated that visibility will be sporadic from these locations, with views from residential areas being more common. Given that many of the views are partially blocked with existing vegetation, it is expected that views of the proposed project would essentially remain the same with the addition of visual minimization measures VIS-1 through VIS-3 and VIS-6 through VIS-11 described in detail later under the Avoidance, Minimization and/or Mitigation Measures heading.

Highway users are people who have views *from* the road. For this project, the following highway users were considered: commuters and locals, and haulers. Commuters and locals are travelers that use the corridor to access local residential areas, schools, businesses, etc., and have direct daily contact with the surrounding natural and cultural environment. Haulers are travelers that use the corridor on an ongoing daily basis, throughout the day and at night. This group uses the corridor mostly as a connector through the southern Sierra and Tehachapi.

Steep cut and fill slopes will be constructed to accommodate the new truck climbing lane. Shoulder and cut slopes will be a visible and prominent feature as seen from the roadway. The new engineered cut slopes will be similar in appearance to existing engineered cut slopes. However, new slopes will be stepped back and extend higher than existing slopes. Vegetation removal will include trees and shrubs, breaking up the visible continuity of the hills and oak woodland habitat. Cut slopes in the more natural rolling hill sections will result in removed vegetation and scattered rock outcroppings and be contoured to mimic existing hillside slopes where feasible. In time, it is anticipated that this will change to a moderate resource change, as vegetation fills in and soils fill in and shift, exposing natural outcroppings and accumulating seed and natural recruitment of vegetation.

The visual character of the project will be somewhat compatible with the existing visual character of the corridor. The new engineered cut slopes will appear similar to existing engineered cut slopes. Proposed cut slopes in more natural-appearing hilly areas will be contoured and rounded to create a more natural appearance and blend in with adjacent landscape. Texture and color of the finished slopes will appear rocky, with monotone soil-color, and will be overall less varied in texture and color exposed after construction. However, in time, erosion control hydroseed will germinate and fill in, soil will accumulate between rocks, and there will be natural recruitment of vegetation. Areas will be enhanced where replacement planting will take place and will eventually fill in and be similar in color, texture and dominance to existing site conditions.

The visual quality of the Build Alternative is moderate. The vividness will diminish slightly overall, with an increase in visible horizontal paved area. Engineered vertical cut slopes will appear taller, as they will be similar in finished slope geometry to existing slope conditions but pushed out further to accommodate the truck lane and shoulder. Cut slopes will be revegetated with hydroseed and planting where feasible, but will take time to fill in and establish, particularly in

areas where slopes are very steep. The unity of the corridor will remain moderate, with an overall balance between the built environment and the natural environment relatively unchanged.

One proposed project element—the debris deflector—will be installed at the upstream end of the culvert at Clear Creek. This feature will receive aesthetic treatment to minimize visibility from the roadway and blend in with the surroundings. The wetland and upland in this area have a natural vegetated appearance. The area will be regraded and then revegetated to be similar to existing conditions. Aesthetic treatment for the debris deflector will help minimize glare visible from the roadway and integrate the structure into the natural wetland surroundings. Seeding and planting will also be used, where appropriate, to screen views of the feature from the roadway. The debris deflector is a moderate-low resource change because it will be blocked from some views and will be stained to have a more natural appearance and blend in into adjacent surroundings.

Relocating streetlights at the Bealville Road intersection will not result in a noticeable change to the area. There are lights in the Bena/Bealville Road intersection currently, and their replacement and relocation are not expected to incur any noticeable change.

Viewers from the neighbor category have direct views to the project corridor, primarily from the western portion of the project in Landscape Unit A, but large portions will be obscured by topography and vegetation from multiple angles: visible only within middle and background ranges, and short in duration for local drivers on connecting streets. Neighbor views within Landscape Unit B are very limited and are not expected to increase from project changes. Viewers from the highway users category traveling in both directions will have a more direct and extensive exposure to the project elements. Having the slower truck traffic in a separate lane will allow the other vehicle traffic to travel at a more consistent pace through the hills, giving the viewers the opportunity to have a less distracted view of the surroundings.

Changes to resources in Landscape Unit A will result in a moderate impact. Views are and will continue to be partially obscured by vegetation and topography. The resource change will result in cut and fill slopes, and vegetation will be removed, making changes initially more noticeable and visible. Cut slopes will be rounded and contoured, resulting in a less engineered appearance, and will be revegetated by seeding and planting. Planting will be placed strategically to minimize views into the roadway and minimize the appearance of cut and fill slopes. In time, as planting and seeding fills in and matures, views from Key View 1 will appear similar to the current existing conditions.

Visual impacts as viewed from Landscape Unit B will result in an initial moderate to moderate-high impact after construction, but will decrease to moderate over time, when planting and seeding fill in and become established. Views in the western portion of Landscape Unit B, such as Key View 2, will appear similar to existing conditions, with engineered cut slopes that are partially vegetated, and seeded and planted vegetation will fill in over time. Down drains will be replaced in-kind, similar in appearance to existing conditions. Visual impacts to Key View 3 and areas within the eastern section of Landscape Unit B will result in a moderate-high visual impact, particularly in the initial after-construction stages. This portion of Landscape Unit B is moderately-high in vividness and intactness, which will be adversely impacted by widening and other project activities.

The term “vividness” can be described as how a viewer perceives or remembers the visual landscape; the term “intactness” is used to describe the degree to which development or encroachment have changed the existing conditions of the landscape. With incorporation of slope rounding and contouring, planting and seeding, and other visual treatments (such as aesthetic treatment to the debris deflector), over time, the visual impacts will be reduced.

Though the project does not sit within Scenic or Eligible Scenic Highway Status limits, the surrounding oak woodland habitat is a visual resource that will be impacted by project activities. The recommended avoidance and minimization measures would reduce the project's visual impact as seen from State Route 58 and the surrounding community. Measures such as highway planting, slope rounding and contouring, and aesthetic treatment to new structures would reduce overall visual changes from project activities.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will be implemented to offset potential impacts to Visual and Aesthetic resources:

VIS-1: All existing vegetation within temporary impact areas will be preserved to the maximum extent practicable.

VIS-2: Measures such as temporary high-visibility fencing will be used to protect vegetation where needed. Pruning vegetation will also be considered to prevent damage from construction.

VIS-3: Any disturbed areas for contractor use, including access roads, staging, and any other temporary area used during construction, will be restored to pre-project conditions.

VIS-4: Construction activities shall limit all construction lighting to within the area of work and avoid light trespass in residential areas through directional lighting, shielding, and other measures as needed.

VIS-5: During construction operations, unsightly material and equipment in staging areas shall be placed where they are less visible and/or covered where possible.

VIS-6: All oak and other native trees greater than 4 inches in diameter at breast height (DBH) that are removed will be replaced in-kind as is feasible only within the project limits. Any highway planting species will be chosen as appropriate for conditions at proposed locations and will reflect the native species within the corridor.

VIS-7: Replacement planting must occur within 2 years of the completion of this parent project and will be funded by the parent project. Noxious weed removal activities within and directly adjacent to planting areas will be addressed as part of the plant replacement contract.

VIS-8: Slope rounding and contouring will be integrated where feasible to be similar in appearance to existing and more natural conditions.

VIS-9: Any new elements that will be visible from the roadway or from surrounding public access areas, such as the debris deflector, will receive aesthetic treatment.

VIS-10: Any elements to be replaced in-kind, such as corrugated metal down drains, will have a similar visual appearance to the current conditions.

VIS-11: Should there be a need for retaining walls or other stabilization features, aesthetic treatment will be required to better integrate these features into the surrounding visual context.

Cultural Resources

Regulatory Setting

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

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 Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (hereafter called Programmatic Agreement) went into effect for Caltrans projects, both state and local, with Federal Highway Administration involvement. The Programmatic Agreement implements the Advisory Council on Historic Preservation’s regulations, 36 Code of Federal Regulations 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. The Federal Highway Administration’s responsibilities under the Programmatic Agreement have been assigned to Caltrans as part of the Surface Transportation Project Delivery Program (23 U.S. Code 327).

The California Environmental Quality Act (CEQA) requires the consideration of cultural resources that are historical resources and tribal cultural resources, as well as “unique” archaeological resources. California Public Resources Code Section 5024.1 established the California Register of Historical Resources and outlined the necessary criteria for a cultural resource to be considered eligible for listing in the California Register of Historical Resources and, therefore, a historical resource. Historical resources are defined in Public Resources Code Section 5020.1(j). In 2014, Assembly Bill 52 (AB 52) added the term “tribal cultural resources” to CEQA, and AB 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.

Affected Environment

The following discussion is based on information contained in the January 2023 Historic Property Survey Report prepared by the Caltrans District 9 Archaeologist and the July 2021 Archaeological Survey Report prepared by Far Western Anthropological Research Group, Inc.

In accordance with the Programmatic Agreement, the Area of Potential Effects for the project was established by the Caltrans Archaeologist in consultation with the Project Manager for the project. The Area of Potential Effects was established as the entirety of the project footprint, including the new 12-foot-wide truck climbing lane and 10-foot-wide inside and outside shoulders, staging areas, and construction area signage. The Area of Potential Effects includes locations of all ground-disturbing activities, such as the large cut and fill slopes that will be re-graded as part of the widening; removal of unsuitable subgrade materials underlaying the new pavement structure; culvert and overside drain work; permanent post-construction treatment Best Management Practices, including Design Pollution Prevention Infiltration areas and infiltration basins; and other additional elements, including the replacement of lighting and guardrail.

A records search was conducted by Far Western Anthropological Research Group, Inc. on December 14, 2020, in support of the Keene Pavement Project, which includes the entirety of the Area of Potential Effects of the current project. An archival review, including the Area of Potential Effects, was conducted at the California Historical Resources Information System's Southern San Joaquin Valley Information Center to identify previously recorded archaeological resources. No previously recorded resources were identified within the Area of Potential Effects.

The following walk-through surveys were conducted within the Area of Potential Effects:

- February 4 to February 8, 2021: Survey of the Area of Potential Effects except for steep roadcut slope areas (Far Western Anthropological Research Group)

- December 7, 2022: Survey of staging area at post mile 76.62 (Caltrans District 9 Archaeologists)

- December 15, 2022: Survey of westernmost project area from post miles 75.34 to 76.30 (Caltrans District 9 Archaeologists)

Field surveys resulted in the identification of four resources within the Area of Potential Effects. Under Attachment 4 of the Programmatic Agreement, all four resources meet the exemption criteria under Property Type 1 (minor, ubiquitous, or fragmentary infrastructure elements). Therefore, these resources are exempt from further evaluation and are not eligible for listing in the National Register of Historic Places. Also, these four resources are not considered historically or culturally significant pursuant to CEQA Section 15064.5 (a).

The following Native American consultation has occurred for the project:

- On February 7, 2022, AB 52 letters were sent, via email, to tribes that had requested AB 52 notifications. A response was received from Jairo F. Avila, Tribal Historic and Cultural Preservation Officer for the Fernandeño Tataviam Band of Mission Indians. Jairo F. Avila stated that the project is situated outside of the Fernandeño Tataviam Band of Mission Indians' ancestral tribal boundaries, and that the band would defer consultation for this project to local tribes.

- May 11, 2022: Email sent to the Native American Heritage Commission requesting a Sacred Lands File search. Search results were negative (July 6, 2022 email response).

- With anticipated delays from the Native American Heritage Commission for a Sacred Lands File search, Section 106 letters requesting input, along with a project area map and project information, were sent to each of the listed parties from the Sacred Lands File results from the Keene Pavement project (EA 09-37920), via email, on May 10, 2022. A response was received from Robert Robinson, Chairman, Kern Valley Indian Community, via email, on this same date. Mr. Robinson stated that he would like to consult on this project, and that he would be out of town for several days. Ms. Sage responded, via email, on May 17, 2022, and she mentioned anticipating a response from him once he was back from out of town.

- On June 9, 2022, Section 106 letters were sent again, via certified mail. With the Native American Heritage Commission Sacred Lands File search received, two additional letters that were omitted from the original notification were sent to the Coastal Band of the Chumash Nation. No new responses were received from the certified mail notifications.

- On July 11, 2022, a follow-up email was sent to Mr. Robinson, Chairman for Kern Valley Indian Community, asking if there was a good time for him to discuss the project.

- On July 12, 2022, Ms. Sage received a follow-up phone call from Mr. Robinson.

- On August 4, 2022, a follow-up phone call was made to Mr. Robinson, and a voice message was left with him. A field review was to be conducted for this project in July, but Ms. Sage came down with Covid. Ms. Sage stated that she was hoping to perform a field review the following week, in mid-August.

- On December 27, 2022, a follow-up email was sent to Mr. Robinson from Laurel Zickler-Martin, District 9 Native American Coordinator. Ms. Zickler-Martin stated that Ms. Sage would be mailing Mr. Robinson a printed copy of the Archaeological Survey Report for the Keene Pavement project for his review. She reminded him that the investigation for the Keene Pavement project covered the entirety of the current project, so the archaeological context and sensitivity assessment also coincide. Ms. Zicker-Martin also stated that Mr. Robinson could contact them with questions or concerns regarding the Archaeological Survey Report after his review, and that a meeting could be set up to discuss further. Consultation with Mr. Robinson, and any other interested parties, will be ongoing for the duration of the project.

The following local historical society/historic preservation group consultation occurred for the project:

- May 11, 2022: Emails sent to the Tehachapi Heritage League Museum, the Tehachapi Depot Railroad Museum, and the Kern County Museum, requesting input. On December 29, 2002, one response was received from Linda Gordon, a representative from the Tehachapi Depot Railroad Museum. Ms. Gordon asked when the project would be starting. Ms. Sage responded to her email stating that she believed that construction would begin in the spring of 2027. No other responses have been received.

Environmental Consequences

There are no historic properties within the Area of Potential Effects; therefore, no historic properties will be affected by the project.

Avoidance, Minimization, and/or Mitigation Measures

No cultural resources-related measures are required for the project because no cultural resources are anticipated to be affected by the project. The project will include the following Caltrans standard provisions dealing with the chance of discovery of previously unknown cultural materials or human remains during construction:

CUL-1: If cultural materials are discovered during 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.

CUL-2: 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 9 Environmental Branch so that staff can work with the Most Likely Descendent on the respectful treatment and disposition of the remains. Further provisions of Public Resources Code 5097.98 are to be followed as applicable.

Physical Environment

Water Quality and Storm Water 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 (any discrete conveyance such as a pipe or a human-made ditch) 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 storm water 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 storm water from industrial/construction and municipal separate storm sewer systems (MS4s).

- 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 the 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 the U.S. Environmental Protection Agency's Section 404 (b)(1) Guidelines (40 Code of Federal Regulations Part 230), and whether the permit approval is in the public interest. The Section 404(b)(1) Guidelines were developed by the U.S. EPA in conjunction with the U.S. Army Corps of Engineers, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative 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 (U.S. EPA defines "effluent" as "wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall") 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. A discussion of the least environmentally damaging practicable alternative determination, if any, for the document is included in the Wetlands and Other Waters section.

State Requirements: Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This 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 and/or groundwater of the state. It predates the Clean Water Act and regulates discharges to waters of the state. Waters of the state include more than just waters of the U.S., like 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.

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, which specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

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, and 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.

National Pollutant Discharge Elimination System Program

Municipal Separate Storm Sewer Systems (MS4)

Section 402(p) of the Clean Water Act requires the issuance of National Pollutant Discharge Elimination System permits for five categories of storm water discharges, including Municipal Separate Storm Sewer Systems (MS4s). An MS4 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 an MS4 under federal regulations. Caltrans’ MS4 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 5 years, and permit requirements remain active until a new permit has been adopted.

Caltrans’ MS4 Permit, Order Number 2012-0011-DWQ (adopted on September 19, 2012 and effective on July 1, 2013), as amended by Order Number 2014-0006-EXEC (effective January 17, 2014), Order Number 2014-0077-DWQ (effective May 20, 2014) and Order Number 2015-0036-EXEC (conformed and effective April 7, 2015) has three basic requirements:

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 storm water and non-storm water discharges; and

3. Caltrans storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs), 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.

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

Construction General Permit

The Construction General Permit, Order Number 2009-0009-DWQ (adopted on September 2, 2009 and effective on July 1, 2010), as amended by Order Number 2010-0014-DWQ (effective February 14, 2011) and Order Number 2012-0006-DWQ (effective on July 17, 2012) regulates storm water discharges from construction sites that result in a Disturbed Soil Area of 1 acre or greater, and/or smaller sites that are part of a larger common plan of development. By law, all storm water 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 the 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 do the following: develop Storm Water Pollution Prevention Plans; implement sediment, erosion, and pollution prevention control measures; and 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 storm water runoff pH and turbidity monitoring, and before-construction and after-construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective Storm Water Pollution Prevention Plan. In accordance with Caltrans' Statewide Storm Water 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, 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 following analysis regarding potential project-related water quality and storm water runoff impacts is based on the Air/Noise/Hazardous Waste/Water/Paleontology Memo (September 2022), Stormwater Data Report (January 2022), and Natural Environment Study (September 2022) completed for the project.

The project lies in the Caliente Creek and Tehachapi Creek watersheds. The project is in a semi-arid region with an average annual precipitation of 10.57 inches in the lower elevations and 14.93 inches in the higher elevations. The project area receives flow from Bear Mountain to the south, and drains north to Caliente Creek, an intermittent stream which empties into agricultural fields in Lamont (south of Bakersfield), near the northeast intersection of Malaga and Panama Roads. Caliente Creek collects water from the northern Tehachapi and southern Sierra Nevada. It is included in the Tulare-Buena Vista Lakes hydrologic subregion. Caliente Creek is also called Tehachapi Creek upstream; parts of the project area drain to Tehachapi Creek. The main water feature within the project area is Clear Creek, an intermittent stream with riparian vegetation that supports a small wetland. Clear Creek is a seasonally flooded blueline stream that drains north to Tehachapi Creek, which then becomes Caliente Creek. Its headwaters are about 3.46 miles (straight-line distance) upstream in the Bear Mountain watershed. The creek flows through a 5-foot-diameter culvert under State Route 58.

Stormwater is collected with a system of dikes and drainage inlets and diverted into culverts that drain into local creeks. The drainage patterns vary because the project lies on rolling hills at elevations ranging between 1,300 and 3,300 feet. The receiving water bodies are Water Canyon Creek, Tweedy Creek, Clear Creek, and Tehachapi Creek. Water Canyon Creek, Tweedy Creek, and Clear Creek drain into Tehachapi Creek, which infiltrates the ground and dries out at lower elevations.

In addition to Clear Creek, six other aquatic resources have been identified that are believed to be Waters of the State and under the jurisdiction of the Central Valley Regional Water Quality Control Board. These six resources are unnamed drainages, three of which are associated with Clear Creek. The boundaries of each resource were mapped via handheld GPS in the field. These aquatic resources, including wetland areas, were previously determined to be non-jurisdictional to the U.S. Army Corps of Engineers under the Clean Water Act as they are tributaries to Caliente Creek, which was determined to not be hydrologically connected to a traditional navigable water in 2014. However, this determination expired in 2019, so a 404 permit for discharges into U.S. Army Corps of Engineers jurisdictional waters will likely be obtained before construction. An official jurisdictional determination will be investigated in conjunction with the U.S. Army Corps of Engineers during the Plans, Specifications and Estimate phase of the project.

Environmental Consequences

During project construction, various project activities will occur above, next to, and within Clear Creek and unnamed jurisdictional drainage areas. Construction-related activities are expected to cause temporary and intermittent impacts to water quality as fugitive dust and materials may enter the aquatic resources. These impacts will be avoided and/or minimized through implementation of Temporary Best Management Practices before, during, and after project construction. Temporary Best Management Practice devices to be used during construction to protect water resources will likely include fiber roll, silt fencing, drain inlet protection, stockpile management practices and weather monitoring. All construction work in creeks and drainages would be conducted when the channel is dry, when feasible, to avoid impacts to water quality.

Existing culverts will need to be extended, and overside drains will need to be installed to accommodate the widening necessary for the truck climbing lane. Jurisdictional water resources will be impacted by the construction of culvert extensions and cut/fill slopes. This work will be considered permanent impacts to Waters of the State, and permanent impacts to Waters of the U.S. (if determined jurisdictional by the U.S. Army Corps of Engineers), requiring a Regional Water Quality Control Board 401 Certification, potentially a U.S. Army Corps of Engineers Section 404 permit, and a California Department of Fish and Wildlife 1602 Streambed Alteration permit before construction. Temporary impacts will occur at each end of each culvert. Temporary impacts will also occur to provide equipment access, minor grading of the channel bottom, and vegetation removal. The impacts are summarized in Table 3.

Feature	Temporary Impacts (Acres)	Temporary Impacts (Square Feet)	Permanent Impacts (Acres)	Permanent Impacts (Square Feet)	Jurisdictional Agency
Wetland (2 locations)	0.092	4,029	0.438	19,098	U.S. Army Corps of Engineers, Water Board, California Department of Fish and Wildlife
Riparian	0.694	30,228	0.810	35,305	California Department of Fish and Wildlife
Streambed	0.179	7,730	0.239	10,440	Water Board, California Department of Fish and Wildlife

Table 3 - Temporary and Permanent Resource Impacts.

Construction activities are not anticipated to cause long-term impacts to water quality. The project is not anticipated to change the existing water discharge rates or water discharge patterns in Clear Creek. The creek's alignment would not be changed after the project is complete. The project will incorporate the Best Management Practices discussed above and is not anticipated to cause long-term impacts to water quality.

The project will disturb over 1 acre of soil and is therefore covered under the Statewide Construction General Permit. A Stormwater Pollution Prevention Plan will be prepared by the contractor for Caltrans' approval before construction activities start. As part of the drainage improvements under the Build Alternative, the project will install permanent treatment Stormwater Best Management Practices to treat roadway runoff in accordance with Caltrans stormwater standards, the California Stormwater Quality Association (CASQA) and the Regional Water Quality Control Board.

The project will create 12.02 acres of new impervious surface area for the truck climbing lane. Stormwater concerns from roadway runoff and new impervious surface created by the proposed truck climbing lane will be addressed by installation of Permanent Post-Construction Stormwater Treatment Best Management Practices. The main stormwater treatment facility would consist of an infiltration basin to be installed at the existing Bena Road connection. Design Pollution Prevention Infiltration Areas are designated throughout the site to reuse existing swales as much as feasible. A drain system will be installed at the toe of a cut slope to address runoff in the area. The design of these areas will be determined by the project engineer in conjunction with the stormwater design coordinator.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will be implemented for the project:

WQ-1: Approved design pollution and prevention treatment Best Management Practices would be incorporated into the project design. Permanent location-specific Best Management Practices would be determined by the project design team in conjunction with the district storm water coordinator and the Regional Water Quality Control Board.

WQ-2: During construction, temporary Best Management Practice devices will be implemented to minimize impacts to water quality during construction. Sediment control barriers such as fiber roll, silt fencing, drain inlet protection, stockpile management practices and weather monitoring would be implemented to prevent movement of pollutants and sediments into water bodies.

WQ-3: All construction work in creeks and drainages would be conducted when the channel is dry, when feasible, to avoid impacts to water quality.

WQ-4: The Central Valley Regional Water Quality Control Board 401 Certification, which will be obtained prior to construction, will outline permit conditions. The permit condition will likely include onsite erosion control work and implementation of Best Management Practices. Biological mitigation measures BIO-15 and BIO-18 will also serve to protect wetlands under the jurisdiction of the Clean Water Act. In addition, Visual measures VIS-1 through VIS-3 and VIS-6 through VIS-8 will also serve to protect waters under the jurisdiction of the Central Valley Regional Water Quality Control Board.

WQ-5: Until a jurisdictional determination has been discussed with the appropriate U.S. Army Corps of Engineers office, the aquatic resources are for now assumed to fall under the jurisdiction of the U.S. Army Corps of Engineers, therefore a 404 permit is expected be obtained prior to construction. Implementation of WQ measures 1-4, including the listed Biological and Visual measures would minimize impacts to such waters.

Geology/Soils/Seismic/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 the California Environmental Quality Act.

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, which 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, please see the Caltrans Division of Engineering Services, Office of Earthquake Engineering, Seismic Design Criteria.

Affected Environment

The following analysis is based on the Air/Noise/Hazardous Waste/Water/Paleontology Memo (September 2022) and the District Preliminary Geotechnical Report (March 2022) completed for the project.

Geology

The project area is underlain by Jurassic-aged (181 million years ago) basement intrusive rock that forms part of the Sierra Nevada batholithic pluton. Geologic maps indicate the site's geology as metavolcanic rocks consisting of hornblendebiotite quartz diorite (meta-volcanic rock), light to medium gray color, equal in granularity, and structurally foliated vertically and steeply dipping to the east (see Figure 7).

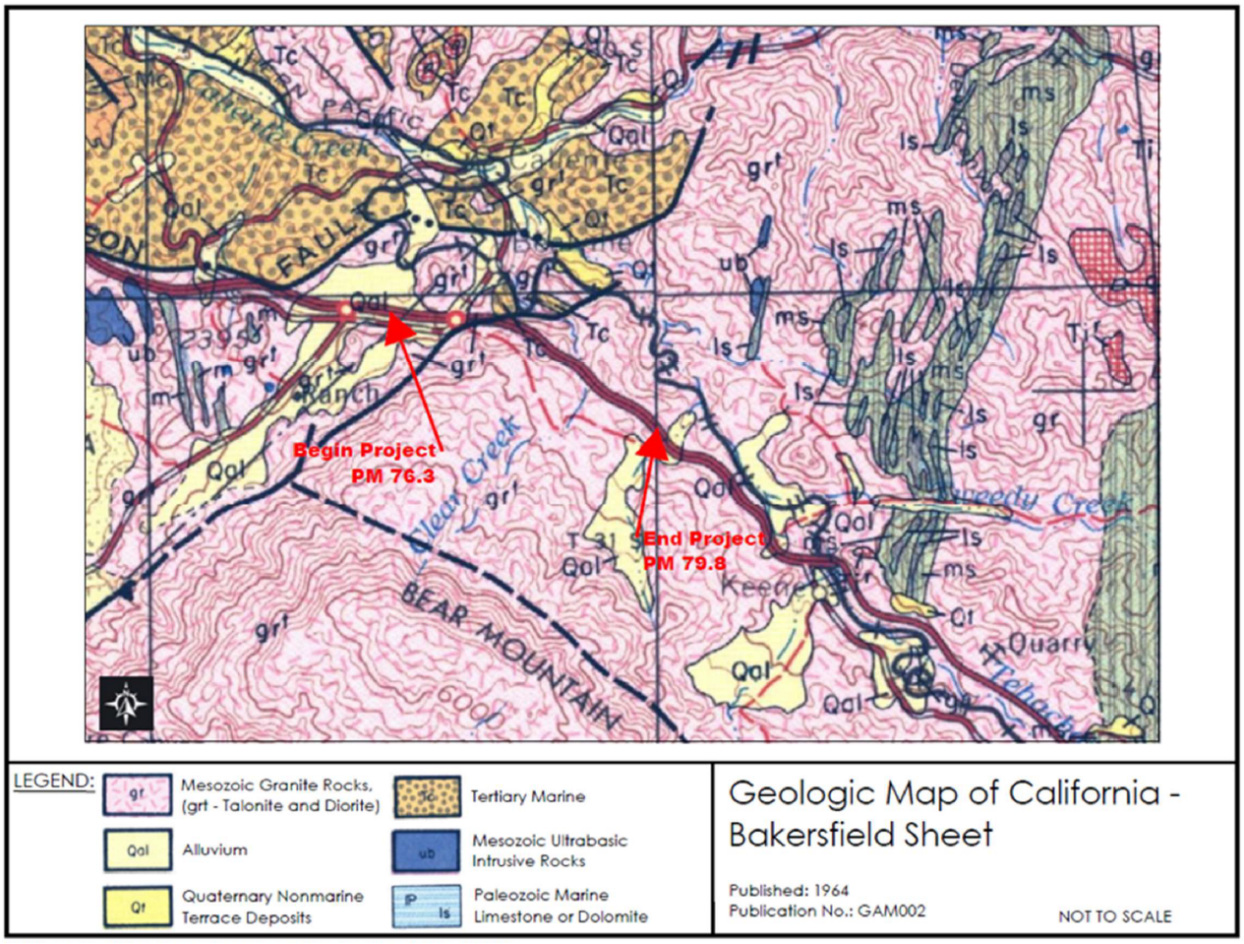

Figure 7 - Geologic Map of California, Bakersfield Sheet. Project area is indicated by red arrows.

A site visit was done in November 2021 and provided an opportunity to see the partial profile and face of the existing cut slopes. The existing cut slopes exposed the subsurface geology, which consists of massive intensely weathered to decomposed meta-volcanic rock (quartz diorite) colored grayish-white. Some local areas of slightly weathered and very slightly fractured outcrops exist within the face of the cut, but most of the cut was covered with a thin veneer of silty sand, which was composed of mineral grains weathering from the underlying bedrock. The bedrock was easy to excavate with a pick and shovel near the toe of each bench due to the weathered condition of the bedrock. The weathering of the quartz diorite bedrock forms a thin veneer of sandy silt soil to varying depths across the face of the cuts.

Based on the literature searches performed for the District Preliminary Geotechnical Report, groundwater information close to the project location was not available. More information will become available once exploratory subsurface drilling is completed for a more detailed geotechnical report that will be produced during the project's Design phase.

Soils

The Soil Survey of Kern County California – Southeasterly Part was reviewed to determine general soil information in the project area. The length of the project falls within a region of Walong sandy loam, moderately deep, well drained, steep soils on mountainous uplands. These soils are formed in residual material weathered from granite. Typically, the surface layers are dark grayish brown and brown sandy loam, while the soil below is a yellowish-brown, strongly weathered granite rock.

Seismic

The California Geological Survey Seismic Hazard maps indicate that the White Wolf fault crosses State Route 58 at about post mile 77.3, slightly east of Bealville Road. The fault zone runs northeasterly, nearly perpendicular to State Route 58, and is composed of reverse-oblique style faults. The depth to bedrock at the site was found to be less than 3 feet across the project site. All or a portion of the project lies adjacent to or within an Earthquake Fault Zone identified by the California Geological Survey.

Based on the dense nature of the underlying sandy loam and weathered granite rock formation material, the potential for soil liquefaction due to ground shaking at the proposed slopes is considered non-existent.

Topography

The existing slopes in the project area are multi-tiered benched cut slopes that were graded during the construction of State Route 58 (see Figure 8). Topographically, the cuts were excavated through moderately steep ridges and hillsides that slope northeast toward tributaries of Clear Creek and Tehachapi Creek. The measured slope angles of the cuts are approximately 45 to 55 degrees, with the benches sloping into the cut at approximately 2 percent to allow water to drain laterally or through corrugated metal pipe down drains to the shoulder of the road. The drainage pipes end at the toe of the slopes in a standard 24-inch-diameter drainage inlet or similar. Stormwater from the road surface is guided into overside drainage via asphalt concrete dikes. The unpaved distance from the edge of pavement to the toe of slope provides for an adequate rock catchment area. The benching and faces of the cuts are well vegetated with grasses, shrubs, and native plants.

Figure 8 - Photo of multi-tiered benched cut slope at post mile 77.66

Environmental Consequences

The area surrounding the project has been designated as an earthquake fault zone on the State Alquist-Priolo Earthquake Fault Zoning Map. However, the project would not directly or indirectly cause the fault to rupture and will conform with all applicable State geotechnical standards. Any temporary ground shaking during construction at the proposed slopes will be temporary and localized and is not anticipated to result in any adverse impacts from liquefaction or landslides. Though the project area has the potential to experience strong seismic ground shaking in the event of a large earthquake, the project will be designed according to Caltrans' seismic standards as established in the Highway Design Manual, minimizing the risk of damage during an earthquake.

Ground-disturbing earthwork associated with shoulder widening and cut slopes may increase soil erosion rates and the loss of topsoil. However, the potential for erosion would be minimal due to the types of soil present in the project area. Soils have not been determined to be expansive. No septic tanks or wastewater systems are present in the project area. The Water Quality Minimization Measures would further minimize erosion and the loss of topsoil.

Further geotechnical testing will be conducted during the project's Design phase to provide the necessary engineering analysis for final design. Exploratory borings may be required to obtain soil properties for slope stability analysis. During the field exploration, groundwater depth will be measured at the project site. Samples recovered during the field exploration will be tested for sieve analysis, Atterberg limit, corrosion test, unconfined compression and/or direct shear tests. Other laboratory tests may be required depending upon the nature of the soils encountered during the exploration.

Pending results of the additional geotechnical studies, additional slope stabilizing design options may be recommended such as anchored wire mesh or retaining walls. Currently wire mesh and retaining walls are not anticipated because the project will maintain/perpetuate existing benches in the cut slope condition as a slope stability measure. Slopes will be revegetated, and duff and

mulch will be applied to encourage natural plant growth as an erosion control measure. The additional geotechnical testing will determine construction methods to minimize the risk for construction workers and the traveling public during construction and after construction is complete.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will be implemented for the project:

GEO-1: The project will be constructed according to Caltrans' seismic design standards, as established in the Highway Design Manual, to reduce the potential of failure due to an earthquake, liquefaction, erosion, or other geological hazards.

GEO-2: The project would limit the amount of earthwork necessary to complete the project.

GEO-3: Additional geotechnical analysis will be conducted before project construction to determine appropriate final design elements required to protect the travelling public from potential geologic hazards.

GEO-4: Slopes will be revegetated, and duff and mulch will be applied to encourage natural plant growth to control erosion.

Paleontology

Regulatory Setting

Paleontology is a natural science focused on the study of ancient animal and plant life as it is preserved in the geologic record as fossils. A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized projects (the project area is not located on federal lands):

- 16 U.S. Code 461-467—This established the National Natural Landmarks program. Under this program, property owners agree to protect biological and geological resources such as paleontological features. Federal agencies and their agents must consider the existence and location of designated National Natural Landmarks, and of areas found to meet the criteria for national significance, in assessing the effects of their activities on the environment under the National Environmental Policy Act.
- 16 U.S. Code 470aaa (Paleontological Resources Preservation Act)—This act prohibits the excavation, removal, or damage of any paleontological resources located on federal land under the jurisdiction of the Secretaries of the Interior or Agriculture without first obtaining an appropriate permit. The statute establishes criminal and civil penalties for fossil theft and vandalism on federal lands.
- 23 U.S. Code 1.9(a)—This requires that the use of federal-aid funds must be in conformity with all federal and state laws.
- 23 U.S. Code 305—This authorizes the appropriation and use of federal highway funds for paleontological salvage as necessary by the highway department of any state, in compliance with 16 U.S. Code 431-433 above and state law.

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

Affected Environment

The following analysis regarding potential project-related impacts to paleontological resources is based on the Air/Noise/Hazardous Waste/Water/Paleontology Memo (September 2022) and the Paleontological Identification Report (July 2002) completed for the project.

A Paleontological Identification Report was completed in July 2022. The project area sits in an eroded and faulted mix of marine and terrestrial sediments on the southeast margin of the San Joaquin Valley. Near Bakersfield, to the northwest, there is an exposure of the highly sensitive and fossiliferous Round Mountain Silt formation known as Shark Tooth Hill. Within the project limits (post miles 77.2 to 77.4, east of Caliente Road), the terrestrial Bena Gravel formation is of a similar age and is also considered highly sensitive. Due to heavy vegetative growth in the area, the exact boundaries of the Bena Gravel exposure were not able to be obtained.

Holocene/Pleistocene alluvial or fan deposits (Qa) seen on geologic mapping were confirmed in the field west of the Caliente Road exit between post miles 76.7 and 77.0 (see Figure 9). Older alluvium (Qoa) was not exposed within this area, and the surficial Qa seen within these limits has low paleontological sensitivity. Much of the eastern half of the project (see Figure 10) and post miles 75.6 to 75.7 have been mapped as Cretaceous granitic rocks at the surface with no paleontological sensitivity. Mapping was confirmed in the field in May 2022.

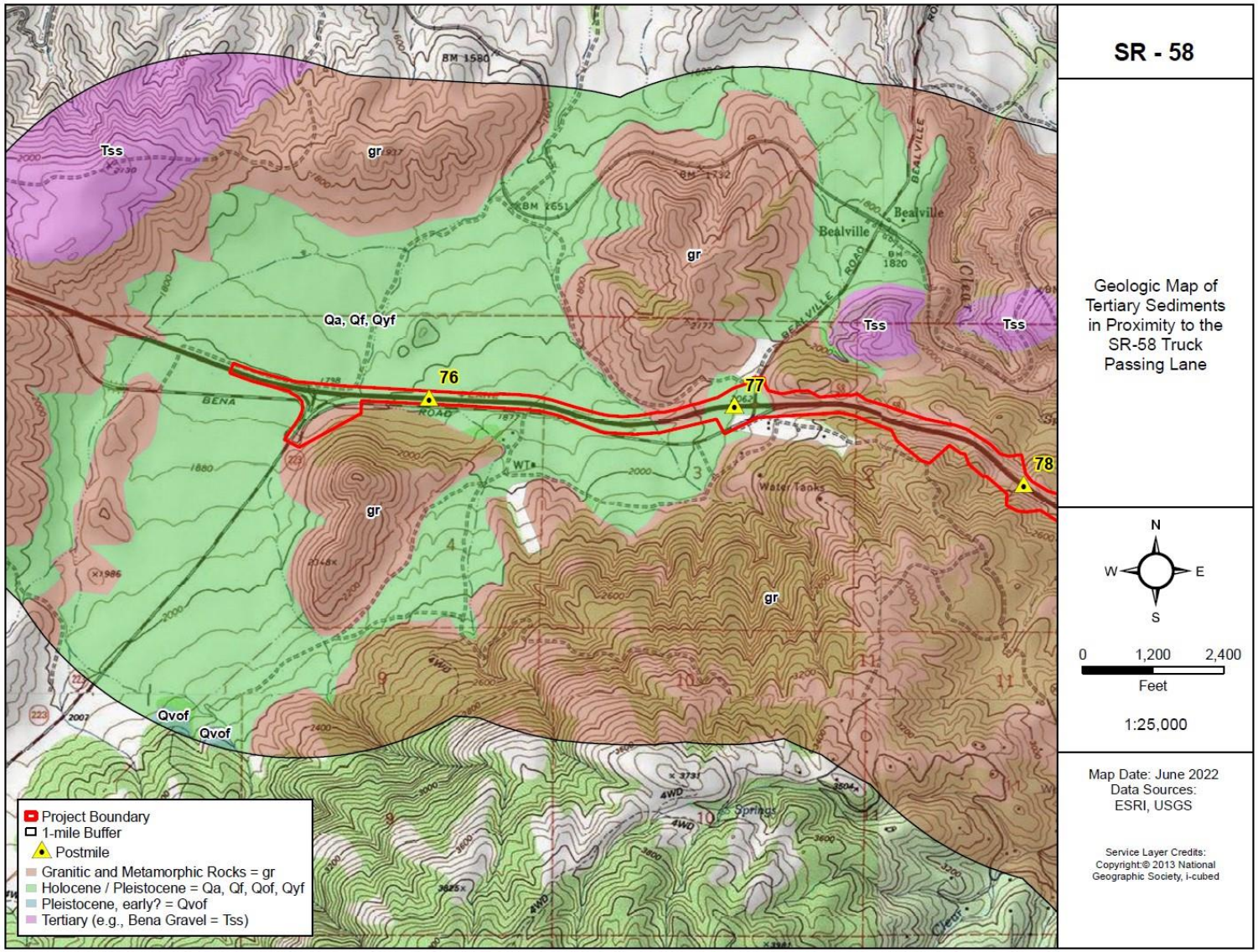

Figure 9 - Geologic Map of Tertiary Sediments in proximity to the State Route 58 Truck Climbing Lane

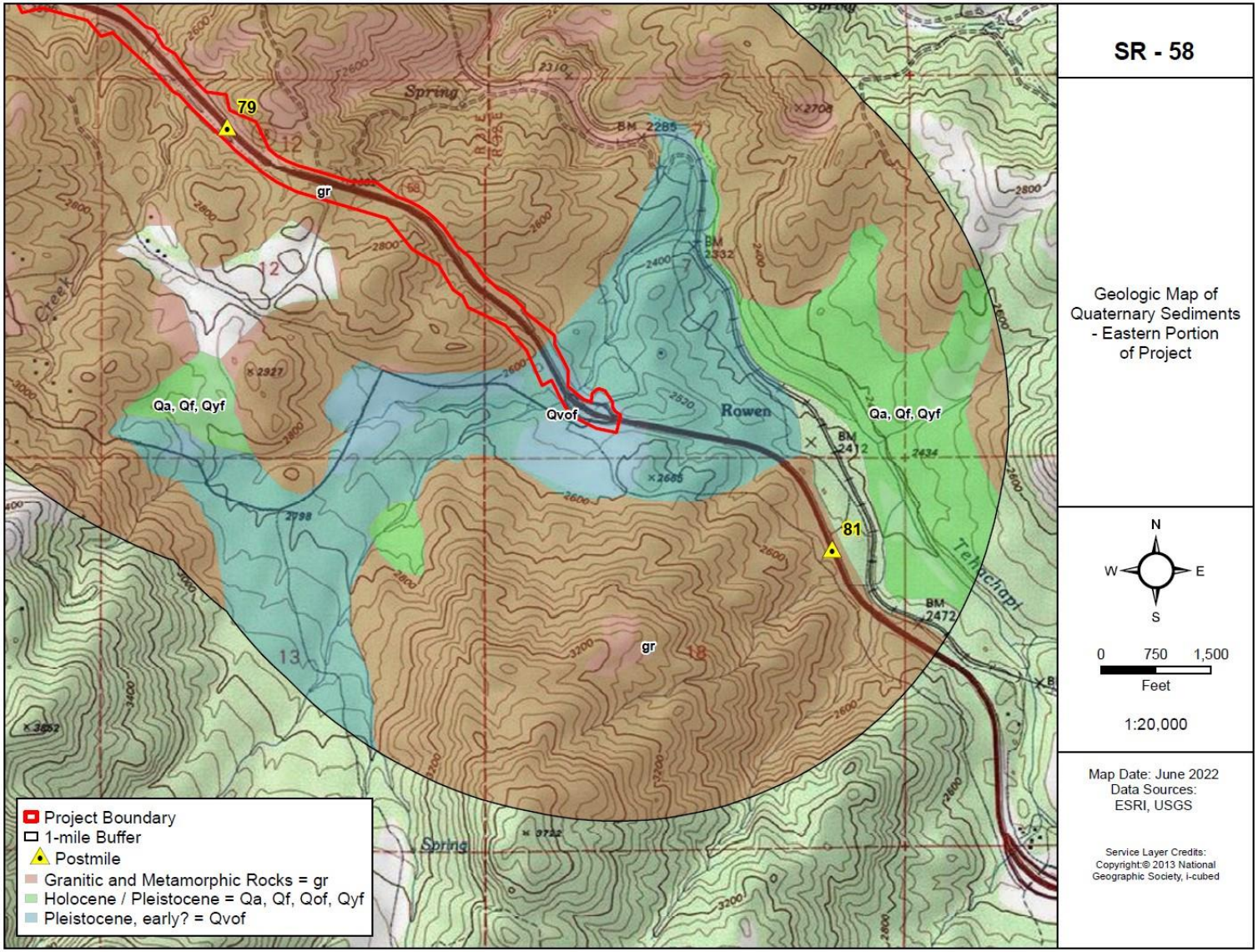

Figure 10 - Geologic Map of Quaternary Sediments in proximity to the State Route 58 Truck Climbing Lane

A paleontological record search was done on June 10, 2022 by Alyssa Bell of the Natural History Museum of Los Angeles County. No localities were found directly within the project impact limits, but several Pleistocene fossil records were identified in the surrounding vicinity, indicating the potential for sensitive geologic units at depths within the project impact area.

Environmental Consequences

The proposed truck climbing lane will be constructed between post miles 76.3 and 79.8. Excavation will be necessary in this area to construct the 14 to 17 feet of widening to accommodate the truck climbing lane. While the proposed excavation depth is not considerable, widening the road cut immediately east of the Caliente Road exit (between post miles 77.2 and 77.5) could potentially impact the fossiliferous Bena Gravel, during the grading process. Vegetation cover in the project area makes it difficult to determine the impact of excavations before project initiation.

The project has the potential to impact paleontological resources during construction, so a Paleontological Mitigation Plan will be prepared. The plan will outline specific avoidance and minimization measures recommended for paleontological resource protection such as paleontological resource training for construction personnel. The plan will also outline the curation agreement, monitoring schedule, and procedures to follow in the event significant fossil resources are recovered during construction activities.

The Middle Miocene Bena Gravel (‘Tss’ symbol on Figures 9 and 10), while not exposed over an extensive area, is recommended for full-time monitoring due to its high paleontological sensitivity. Should excavations for the project determine that the Bena Gravel is not exposed in the road cut between post miles 77.1 and 77.5, the project Paleontology Specialist can determine that monitoring is no longer necessary between these post miles.

Units labelled as Holocene or Pleistocene (‘Qvof’, ‘Qf’, ‘Qyf’, and ‘Qof’ symbols on Figures 9 and 10), also exhibit high sensitivity and require monitoring when excavation depths exceed 3 feet. Despite the lack of Pleistocene organisms in Holocene sediments, they should still be treated as having high sensitivity due to the possibility of Pleistocene sediments at depth.

For portions of the project mapped as granitic or metamorphic (‘gr’ symbol on Figures 9 and 10), no paleontological monitoring is needed.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will be implemented to reduce the potential of impacting paleontological resources during construction:

PAL-1: Preparation of a Paleontological Mitigation Plan—This plan will outline the curation agreement, monitoring schedule and procedures to follow in the event significant fossil resources are recovered during construction activities. The plan will be prepared during the project’s Design phase, once adequate project design information regarding subsurface disturbance location, depth, and lateral extent is available.

PAL-2: Construction Paleontological Training—Prior to excavation activities, paleontological resource training will be delivered for all excavation personnel and Caltrans construction personnel.

PAL-3: Construction Paleontological Monitoring—Paleontological resource monitoring by a qualified paleontological monitor will occur for all excavation activities in the following areas:

1. Between post miles 76.3 and 77.1
2. Between post miles 79.7 and 80.2
3. The road cut adjacent to the eastbound lanes of State Route 58, east of the Caliente Road exit (post miles 77.1 to 77.5)

Air Quality

Regulatory Setting

The Federal Clean Air Act, as amended, is the main federal law that governs air quality, while the California Clean Air Act is its companion state law. These laws, and related regulations by the U.S. Environmental Protection Agency (U.S. EPA) 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 (NAAQS). Federal and state ambient air quality standards have been established for six criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), lead (Pb), sulfur dioxide (SO2), and particulate matter (PM)—broken down for regulatory purposes into particles of 10 micrometers or smaller (PM_{10}) and particles of 2.5 micrometers and smaller ($PM_{2.5}$). In addition, state standards exist for visibility-reducing particles, sulfates, hydrogen sulfide (H_2S), and vinyl chloride. The federal 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 federal and state regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics in their general definition.

Federal air quality standards and regulations provide the basic scheme for project-level air quality analysis under the National Environmental Policy Act. 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 federal standards. “Transportation conformity” applies to highway and transit projects and takes place on two levels: the regional (or planning and programming) level and the project level. The proposed project must conform at both levels to be approved.

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

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

uses travel demand and emission models to determine whether or not the implementation of those projects would conform to emission budgets or other tests at various analysis years showing that requirements of the 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 RTP and FTIP are in conformity with the State Implementation Plan for achieving the goals of the Federal Clean Air Act. Otherwise, the projects in the RTP and/or FTIP 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 that described in the RTP and FTIP, then the proposed project meets regional conformity requirements for purposes of project-level analysis.

Project-level conformity is achieved by demonstrating that the project comes from a conforming RTP and TIP; the project has a design concept and scope ["design concept" means the type of facility that is proposed, such as a freeway or arterial highway; "design scope" refers to those aspects of the project that would clearly affect capacity and thus any regional emissions analysis, such as the number of lanes and the length of the project] that has not changed significantly from those in the RTP and TIP; project analyses have used the latest planning assumptions and Environmental Protection Agency-approved emissions models; and in particulate 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 CO and particulate matter nonattainment or maintenance areas to examine localized air quality impacts.

Affected Environment

An Air Quality Analysis Memo and Federal Air Quality Conformity Finding Checklist were completed by Caltrans staff on September 6, 2022. Under the Federal Clean Air Act, the U.S. Environmental Protection Agency has designated planning areas throughout the country. Areas are classified as being in "attainment" for a given pollutant if they meet the prescribed standards. If an area does not meet the standard, it is designated as a "nonattainment" area for that pollutant.

The project area is within a non-attainment area for federal ozone and state ozone and PM_{10} criteria pollutants. The project area is within an unclassified or attainment area for all other federal and state criteria pollutants (see Tables 4 and 5).

Pollutant	Project Area Status
Carbon Monoxide	Unclassified/Attainment
Lead	Unclassified/Attainment
Nitrogen Dioxide	Unclassified/Attainment
Ozone (8-hour)	Nonattainment
Sulfur Dioxide	Unclassified/Attainment
PM10	Nonattainment (western Kern)/Attainment (Indian Wells Valley); Unclassified elsewhere
PM2.5	Unclassified/Attainment

Table 4 - Federal Area Designations for Criteria Pollutants and National Ambient Air Quality Standards (NAAQS) Status for Kern County.

The source for Table 4 information is the California Air Resources Board; https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations.

Pollutant	Project Area Status
Carbon Monoxide	Unclassified
Hydrogen Sulfide	Unclassified
Lead	Attainment
Nitrogen Dioxide	Attainment
Ozone	**Nonattainment**
Sulfur Dioxide	Attainment
PM10	**Nonattainment**
PM2.5	Unclassified
Visibility-Reducing Particles	Unclassified

Table 5 - California State Designations for Criteria Pollutants and Status for Kern County.

The source for Table 5 information is the California Air Resources Board; https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations.

Table 6 describes criteria pollutants, their principal health and atmospheric effects, and their typical sources:

Pollutant	Principal Health and Atmospheric Effects	Typical Sources
Ozone (O_3)	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage and cancer. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include many known toxic air contaminants. Biogenic volatile organic compounds may also contribute.	Low-altitude ozone is almost entirely formed from reactive organic gases (ROG)/volatile organic compounds (VOC) and nitrogen oxides (NOx) in the presence of sunlight and heat. Common precursor emitters include motor vehicles and other internal combustion engines, solvent evaporation, boilers, furnaces, and industrial processes.
Carbon Monoxide (CO)	CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. CO also is a minor precursor for photochemical ozone. Colorless, odorless.	Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.
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 NOx, sulfur oxides (SOx), ammonia, and reactive organic gases.

Pollutant	Principal Health and Atmospheric Effects	Typical Sources
Nitrogen Dioxide (NO_2)	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain and nitrate contamination of stormwater. Part of the "NOx" group of ozone precursors.	Motor vehicles and other mobile or portable engines, especially diesel; refineries; industrial operations.
Sulfur Dioxide (SO_2)	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing; some natural sources like active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel not used.
Lead (Pb)	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also a toxic air contaminant and water pollutant.	Lead-based industrial processes like battery production and smelters. Lead paint, leaded gasoline. Aerially deposited lead from older gasoline use may exist in soils along major roads.

Table 6 - Air Pollutant Effects and Sources.

Environmental Consequences

The project is exempt from all project-level conformity requirements under 40 Code of Federal Regulations 126 as a truck climbing lane outside of the urbanized area. The addition of the truck climbing lane is anticipated to relieve traffic congestion and decrease truck idling times, which could result in benefits to regional air quality.

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 (CO), nitrogen oxides (NOx), volatile organic compounds (VOCs), directly emitted particulate matter (PM_{10} and $PM_{2.5}$), and air contaminants such as diesel exhaust particulate matter. Ozone is a regional pollutant that is derived from NOx and volatile organic compounds in the presence of sunlight and heat.

Site preparation and roadway construction will involve clearing, cut-and-fill activities, grading, removing or improving existing roadways, and paving roadway surfaces. Construction-related effects on air quality from most highway projects are typically 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 PM_{10}, $PM_{2.5}$, and small amounts of CO, SO_2, NOx, and volatile organic compounds. Potential sources of fugitive dust (PM_{10}) include disturbed soils at the construction site and trucks carrying uncovered loads of soils. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} 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. Caltrans' Standard Specifications on dust minimization require use of water or dust palliative compounds and will reduce potential fugitive dust emissions during construction.

In addition to dust-related PM_{10} emissions, heavy-duty trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO_2, NOx, volatile organic compounds and some soot particulate (PM_{10} and $PM_{2.5}$) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO 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.

SO_2 is generated by oxidation during combustion of organic sulfur compounds contained in diesel fuel. Under California law and 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 SO_2-related issues due to diesel exhaust will be minimal.

Some phases of construction, particularly asphalt paving, may result in short-term odors in the immediate area of each paving sites. Such odors would quickly disperse to below detectable levels as distance from the sites increases.

Construction activities will not last for more than 5 years at one general location, so 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)).

Avoidance, Minimization, and/or Mitigation Measures

Most of the construction impacts to air quality are localized in extent and short-term in duration and, therefore, will not result in long-term adverse conditions. Implementation of the following standardized measures, some of which may also be required for other purposes such as storm water pollution control, will avoid and minimize any air quality impacts resulting from construction activities:

AIR-1: The construction contractor must comply with Caltrans Standard Specifications and all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.

AIR-2: Water or dust palliative will be applied to the site and equipment as often as necessary to control fugitive dust emissions and comply with local air quality regulations.

AIR-3: Soil binder may be spread on unpaved roads used for construction purposes and on project construction parking areas as needed to control dust.

AIR-4: Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by California Code of Regulations Title 17, Section 93114.

AIR-5: A dust control plan will be included within the Contractor's Stormwater Pollution Prevention Plan and will outline the procedures they will implement to control fugitive dust during construction activities. It may include items such as sprinkling, temporary paving, speed limit reductions, and/or timely revegetation of disturbed slopes as needed to minimize construction impacts to existing communities.

AIR-6: Equipment and materials storage sites will be located as far away from residential and park uses as practicable. Construction areas will be kept clean and orderly.

AIR-7: Track-out reduction measures, such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic, will be used.

AIR-8: All transported loads of soils and wet materials will be covered before transport, or adequate freeboard (space from the top of the material to the top of the truck) will be provided to minimize emission of dust (particulate matter) during transportation.

AIR-9: Dust and mud that are deposited on paved, public roads due to construction activity and traffic will be promptly and regularly removed to decrease particulate matter.

AIR-10: To the extent feasible, construction traffic will be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.

AIR-11: Mulch will be installed or vegetation planted as soon as practical after grading to reduce windblown particulate in the area.

Climate Change

Neither the U.S. Environmental Protection Agency nor the Federal Highway Administration has issued explicit guidance or methods to conduct project-level greenhouse gas analysis. The Federal Highway Administration emphasizes concepts of resilience and sustainability in highway planning, project development, design, operations, and maintenance. Because there have been requirements set forth in California legislation and executive orders on climate change, the issue is addressed in the California Environmental Quality Act (CEQA) chapter of this document. The California Environmental Quality Act analysis may be used to inform the National Environmental Policy Act (NEPA) determination for the project.

Noise

Regulatory Setting

The National Environmental Policy Act of 1969 and the California Environmental Quality Act provide the broad basis for analyzing and abating highway traffic noise effects. The intent of these laws is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between the National Environmental Policy Act and the California Environmental Quality Act.

California Environmental Quality Act

The California Environmental Quality Act requires a strictly baseline-versus-build analysis to assess whether a proposed project will have a noise impact. If a proposed project is determined to have a significant noise impact under the California Environmental Quality Act, then the act dictates that mitigation measures must be incorporated into the project unless those measures are not feasible. The rest of this section will focus on the National Environmental Policy Act/Title 23 Part 772 of the Code of Federal Regulations (23 CFR 772) noise analysis. Please see Chapter 3 of this document for further information on noise analysis under the California Environmental Quality Act.

National Environmental Policy Act and 23 CFR 772

For highway transportation projects with Federal Highway Administration involvement (and Caltrans, as assigned), the Federal-Aid Highway Act of 1970 and its implementing regulations (23 CFR 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations include noise abatement criteria that are used to determine when a noise impact would occur. The noise abatement criteria differ depending on the type of land use under analysis. For example, the noise abatement criterion for residences (67 dBA) is lower than the noise abatement criterion for commercial areas (72 dBA). Table 7 lists the noise abatement criteria for use in the National Environmental Policy Act/23 CFR 772 analysis.

Activity Category	Noise Abatement Criteria, Hourly A-Weighted Noise Level, Leq(h)	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B (Includes undeveloped lands permitted for this activity category)	67 (Exterior)	Residential.
C (Includes undeveloped lands permitted for this activity category)	67 (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A–D or F.
F	No noise abatement criterion—reporting only	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical, etc.), and warehousing.
G	No noise abatement criterion—reporting only	Undeveloped lands that are not permitted.

Table 7 - Noise Abatement Criteria.

Figure 11 shows the noise levels of common activities to enable readers to compare the actual and predicted highway noise levels discussed in this section with common activities.

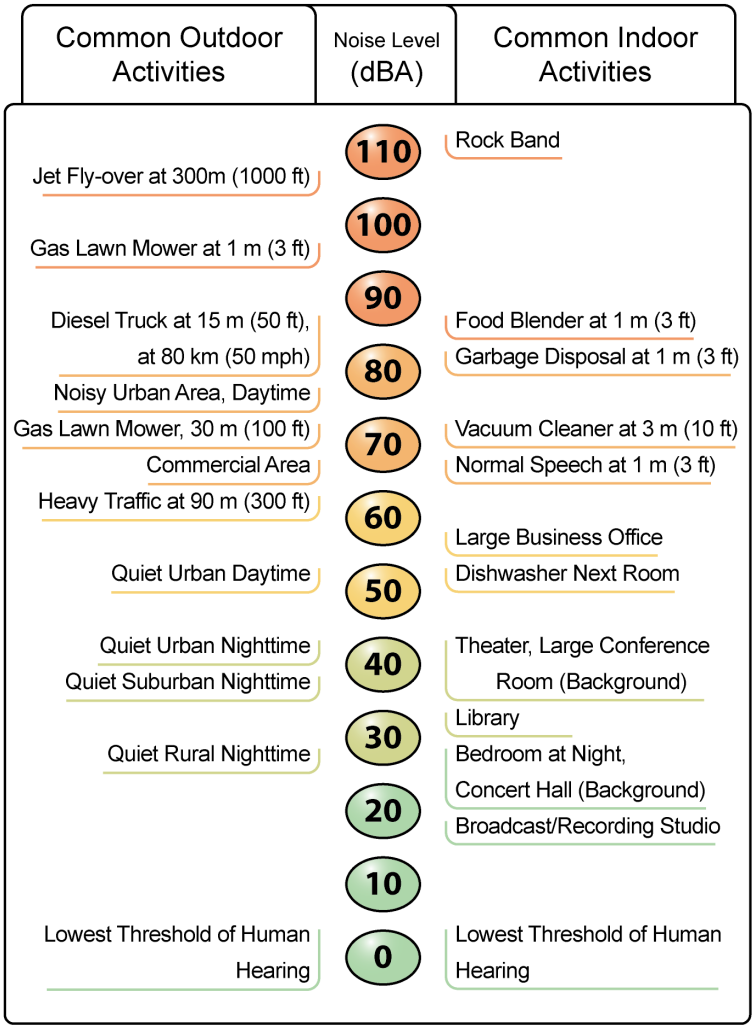

Figure 11 - Noise Levels of Common Activities

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

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

Caltrans' *Traffic Noise Analysis Protocol* sets forth the criteria for determining when an abatement measure is reasonable and feasible. Feasibility of noise abatement is basically an engineering concern. Noise abatement must be predicted to reduce noise by at least 5 dB at an impacted receptor to be considered feasible from an acoustical perspective. It must also be possible to design and construct the noise abatement measure for it to be considered feasible. Factors that affect the design and constructability of noise abatement include, but are not limited

to, safety, barrier height, topography, drainage, access requirements for driveways, presence of local cross streets, underground utilities, other noise sources in the area, and maintenance of the abatement measure. The overall reasonableness of noise abatement is determined by the following three factors: 1) the noise reduction design goal of 7 dB at one or more impacted receptors; 2) the cost of noise abatement; and 3) the viewpoints of benefited receptors (including property owners and residents of the benefited receptors).

Affected Environment

The following analysis regarding potential noise and vibration impacts is based on the Air/Noise/Hazardous Waste/Water/Paleontology Memo (September 2022) and the Noise Study Report (October 2002) completed for the project.

Land use around State Route 58 within the project limits is mostly agricultural and consists mostly of vacant land and open space. Scattered homes on the south side of the highway are set back more than approximately 500 feet from the edge of traveled way. Only two single-family residences within the project post miles are set back less than 500 feet from State Route 58. These residences are south of State Route 58 at an elevation about 100 feet above the highway. Access to these residences was restricted, and the noise specialist could not get contact information for field measurements; therefore, existing and future noise levels at these residences were modeled using the Federal Highway Administration-approved TNM 2.5 noise model.

Traffic on State Route 58 is the main source of noise in the study area. The noise study analyzed noise levels on both sides of State Route 58 within the project limits. To determine traffic noise impacts, main consideration was given to residential exterior areas where frequent human use occurs that would benefit from a lowered noise level. In general, an area of frequent human use is an area where people are exposed to traffic noise for an extended period on a regular basis.

A total of three noise receivers were studied for potential impacts from traffic noise generated by the Build Alternative (see Figure 12). A field investigation was done on September 22, 2022. One site location (R3) was selected for the noise measurements near an open field because the two residences in the project area had access restrictions to their properties. These residences are represented by receivers R1 (at 30136 Rolling Hills Road) and R2 (at 30180 Rolling Hills Road).

Figure 12 - Noise Receiver locations near Bena Road

Environmental Consequences

The project will add a 3.5-mile truck climbing lane on eastbound State Route 58 from post miles 76.3 and 79.8. This proposed improvement will not add capacity and is not anticipated to impact future traffic volumes. The forecasted traffic volumes will be the same under the Build Alternative and the No-Build Alternative. However, because the project would add a new lane, it will meet the criteria as a Type I project per Caltrans 2020 Noise Protocol. Therefore, the noise study focused on the noise impacts generated due to the addition of the new lane and the potential noise impacts to the two residences mentioned above.

All noise measurements were conducted using Brüel and Kjaer model 2238 sound level meters. Traffic was counted during each short-term measurement on State Route 58 near the measurement site and classified by vehicle type (autos, medium trucks, heavy trucks). The purpose of the field noise measurements was to validate the TNM 2.5 model so that the prediction of future noise levels could be made more accurately. Level of Service and design year 2046 forecasted traffic information were used to predict future traffic noise levels and analyze the noise impact at the studied receivers.

The existing noise levels for the two residences were modeled and found to be 58 dBA. The design year (2046, 20 years following completion of construction) noise levels for the studied receivers were modeled and found to be 61 dBA for R1 and 62 dBA for R2 (see Table 8). The modeled design year noise levels considered the increase in forecasted traffic levels as well as the addition of the truck climbing lane. These future noise levels are well below the noise abatement criterion threshold of 67 dBA designated for residential land use; therefore, no abatement was considered for the project.

Receiver I.D.	Barrier ID. and Location	Land Use	Number of Dwelling Units	Address	Property Status	Existing Noise Level Leq(h), dBA	State Route 58 Future Worst-Hour Noise Levels - L_{eq}(h), dBA																				
							Design Year Noise Level without Project L_{eq}(h), dBA	Design Year Noise Level with Project L_{eq}(h), dBA	Design Year Noise Level with Project minus Existing Conditions L_{eq}(h), dBA	Design Year Noise Level without Project minus Existing Conditions L_{eq}(h), dBA	Design Year Noise Level with Project Minus No Project Conditions L_{eq}(h), dBA	Activity Category (NAC)	Impact Type	Noise Prediction with Barrier, Barrier Insertion Loss (I.L.), and Number of Benefitted Receptors (NBR)											
														8 feet			10 feet			12 feet			14 feet		
														L_{eq}(h)	I.L.	NBR	L_{eq}(h)	I.L.	NBR	L_{eq}(h)	I.L.	NBR	L_{eq}(h)	I.L.	NBR
R1	N/A	RES	1	30136 Rolling Hills Road	--	58	58	61	3	0	3	B	None	--	--	--	--	--	--	--	--	--	--	--	--	--
R2	N/A	RES	1	30180 Rolling Hills Road	--	58	59	62	4	1	3	B	None	--	--	--	--	--	--	--	--	--	--	--	--	--
R3	N/A	UL	--	Near Bena Road and Rolling Oaks Road	--	64	65	68	4	1	3	N/A	N/A	--	--	--	--	--	--	--	--	--	--	--	--	--

Note: A/E= Future noise conditions approach or exceed the noise abatement criteria
RES: residences
Bold: noise impacts above noise abatement criteria
I.L: Insertion Loss
NBR: Number of benefitted residences
Blvd.: Boulevard
Bold letter receivers/properties: properties considered to be relinquished under Alternative 1
UL: Undeveloped Land

Table 8 - Predicted Future Noise and Barrier Analysis for the Build Alternative

Additional noise will be created during construction activities but, with minimal nearby receptors within 500 feet of the project limits, the public will not experience any significant noise-related impacts during construction.

It is also possible that certain construction activities could cause intermittent localized concern from vibration in the project area. During certain construction phases, processes such as earth moving with bulldozers, the use of vibratory compaction rollers, demolitions, or pavement breaking may cause temporary construction-related vibration impacts. The traveling public will experience temporary elevated noise and vibration levels during working hours. Standard specifications for work hours during daytime on weekdays only will be included in the project specifications.

Avoidance, Minimization, and/or Abatement Measures

NOI-1: Construction noise control will conform to the provisions in Section 14-8.02 “Noise Control” of the Caltrans Standard Specifications. The noise level from the contractor’s operations, between the hours of 9:00 p.m. and 6:00 a.m., will not exceed 86 dBA Leq at a distance of 50 feet.

Biological Environment

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 of 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 later in the Threatened and Endangered Species section. Wetlands and other waters are also discussed later in a separate section.

Affected Environment

The following analysis is based on the Natural Environment Study (September 2022) that was completed for the project.

The Biological Study Area includes all areas that could be permanently or temporarily impacted by the project. A minimum 30-foot buffer was set around the Project Impact Area, which is the area in which temporary or permanent construction impacts occur. The project lies in the Tehachapi Pass, which crosses the Tehachapi Mountains at or around 2,600 feet in elevation above mean sea level. State Route 58 delineates the northern end of the Tehachapi Mountains from the southern end of the Sierra Nevada (Piute Mountains).

The Biological Study Area is in a region that is characterized by a hot to cold and semi-arid to sub-humid climate. Within the Biological Study Area, much of the western edge of the project area consists of upland slopes adjacent to the highway, wetland meadows, and river floodplains. Along with Tehachapi Creek and Clear Water Creek, several unnamed drainages are present throughout the Biological Study Area. The town of Tehachapi, just east of the project area, has a population of 12,680 and includes a small airport.

The Biological Study Area has been impacted by adjacent ranches and its use as a transportation corridor. Land surrounding the project is managed mostly for livestock pastures and some small businesses and residences. However, most of the Biological Study Area and surrounding landscape is vegetated and contains natural or semi-natural vegetation communities such as non-native annual, perennial grassland and annual forbs, blue oak-foothill pine woodland, California buckeye woodland, non-native hardwood (tree of heaven) forest, rabbitbrush scrub, coastal scrub, interior live oak forest and woodland and riparian scrub wetland.

The dominant tree species within the Biological Study Area consists of gray pine (Pinus *sabiniana*), interior live oak (Quercus *wislizeni*), blue oak (Quercus *douglasii*), and tree of heaven (Ailanthus *altissima*). Much of the project is covered in Mediterranean California naturalized annual and perennial grassland, which includes ripgut brome (Bromus *diandrus*), pepperweed (Lepidium *latifolium*), Mediterranean grass (Schismus sp.), rabbitfoot polypogon (Polypogon *monspeliensis*), shortpod mustard (Hirschfeldia *incana*), alfalfa (Medicago *sativa*), and Russian thistle (Salsola *tragus*). Ground cover mostly consists of stinging nettle (Urtica *dioica)*, California mugwort (Artemisia *douglasiana*), tarragon (Artemisia *dracunculus*).

Thirteen vegetation community types were identified within the Biological Study Area (Natural Environment Study, September 2022). Only one of the 13 natural communities within the Biological Study Area is listed as a Sensitive Natural Community by the California Department of Fish and Wildlife. The Oak Woodland Plant Community is considered a natural community of concern due to the rarity of the community in the state and globally throughout its entire range. Oaks are relatively slow-growing trees and are rare due to land clearing for agriculture and grazing.

Two species of oak trees were found within the Biological Study Area. Blue oak (Quercus *douglasii*) and interior live oak (Quercus *wislizeni*). Both species are included in the Quercus (*agrifolia, douglasii, garryana, kelloggii, lobata, wislizeni*) Forest and Woodland Alliance (or plant community). According to the California Department of Fish and Wildlife Special Plants List, none of these oak species have special status or listing within federal or state regulations, but as mentioned above, all oak woodlands are listed by California Department of Fish and Wildlife as Sensitive Natural Communities and therefore are addressed in this document.

Field surveys within the Biological Study Area were conducted June 23 and 24 in 2021. The blue oak typically grows to 19 to 65 feet tall and has grayish bark. This species is commonly found in valleys and foothills in oak woodland and oak savannah vegetation communities. The blue oak prefers habitat below 3,500 feet in elevation. The species occurs in Trinity and Shasta counties, south through the Coast Ranges and along the foothills of the Sierra Nevada and Tehachapi Mountains, southern Santa Barbara, northern Ventura, and northern Los Angeles counties as well as the Channel Islands.

The interior live oak appears as an evergreen shrub or tree with bark becoming gray and furrowed. This species is commonly found on mountain slopes and canyons in chaparral, oak woodland, big cone Douglas fir-canyon oak forest, and Coulter pine forest vegetation communities. The interior live oak prefers habitat between 3,000 and 6,600 feet in elevation. The species occurs in Humboldt and Shasta counties south through the Coast Ranges, Sierra Nevada Range, Traverse and Peninsular Ranges through San Diego County and south into Mexico.

Habitat Connectivity

Habitat connectivity refers to the degree that wildlife can move unimpeded across habitats for natural processes such as seasonal migration, breeding, predator-prey relationships, and (re)colonization. Habitat fragmentation and direct mortality of wildlife via roads is one of the leading threats to biodiversity and ecosystem resiliency. Some of the wildlife species occurring

within and adjacent to the Biological Study Area include mountain lion, mule deer, black bear, elk, bobcat, badger, fox, as well as numerous small mammal and reptile species. State Route 58 bisects habitat from the Sierra Nevada Range through the Tehachapi Mountains and onward to the coastal and Southern California mountain ranges.

The California Wildlife Barriers 2020 report published by the California Department of Fish and Wildlife describes the project Biological Study Area as one of the highest priority wildlife barriers in the state. The 2010 joint Caltrans and California Department of Fish and Wildlife report, *California Essential Habitat Connectivity Project*, identifies the habitat in and adjacent to the project Biological Study Area as an irreplaceable, essential connectivity area for wildlife passage. In 2003, South Coast Wildlands, a non-profit organization dedicated to ensuring functional habitat connectivity across diverse wildland networks, produced the *South Coast Missing Linkages* report in coordination with many stakeholder partners and agencies. The report includes a modeled linkage corridor between the southern Sierra Nevada Mountain Range to the Coast Ranges through the Tehachapi area as shown in Figure 13. Hereafter, this area will be referred to as the Tehachapi Wildlife Corridor.

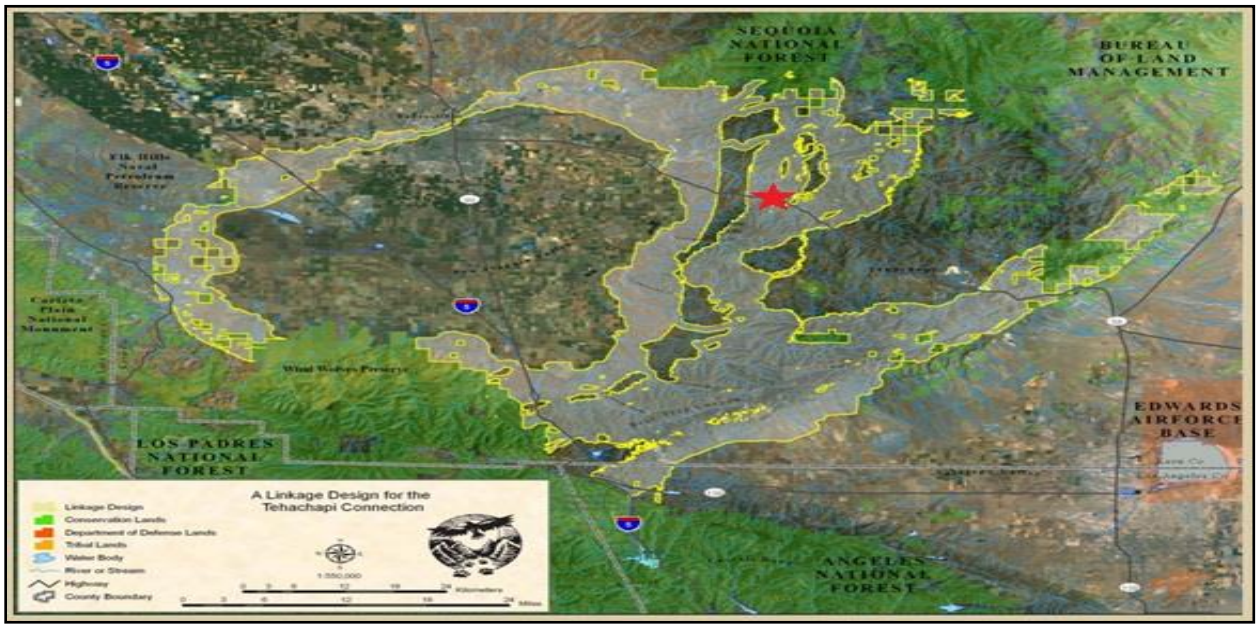

Figure 13 - Map adapted from the South Coast Wildlands Project August 2003 South Coast Missing Linkages: Linkage Design for the Tehachapi Connection report. The red star indicates the project location within a priority linkage corridor for wildlife.

Numerous species of special concern have the potential to occur within the Biological Study Area, and many are listed as threatened or candidate species under the California Endangered Species Act. However, these species were not identified on the species lists pulled from the U.S. Fish and Wildlife Service or the California Natural Diversity Databases and are therefore discussed under the Habitat Connectivity section of this document only because they would both benefit from improved connectivity within this essential habitat connectivity area.

The mountain lion populations in the evolutionary significant unit in Southern California and the Central Coast of California are currently listed as candidate species under the California Endangered Species Act. Genetic research studies have concluded that human-created barriers (roads) restrict connectivity for mountain lion populations. The Tehachapi Wildlife Corridor has

been identified by California Department of Fish and Wildlife as an important corridor for mountain lion movement from the Sierra Nevada to the evolutionary significant unit.

Gray wolves (*Canis lupus*) are listed as endangered under the California Endangered Species Act and are beginning to repopulate in California. A male gray wolf was hit by a vehicle about 30 miles from the Tehachapi Wildlife Corridor along Interstate 5 in Kern County. The wolf was a GPS-collared wolf that was detected on a remote camera photo in Kern County on May 15, 2021. The California Department of Fish and Wildlife identified this wolf as OR-93, which was born in 2019 in Oregon. The OR-93 wolf spent over half his life in California. It's likely that OR-93 could have easily traveled through the Tehachapi Wildlife Corridor because he averaged 16 miles per day and covered at least 935 miles in California.

Between 2002 and 2021 within the project Biological Study Area, the Caltrans roadkill database documented 22 wildlife vehicle collisions (see Table 9).

Roadkill Species (2002-2021)	Occurrences
Mountain lion *(Puma concolor)*	1
Black bear *(Ursus americanus)*	3
Bobcat *(Lynx rufus)*	3
Coyote *(Canis latrans)*	4
Mule deer *(Odocoileus hemionus)*	10
California quail *(Callipepla californica)*	1
TOTAL	**22**

Table 9 – Wildlife Vehicle Collisions documented in the Caltrans roadkill database.

Wildlife vehicle collisions are commonly underreported; therefore, the above data is a conservative estimate of wildlife vehicle collisions within the project Biological Study Area. It is likely that many more wildlife vehicle collisions have occurred between 2002 and 2021 on State Route 58 within the Biological Study Area. The Caltrans roadkill database documented 108 wildlife vehicle collisions occurring along the whole Tehachapi Wildlife Corridor from 2002 to 2021. The Federal Highway Administration reports the average cost from a collision with a deer is $6,717; this would equate to costing taxpayers a minimum of $67,170 within the Biological Study Area and $315,699 within the whole Tehachapi Wildlife Corridor, just for deer collisions. A study conducted by the Nature Conservancy discovered 26 black bears were killed by vehicle collisions in the Tehachapi Wildlife Corridor in 2014 alone. The study theorizes the cause of this spike in collisions to be related to a growing bear population, severe drought, and overall effects of climate change.

State Route 58 is a four-lane expressway/freeway (two eastbound and two westbound lanes), with a concrete median barrier ranging from 3 to 6 feet tall extending through most of the route within the Biological Study Area. This barrier inhibits many wildlife species from crossing the highway due to the inability to scale the barrier and navigate traffic. As numerous research studies have found, existing and designated wildlife crossing structures built in conjunction with wildlife directional fencing can reduce wildlife vehicle collisions and allow for improved habitat connectivity. No designated wildlife crossing structures occur along the Tehachapi Wildlife Corridor. There are, however, many structures built for water drainage (culverts) that wildlife can use to access habitat while avoiding the risks of crossing the highway, though many of the drainage structures are partially blocked by debris-catching devices at the culvert inlets, which inhibit medium to large species of wildlife from physically entering or exiting these facilities (see Figure 14).

Figure 14 - Debris deflector structure located on a 5-foot culvert inlet within the project area. Images show a view from outside (A) and inside (B) the structure. Wildlife have difficulty using the culvert to pass under the roadway because of the structure.

The Tehachapi Wildlife Corridor is an identified wildlife connectivity corridor of high importance in the state. Because wildlife connectivity corridors are evaluated under the California Environmental Quality Act for project impacts, Caltrans and partners began studying the area to

allow adequate time to collect data for evaluation. Caltrans District 9 Biology Unit, in collaboration with The Nature Conservancy, California Department of Fish and Wildlife Region 4, and the University of California, Davis, began a study to assess habitat connectivity along the entire Tehachapi Wildlife Corridor. The study was initiated in March 2021 and covers State Route 58 in Kern County from post miles 75.0 to 109.0 and adjacent habitat. Objectives of the study include the following:

1. Do a hot spot analysis to determine priority segments of State Route 58 where roadkill is most significant.

2. Inventory the existing Caltrans facilities within the Tehachapi Wildlife Corridor for habitat connectivity and wildlife use of the structures. This includes a remote camera study looking at wildlife use of existing transportation facilities (culverts and bridges).

3. Assess wildlife use of adjacent habitats, including global positioning satellite collaring (GPS-collaring) of mountain lions, black bears, and mule deer to determine travel routes within the Tehachapi Wildlife Corridor.

Caltrans and collaborators anticipate identifying potential priority areas to address and develop mitigation measures that would reduce wildlife vehicle collisions and enhance wildlife connectivity with a focus on large to medium mammals. This information could be used in the future to (1) determine where wildlife fencing could be installed along the roadway to direct wildlife to existing high-priority structures, (2) determine whether or not existing structures are adequate for wildlife passage or need enhancements, and/or (3) determine if new crossing structures would be needed to provide safe passage for wildlife species over or under the highway.

Hot Spot Analysis

Analysis of Caltrans' wildlife vehicle collision data was done using a hot spot analysis tool. The tool identifies hot spots (high level of wildlife vehicle collisions) and cold spots (low level of wildlife vehicle collisions) that are statistically significant. State Route 58 (post miles 75.0 to 109.0) was split within the Tehachapi Wildlife Corridor into half-mile road segments for the analysis. Maps showing the hot spot analysis can be found below (see Figure 15). A gradient from dark blue to dark red indicates a statistically significant cold spot to a statistically significant hot spot, respectively. The project Biological Study Area is within a statistically significant cold spot, meaning wildlife vehicle collisions are not commonly occurring within the Biological Study Area relative to the remainder of the Tehachapi Wildlife Corridor. A map of roadkill density for the project area is provided in Figure 16. Roadkill density is low in the project Biological Study Area when compared to other sections of State Route 58 within the Tehachapi Wildlife Corridor.

Hot spots analysis and roadkill density maps are helpful in determining areas where wildlife vehicle collisions could be reduced, and they also provide an indication of where wildlife may choose to travel. However, hot spot and roadkill density analyses do not provide complete information on how the road and associated facilities may act as a barrier for wildlife movement. Evaluating the use of existing facilities (culverts) for use by wildlife and review of data collected from global positioning satellite (GPS) collars on wildlife can further aid in understanding how a segment of highway impacts habitat connectivity.

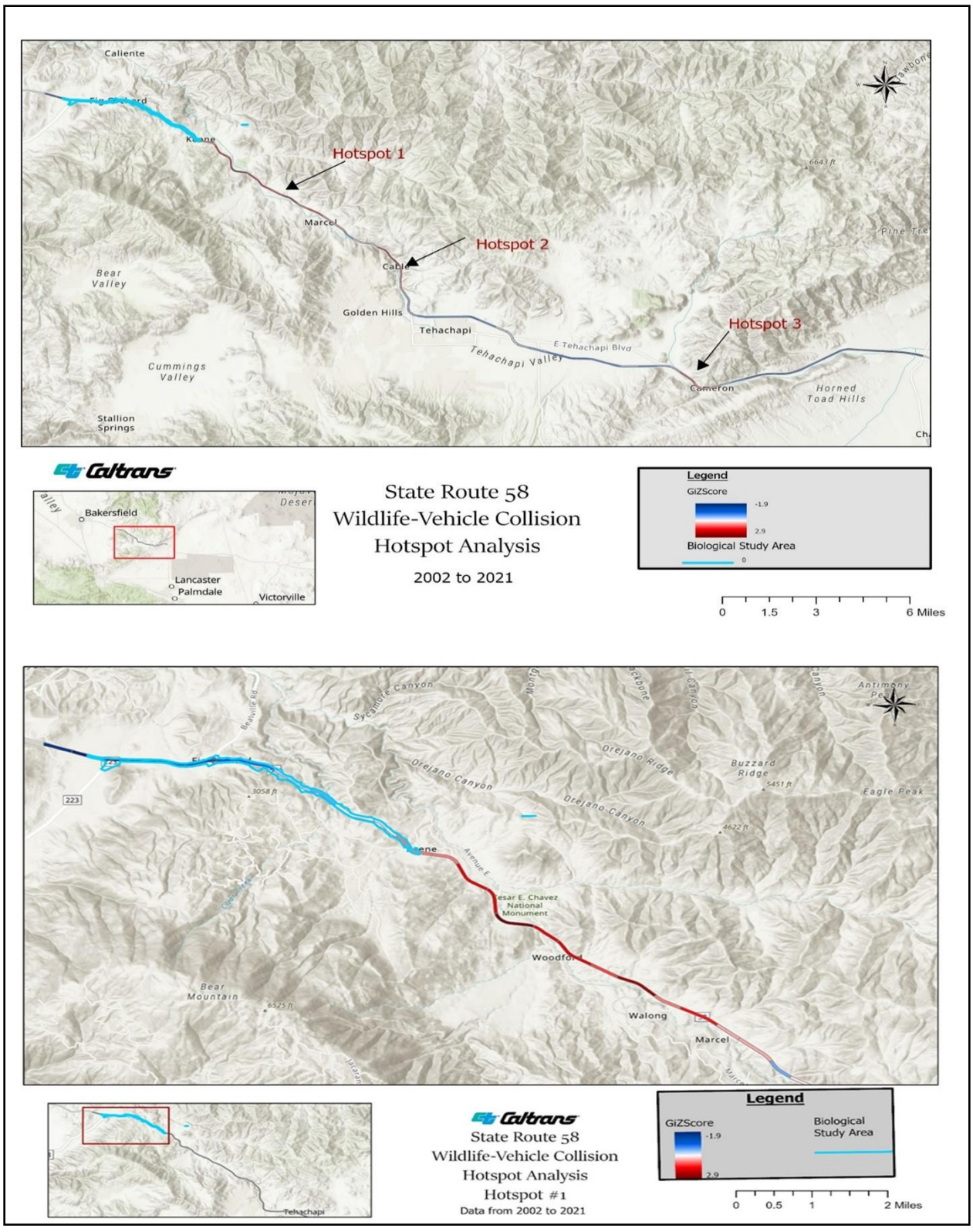

Figure 15 - Maps show the wildlife vehicle collision hot spots within the Tehachapi Wildlife Corridor. The red segments indicate hot spots; the blue segments indicate cold spots. The top map is an overview of the whole Tehachapi Wildlife Corridor and bottom map shows the project area.

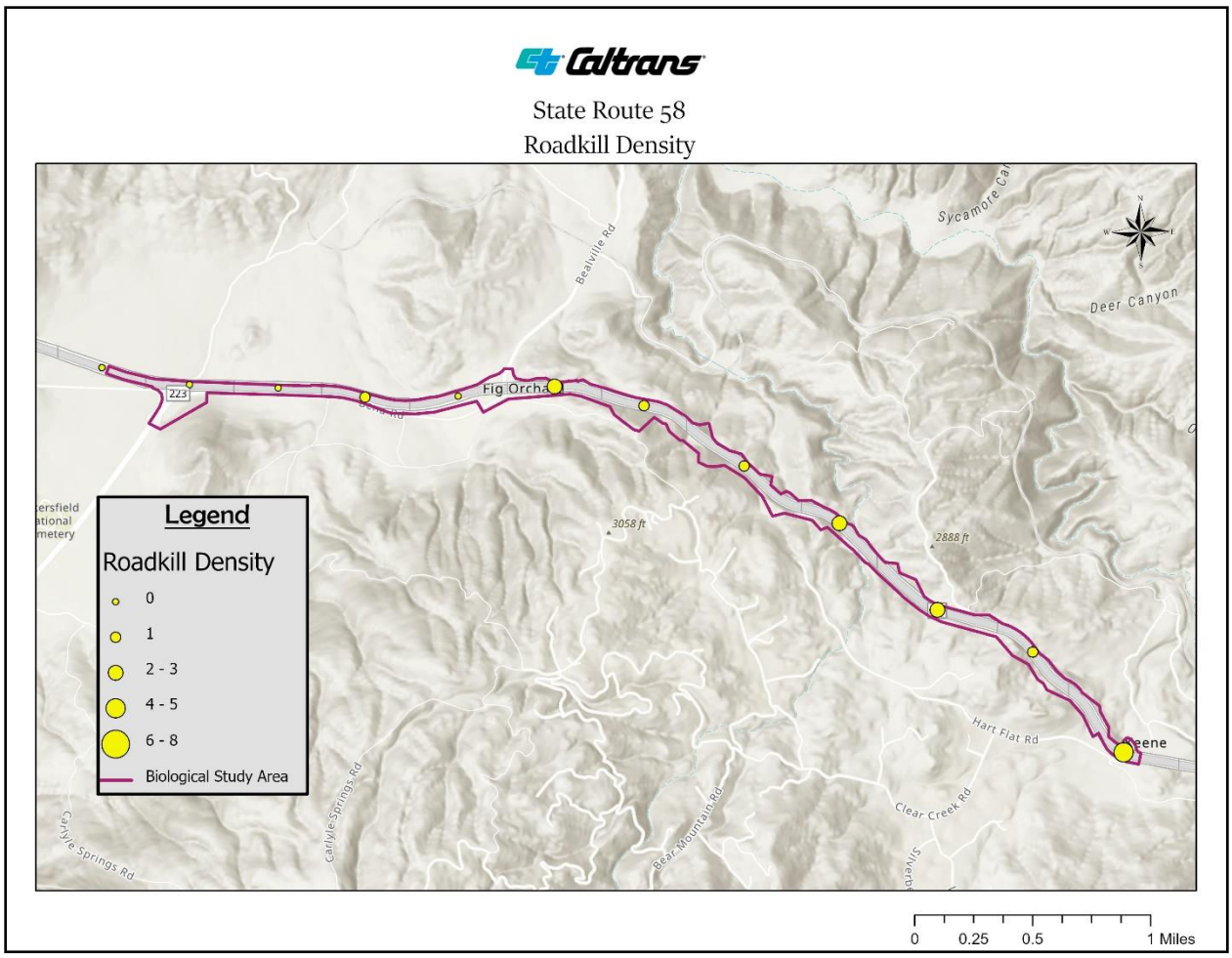

Figure 16 - This map shows the roadkill density within the project area. The larger the yellow circle, the more roadkill occurred in that area.

Drainage Facility Inventory and Remote Camera Study

In March 2021, a survey was initiated to inventory drainage facilities to better understand these structures' potential use by wildlife for habitat connectivity. Medium- to large-sized wildlife tend to use culverts larger than 3 feet in diameter and bridges as undercrossings. A review of the Caltrans culvert database was conducted to identify all drainage structures that were larger than 3 feet in diameter and record drainage structure features. Data recorded included: exact dimensions of the structure, road and shoulder width above the structure, barrier dividing the lanes of traffic, parallel infrastructure, such as railroad or secondary roads, evidence of seasonal water flow, natural substrate at the bottom of the structure, debris-catching devices attached to the structures, characteristics of the vegetation adjacent to the structure, and signs of wildlife and human activity presence adjacent to the structure. Photos of the structures were also taken.

Drainage structures were then selected for surveillance of wildlife use with remote cameras. One of the goals was to survey a representative sample of the different types of structures such as concrete box culverts, metal corrugated pipe culverts, culverts with and without debris catchment devices, and bridges. Drainage structures in commonly known wildlife travel corridors such as creek drainages were also surveyed due to the potential for wildlife use. Camera theft and crew safety were also considered when choosing where to use cameras. Only

two culverts within the project Biological Study Area were larger than 3 feet in diameter; the remaining 17 were 24 inches or less in diameter. Cameras were used at the inlets and outlets of the two larger drainage structures at post miles 78.7 and 80.2.

The drainage structure at post mile 78.7 is a 6-foot circular concrete culvert in Clear Creek (see Figure 17, which shows wildlife activity). Clear Creek serves as a natural travel corridor for wildlife. A debris deflector structure is on the inlet side of the structure. The bottom of the culvert is partially filled with natural substrate. Water flows through the culvert seasonally. A 3-foot median barrier divides the eastbound and westbound traffic above the culvert.

Wildlife evidence is abundant leading up to the inlet and outlet of the culvert. Sign of human activity is minimal at the culvert and around the adjacent area. Cattle have access right up to the culvert inlet but not the outlet. Vegetative cover is about 35 percent at the inlet and 5 percent at the outlet. The culvert is approximately 165 feet long. Based on remote camera data, only wildlife that can crawl through a damaged portion of this debris structure seem to be able to travel through the culvert.

Figure 17 - Photos of bobcats using the culvert outlet (A) and inlet (B) at post mile 78.7. Photo B shows a bobcat exiting the debris structure from the damaged location where some wildlife enter and exit the culvert.

The drainage structure at post mile 80.2 is a 5.5-foot circular corrugated metal pipe culvert in an unnamed tributary to Tehachapi Creek (see Figure 18, which also show black bear use). This culvert is 0.4 mile east of the proposed truck climbing lane limits. No debris catchment devices are present on this culvert. Natural substrate lines the bottom of the culvert approximately one-third the length of the culvert from the outlet side. The outlet of the culvert is half filled with natural substrate. Water flows through the culvert seasonally. A 3-foot median barrier divides the eastbound and westbound traffic above the culvert. Wildlife evidence is abundant leading up to the inlet and outlet of the culvert. Sign of human activity is minimal at the culvert, but human activity is high in the adjacent area due to the Hart Flat exit and secondary roads nearby. Cattle do not have access to the culvert, and vegetative cover is approximately 90 percent at the inlet and 80 percent at the outlet. The culvert is about 250 feet long.

Figure 18 - Photos of black bears using the culvert inlet (A) and outlet (B) at post mile 80.2 within the project area.

Motion- and heat-activated remote cameras were used to observe culverts for potential wildlife use. Cameras were set up to have an optimal view of the culvert inlet or outlet, and no baits or lures were used for the survey. Cameras were visited once a month to collect the data on the SD cards and replace batteries.

Cameras have been active on the inlets of both culverts since April 21, 2021 and the outlets since August 6, 2021. The data below is from the first date of camera use (April/August 2021) to September 8, 2022; cameras will remain in use at these locations until August 2023. All photos from the cameras were reviewed by at least two biologists to determine which species were present in the images and whether the animal entered/exited the culvert.

Table 10 shows the species that were identified at each culvert and the number of days a species was present. The analysis provides a conservative index of visitation of the culverts by species. Mesocarnivores such as bobcats, raccoons, and coyotes visited the structure the most. No mountain lions and very few mule deer were detected at the culverts. Black bears were documented using both culverts.

Species Name	Post Mile 78.7 Inlet	Post Mile 78.7 Outlet	Post Mile 80.2 Inlet	Post Mile 80.2 Outlet
Amphibian species	0	0	1	0
Badger	0	0	0	1
Bat species	1	1	7	1
Black bear	1	3	4	26
Black bear (sow with cubs)	0	0	12	21
Bobcat	110	168	70	58
Cattle	5	0	0	0
Coyote	23	54	0	35
Gray fox	7	0	4	1
Mule deer (antlerless)	0	1	1	0
Mule deer (antlers)	1	1	0	0
Opossum	0	0	12	8
Passerine	2	9	82	6
Public	0	6	0	0
Rabbit/Hare (unknown)	1	0	4	25
Raccoon	35	32	114	109
Raptor (hawk-like)	0	0	6	12
Raptor (owl)	1	0	0	0
Reptile species	4	3	6	2
Rodent species	2	39	121	81
Spotted skunk	0	0	4	14
Striped skunk	7	2	92	38
Unknown carnivore	6	0	0	2

Table 10 - Animal species present at the culvert inlets and outlets. Shown are the number of days each species was identified in a remote camera image during the survey period (April 21, 2021 to September 8, 2022).

GPS-collaring of Wildlife

Individuals from University of California, Davis, California Department of Fish and Wildlife Region 4, and The Nature Conservancy are collaborating on a GPS-collaring effort in the project vicinity. GPS-collar data will assist with better understanding the movement of wildlife across the highway and where the highway may act as a barrier for habitat connectivity.

The goal of the GPS-collaring is to track movement patterns and survival of mountain lions, mule deer, and black bears within and adjacent to the Tehachapi Wildlife Corridor. Only a limited number of animals have been collared at this time, including 1 male black bear and 2 female mule deer. Capture efforts will increase in 2023. The GPS-collared black bear was detected via remote camera traveling through the culvert at post mile 80.2. Future data from GPS collars may be used to inform and refine potential crossing structure locations.

Environmental Consequences

Quercus Woodland (Oak Woodland)

According to surveys, approximately 65 individual oak trees may be temporarily or permanently impacted within the Biological Study Area. Of the 65 trees, 33 may be temporarily impacted during construction activity occurring around the root zone. Oak trees that will be temporarily impacted during construction will be preserved after project construction is complete.

Of the 65 impacted trees, 32 are expected to be removed during construction of the cut and fill slopes and shoulder widening to accommodate the truck climbing lane. A total of 4.279 acres of oak woodland habitat will be permanently impacted by the project. In context, this accounts for less than 0.1 percent of oak woodland habitat present within the two watersheds comprising the project area (see Table 11).

Oak Woodland Habitat	Permanent Impacts (acres)	Total Watershed Area (acres)	Permanent Impact as a percentage of total watershed
Caliente Creek	2.325	12,491.636	0.018612 percent
Tehachapi Creek	1.954	35,670.815	0.005478 percent

Table 11 - Oak Woodland habitat impacts

Five blue oak trees and one interior live oak tree were mapped within the California Department of Fish and Wildlife's jurisdictional riparian areas. Two blue oaks will be temporarily impacted during construction, and three blue oaks are expected to be removed. One interior live oak is expected to be removed during project construction.

Habitat Connectivity

Temporary impacts during construction may disrupt wildlife behavior and any attempts to move across State Route 58 during construction of the project. Construction activity can deter wildlife from using an area due to the increase in noise, lights, unfamiliar objects, and human activity.

The project will also result in permanent indirect and direct impacts to wildlife connectivity and habitat. Increasing the road width will result in degradation to habitat from direct habitat loss. Also, increasing the length of existing culverts may reduce the use of those culverts by wildlife. The longer a culvert, the less wildlife tend to use it (Meese et al. 2009).

Though the project Biological Study Area is not within a wildlife vehicle collision hot spot, 22 collisions have been recorded (see Table 9) and permanent impacts to wildlife connectivity are anticipated from the project. The area is not considered a hot spot because the number of collisions in the project limits are not as high as other areas of State Route 58. Wildlife vehicle collisions still occur but fewer have been recorded than in other areas adjacent to the project limits. The lack of roadkill data may indicate one of two situations occurring: (1) this segment of highway is functioning to allow wildlife movement across the road surface resulting in low wildlife vehicle collision rates, or (2) this segment of the highway is already a barrier to the movement of wildlife across the road surface and wildlife either attempt to use existing drainage structures within the project limits or are travelling along the highway to the east and west of the project to find other crossing locations that allow them to go under or across the highway.

If situation 1 is occurring, then the addition of the truck climbing lane may result in increased wildlife vehicle collisions due to the additional width of roadway that an animal must navigate to make it safety to the other side. The additional length and width of the truck climbing lane may increase the chance of collisions with wildlife if or when they attempt to cross the roadway. The additional lane may also cause a barrier effect if it results in deterring wildlife that may currently be crossing over the roadway, causing them to find other crossing locations farther east or west. This situation would alter wildlife movement patterns and impact local wildlife populations.

If situation 2 is occurring, then the barrier effect will only be intensified from the additional truck climbing lane caused by further diverting wildlife movement to the east or west to other road segments, which would further impact wildlife movement and local wildlife populations. This segment of State Route 58 has been considered by locals as a barrier to deer movement since the highway became four lanes and the center median was added (personal communication Juan Gonzales of University of California, Davis, 2022). Future GPS-collaring data will likely demonstrate movement patterns and how wildlife interact with the highway.

Other factors that may contribute to reduced numbers of wildlife vehicle collisions within the limits of the proposed truck climbing lane project versus other locations along the State Route 58 corridor could include fluctuations in wildlife densities throughout the Tehachapi Wildlife Corridor, resulting in less wildlife vehicle collisions due to fewer animals being present. Topography can also influence wildlife movement. The Biological Study Area may not have the cover or ideal pathways needed by wildlife as species approach and/or attempt to cross the roadway. Data is not yet available to determine wildlife densities or modeling of higher likelihood areas for movement based on topography to better understand what the factors are. In any case, increasing road widths may result in increased wildlife vehicle collisions and/or create or intensify an existing barrier resulting in negative impacts to wildlife connectivity.

Two existing structures are being used by some species in the project area (see Table 10). Though these structures are benefiting some species, they are not useful for larger species like mule deer or mountain lions. These species currently must cross the road or move farther east or west to find preferable road crossing locations or adequate existing culvert or bridge structures outside the project limits. The lack of existing large wildlife crossing structures and directional fencing in the project area will continue to impact wildlife habitat connectivity.

Newly enacted regulations resulting from Senate Bill 790 authorize the California Department of Fish and Wildlife to approve compensatory mitigation credits for wildlife connectivity actions taken under specified programs. In addition, Assembly Bill 2344, signed by Governor Gavin Newsom on September 30, 2022, would require Caltrans, in consultation with the California Department of Fish and Wildlife and other appropriate agencies, to establish an inventory of connectivity needs on the state highway system where the implementation of wildlife passage features could reduce wildlife vehicle collisions or enhance wildlife connectivity, as specified. Guidance has yet to be provided at the time of this document to further understand how the bill will be implemented by Caltrans and the California Department of Fish and Wildlife.

The most effective measure to offset the impacts to connectivity would be from the construction of a wildlife-specific crossing structure. An additional Caltrans project, Keene Pavement project, overlaps with the limits of the 58 Truck Climbing Lane project. The Keene Pavement project will be constructing one wildlife underpass structure and directional fencing within the project's limits. Two locations are still being evaluated with design engineering staff and review of upcoming data from stakeholders (GPS collar data) to determine the final location. The construction of this structure will benefit wildlife impacted from the construction of the State Route 58 Truck Climbing Lane and further aid in habitat connectivity within the central portion of

the Tehachapi Wildlife Corridor. Also, enhancements for impacts to wildlife connectivity included with the State Route 58 Truck Climbing Lane project involve modification of the debris structure at the Clear Creek (post mile 78.7) culvert inlet. Installation of wildlife-specific directional fencing at the inlet and outlet that will be completed with the Keene Pavement project will further improve this structure for wildlife use and would allow for improved habitat connectivity. Another Caltrans project, Cache Creek Pavement, is in the early stages of development and is also looking at ways to improve habitat connectivity within the eastern portion of the Tehachapi Wildlife Corridor.

Avoidance, Minimization, and/or Mitigation Measures

Quercus Woodland (Oak Woodland)

Avoidance and minimization measures will be implemented to reduce additional impacts to oak trees and oak woodland habitat that could occur during construction:

BIO-1: Environmental Sensitive Area (ESA) fencing will be installed around the dripline of the mapped trees to avoid or minimize unnecessary encroachment and prohibit mechanical activity within the root zone. No construction activities or placement of structures should occur within the root zone of any retained oak trees. Landscaping, trenching, or irrigation systems should not be installed within the root zone of any retained oak trees. Sedimentation and siltation should be controlled to avoid filling around an oak tree's base.

BIO-2: A Biological Monitor shall be onsite to monitor oak trees within or adjacent to the Project Impact Area during grading and construction activities.

BIO-3: All oak tree removals shall be verified to check for damage to any retained oak trees growing in close proximity to the removed oak trees.

BIO-4: Plantings of oak trees will be included in the restoration and erosion control plans prepared during the project's design phase and will be implemented post-construction. All oak greater than 4 inches in diameter at breast height that are removed or permanently damaged during construction will be replaced in-kind as is feasible within the project limits.

BIO-5: Onsite planting and restoration will occur for six trees within the California Department of Fish and Wildlife's jurisdictional areas at a mitigation ratio negotiated with the resource agencies.

Habitat Connectivity

To avoid temporary or permanent impacts to habitat connectivity, the following avoidance, minimization, and mitigation measures will be implemented:

BIO-6: Avoid construction activities at night (dusk till dawn) hours to prevent temporary disruption of wildlife movements.

BIO-7: Limit the amount of construction days, as feasible, to conduct work on existing culverts to reduce temporary disruption of wildlife movements.

BIO-8: (CEQA Mitigation Measure): To mitigate for impacts to wildlife connectivity, a wildlife underpass structure and directional fencing will be constructed within the Keene Pavement project limits.

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 U.S. 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, the 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 Clean Water Act.

Section 404 of the Clean Water Act establishes a regulatory program that provides that discharge of dredged or fill material cannot be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers 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" (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

The Executive Order for the Protection of Wetlands (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 primarily by the State Water Resources Control Board, the Regional Water Quality Control Boards and the California Department of Fish and Wildlife. In certain circumstances, the Coastal Commission (or Bay Conservation and Development Commission or the Tahoe Regional Planning Agency) may also be involved. Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify California Department of Fish and Wildlife before beginning construction. If 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. See the Water Quality section for more details.

Affected Environment

The following analysis is based on the Natural Environment Study (September 2022) and the Aquatic Resources Delineation Report (August 2022) that were completed for the project.

To construct the truck climbing lane, the project would widen a segment of State Route 58 by 17 feet between post miles 76.3 and 77.2, and by 14 feet between post miles 77.4 and 79.8. Existing culverts in the project area will be extended to accommodate the widening. These culverts convey water under State Route 58 into Clear Creek and multiple drainage ditches that may be considered state or federal jurisdictional waters.

An Aquatic Resources Delineation Report was prepared in August 2022 to determine the extent of jurisdictional aquatic resources in the project area. For the report, 52 assets associated with State Route 58 were identified to survey in the field, including culverts, hillside culverts, overside drains, and stormwater Best Management Practices. One asset, listed as a culvert at post mile 77.74, was not viewed due to safety concerns. Of the 51 assets viewed in the field, a total of 28 features were delineated. Seven features were preliminarily determined to be jurisdictional under the California Department of Fish and Wildlife or Central Valley Regional Water Quality Control Board and non-jurisdictional under the U.S. Army Corps of Engineers, along with three tributary ditches approximately 100 feet or less in length. Twenty-one features were preliminarily determined to be non-jurisdictional under the California Department of Fish and Wildlife, Regional Water Quality Control Board, and U.S. Army Corps of Engineers.

Clear Creek and Associated Wetland and Tributaries

Clear Creek is a seasonally flooded blueline stream that drains north to Tehachapi Creek, which then becomes Caliente Creek. Its headwaters are approximately 3.46 miles (straight-line distance) upstream in the Bear Mountain watershed. The creek flows through a 5-foot-diameter culvert under State Route 58. The creek has been channelized on both sides of State Route 58

and grated with a box culvert on the south side of the highway. A riparian scrub wetland has formed in that area. Ordinary high water mark indicators included a change in dominant species and presence of bed and bank. At the time of the 2022 April surveys, water flow was present in the creek.

S-21 is a naturalized drainage ditch that flows north along State Route 58 into Clear Creek. Much of the bed is covered with broken asphalt. Trash from the highway is also present. Riparian vegetation was present in some sections of the drainage, including mulefat (FAC; *Baccharis salicifolia*) and blue elderberry (FACU, *Sambucus nigra* ssp. caerulea). Native wildflowers and shrubs such as deerweed, narrow leaf milkweed (*Asclepias fascicularis*), elegant clarkia (*Clarkia unguiqulata*), speckled fairyfan (*Clarkia cylindrica*), Kern tarweed (*Deinandra pallida*), and phacelia (*Phacelia* sp.) grew on the banks along with non-natives such as shortpod mustard (*Hirschfeldia incana*) and wild oat (*Avena* sp.).

S-103 is a naturalized drainage ditch that was originally lined with concrete. Much of the concrete is now covered in soil or vegetation, and one section has collapsed approximately 6 feet. Vegetation within the bed and banks consisted mostly of non-native bromes (*Bromus* spp.) and shortpod mustard. However, vegetation along the banks included natives such as California buckeye (*Aesculus californica*), interior live oak (*Quercus wislizeni*), rock gooseberry (*Ribes quercetorum*), blue elderberry, and sacred datura (*Datura wrightii*). S-103 drains beyond the Biological Study Area into a small emergent wetland. At the mouth of S-103, running water emerged from cobble (outside of the Biological Study Area), indicating either an underground stream or spring at this site.

S-202 is a drainage ditch with no significant habitat features within the Biological Study Area, though it does exhibit evidence of flow through a change in total vegetation cover and the presence of a bed and bank in the low-flow channel. Upland vegetation occurs throughout the channel, and there is no clear change in dominant species. Common species included phacelia, ripgut brome (*Bromus diandrus*), and wild oat (*Avena fatua*). Based on remote analysis, S-202 drains to Clear Creak approximately 600 stream feet from the Biological Study Area. S-202 provides little aquatic or riparian habitat within the Biological Study Area, but it appears to drain to a natural bed just outside the Biological Study Area. Therefore, it is likely that S-202 is a Water of the State.

Associated Riparian Wetland

The riparian scrub wetland, associated with Clear Creek, was delineated, and sampled on April 21, 2022. PSS-1 is south of State Route 58. Clear Creek meanders north through the wetland. Wetland vegetation was indicated by the presence of mulefat and Gooding's willow (FACW; *Salix gooddingii*), and the dominance test was passed, indicating presence of hydrophytic vegetation. The hydric soil indicator Hydrogen Sulfide (A4) was also met; a hydrogen sulfide odor was noted starting at approximately 25 inches below the surface, and all layers above the noted odor had a chroma less than 2. Hydrologic indicators included saturation (A3), water marks (B1), sediment deposits (B2), and surface water. The preliminary delineation determined that 1.06 acres of PSS-1 lies within the Biological Study Area.

Unnamed Drainages

S-1 and S-3 and 3A are drainage ditches that are hydrologically connected to an unnamed blueline stream to the south and possibly to the north. These ditches may have been part of a natural system before State Route 58 was constructed. However, they currently function primarily as ditches. Both S-1 and S-3 can be clearly observed on an aerial map. Non-native annual bromes dominate within the banks of both ditches; however, California buckwheat is also

fairly common within the drainage but not in the surrounding upland. In 3A, a tributary of 3, miniature lupine (*Lupinus bicolor*) is common in the active floodplain. Both drainages contain faint signs of bed and bank.

S-6 appears to be partially a human-made ditch and partially a naturalized drainage. It originates as a drainage ditch just west of the Bena Road intersection with State Route 58 but becomes an incised drainage as it drains west through rangeland. Within its banks, dominant species were mostly bromes, wild oats, and shortpod mustard and blue oaks (*Quercus douglasii*), and the non-native tree of heaven. S-6A is a short tributary to S6 that originates as a culvert. It is dominated by tree of heaven (FACU). S-6B is a short tributary to S-6 that appears to be a natural erosional feature. No culvert was observed at this location. The banks were steeply incised, and the bed was inaccessible; however, no change in vegetation cover or type was observed. Non-native grassland species such as ripgut brome, yellow star thistle (*Centaurea solstitalis*), shortpod mustard, and wild oats were seen at the same amount both within and outside the drainage.

S-15 appeared to be a natural swale that was dug out to form a depression to accommodate runoff from a culvert that entered it from State Route 58. S-15 supported some mature riparian species, such as blue elderberry, interior live oak, and California sycamore (*Platanus racemosa*).

Non-Jurisdictional Swales, Culverts, and Roadside Ditches

Refer to Appendix A - Table 3 for D-2, 4, 5, 7, 8, 12, 13, 17, 18, 22, 23, 24, 25, 27, 29, 102, 106, and 201, and NS-105 and 107. These features were primarily swales and ditches associated with culverts directing flow north under State Route 58 or associated interchanges. Cement armoring was typically in place near the highway or interchanges, but the rest of the channel was often composed of sandy loam and dominated by non-native bromes.

Environmental Consequences

To construct the truck climbing lane, the project would widen a segment of State Route 58 by 17 feet between post miles 76.3 and 77.2, and by 14 feet between post miles 77.4 and 79.8. Existing culverts will be extended, and overside drains will be installed to accommodate the widening. Jurisdictional water resources including wetland habitat will be impacted by the construction of culvert extensions and cut/fill slopes. This work will be considered permanent impacts to Waters of the State, and permanent impacts to Waters of the United States, requiring a Regional Water Quality Control Board 401 Certification and a California Department of Fish and Wildlife 1602 Streambed Alteration permit prior to construction. Temporary impacts will occur at each end of each culvert as well to provide equipment access, minor grading of the channel bottom, and vegetation removal. For estimates of both permanent and temporary impacts related to the culvert work, refer to Table 3 in the Water Quality and Storm Water Runoff section of this document.

In addition, State and U.S. jurisdictional waters occur within and adjacent to the project limits, including four unnamed irrigation ditches where existing culverts conveying water under U.S. Route 395 will be extended during the project.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures will be implemented to reduce additional impacts to aquatic resources and riparian vegetation that could occur during construction:

BIO-9: Environmentally Sensitive Area (ESA) fencing will be placed around the aquatic resources at the boundary of where temporary and permanent impacts will potentially occur.

BIO-10: Environmentally Sensitive Area fencing will also be placed at the boundary of where temporary and permanent impacts will potentially occur to the riparian corridor of Caliente Creek.

BIO-11: A full-time biological monitor will be onsite for all activities occurring in aquatic resource and riparian habitats and include installation and enforcement of the Environmentally Sensitive Area.

BIO-12: The biological monitor will also provide a Biological Resource Information Program (BRIP) to all construction personnel about the Environmentally Sensitive Area fencing, permits, and the resources present onsite.

BIO-13: Implementation of water pollution control Best Management Practices will occur prior to and during construction to protect all aquatic resources and riparian habitats from discharge of water or substances into resources.

BIO-14: No staging can occur within 150 feet of aquatic resources or riparian habitats.

BIO-15: All required avoidance and minimization measures included in resource permits from the Regional Water Quality Control Board, California Department of Fish and Wildlife, and U.S. Army Corps of Engineers (if 404 permit is determined to be required in the project's design phase) will be implemented.

BIO-16: Onsite riparian vegetation plantings are possible, but site conditions make access difficult for long-term monitoring. This will be negotiated with resource agencies.

BIO-17: Onsite erosion control seeding will occur in temporary and permanently impacted areas with native seed mix. Monitoring of seed propagation and success may be required by resource agencies, depending on permit requirements.

BIO-18 (CEQA Mitigation Measure): Permanent impacts to wetlands, riparian vegetation, and aquatic resources will be reviewed by resource agencies as part of the permitting process during the project's design phase. The proposed strategy to mitigate for these impacts would be to purchase in-lieu fee credits or mitigation bank credits from an approved mitigation bank, at a ratio negotiated with the resource agencies. The specific bank and amount of credits required will need to be determined once impact areas are quantified.

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 the Threatened and Endangered Species section 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.

The regulatory requirements for the Federal Endangered Species Act can be found at 16 U.S. Code Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. The 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 following analysis is based on the Natural Environment Study (September 2022) that was completed for the project.

Focused botanical surveys were done on April 26, 2021 and April 14, 2022. Surveys were conducted to coincide with the peak blooming period in April. A list of special-status plant species with the potential to be found in the Biological Study Area was generated from lists obtained from the U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and California Native Plant Society. A total of 14 special-status plant species have the potential to be present within the Biological Study Area. Of these, four plant species were listed as state or federally threatened or endangered, and are discussed further in the Threatened and Endangered Species section of this document.

Environmental Consequences

Of the 14 special-status plant species identified from the U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and California Native Plant Society species lists, two species have potential habitat that was found in the Biological Study Area during the April surveys. The California jewelflower (*Caulanthus californicus)* occurs in grassland habitat, and Kern mallow (*Eremalche parryi ssp. Kernensis*) occurs on eroded hillsides. Habitat and soils were not present within the Project Impact Area. Therefore, this will have no effect on these species. Kern mallow is federally endangered and is discussed further in the Threatened and Endangered Species section of this document.

The California jewelflower occurs in grassland habitat, which is present within the biological Study Area. Nearby records in the California Natural Diversity Database indicate that the species was observed in sandy clay loam soil, and the California Native Plant Society Rare Plant Inventory describes the species' microhabitat as sandy soils. Neither soil type was found in the Biological Study Area. In addition, this species is threatened by grazing and possibly non-native species, both of which exist within the Biological Study Area. Therefore, this species is not expected to occur at the project site.

The Build Alternative is not expected to affect any special-status plant species. No special-status plant species were found during field surveys, and none are expected to occur within the project area. Effects on non-special-status plant species will potentially occur from shoulder widening and cut and fill slope construction. Existing vegetation within temporary impact areas will be preserved as much as possible.

Avoidance, Minimization, and/or Mitigation Measures

The following measures will be implemented to avoid and minimize any potential impacts to special-status plant species:

BIO-19: Pre-construction surveys will be conducted during peak blooming season 72 hours prior to construction if the construction schedule allows. If not, these surveys will be completed the spring prior to construction start.

BIO-20: If special-status plant species are found within the Biological Study Area or adjacent habitat, Environmentally Sensitive Area fencing will be installed and a 5- to 10-foot no-work buffer may be implemented around the plant.

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 (NOAA Fisheries), 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 later in the Threatened and Endangered Species section. 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 NOAA Fisheries 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 to 1603 of the California Fish and Game Code
- Sections 4150 and 4152 of the California Fish and Game Code

Affected Environment

The following analysis is based on the Natural Environment Study (September 2022) that was completed for the project.

Searches of the U.S. Fish and Wildlife Service database and California Natural Diversity Database identified 20 special-status animal species with the potential to occur in the Biological Study Area: Kern primrose sphinx moth (*Euproserpinus euterpe*), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), Bakersfield legless lizard (*Anniella grinnelli*), California glossy snake (*Arizona elegans occidentalis*), `blunt-nosed leopard lizard (*Gambelia sila*), coast horned lizard (*Phrynosoma blainvillii*), tri-colored blackbird (*Agelaius tricolor*), golden eagle (*Aquila chrysaetos*), burrowing owl (*Athene cunicularia*), Swainson's hawk (*Buteo*

swainsoni), southwestern willow flycatcher (*Empidonax traillii extimus*), California condor (*Gymnogyps californianus*), delta smelt (*Hypomesus transpacificus*), Kern Canyon slender salamander (*Batrachoseps simatus*), Tehachapi slender salamander (*Batrachoseps stebbinsi*), foothill yellow-legged frog (*Rana boylii*), Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*), Tehachapi pocket mouse (*Perognathus alticola inexpectatus*), fisher (*Pekania pennanti*), and San Joaquin kit fox (*Vulpes macrotis mutica*).

The following five special-status species identified by the database searches have suitable habitat and have the potential to be present within the project area: golden eagle, Swainson's hawk, southwestern willow flycatcher, foothill yellow-legged frog, and Tehachapi slender salamander. Due to their threatened and/or endangered status, these species are discussed later in the Threatened and Endangered Species section.

Numerous species of nesting birds that do not appear in the California Natural Diversity Database or U.S. Fish and Wildlife Service species list were included for consideration based on the presence of suitable habitat within the project area. These bird species have the potential to occur in the Biological Study Area and are protected by the Migratory Bird Treaty Act and California Fish and Game Code Section 3503.

Environmental Consequences

No special-status animal species were found during multiple wildlife surveys performed in the 2021 and 2022 survey seasons. Habitat to support the remaining 15 non-threatened or endangered species was not present in the Project Impact Area, and the project has been determined to have no effect on these individual species. For certain species, concurrence was received from U.S. Fish and Wildlife Service and California Department of Fish and Wildlife through communications regarding these determinations.

Migratory birds, including raptors such as red-tailed hawks (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), American kestrel (*Falco sparverius*), prairie falcon (*Falco mexicanus*), Cooper's hawk (*Accipiter cooperii*), or osprey (*Pandion haliaetus*) could nest in the riparian corridor along Tehachapi Creek. Vegetation and/or tree removal could impact migratory nesting birds if nests are present and active at the time of removal. Noise and dust associated with construction could also cause indirect impacts. Noises created by large construction equipment could change perching, foraging, and/or nesting behaviors. Dust could disturb air quality, reduce sight visibility, and hide potential prey. Measures to avoid and minimize these impacts are described in the next section.

Avoidance, Minimization, and/or Mitigation Measures

The following additional avoidance and minimization measures will also apply to all birds that are protected by the Migratory Bird Treaty Act and California Fish and Game Code Section 3503:

BIO-21: Pre-construction surveys of suitable habitat in the Project Impact Area will be implemented by a qualified biologist for migratory and nesting birds within 14 days for work occurring during the nesting season (February 15 to September 1) to identify active nests in the Project Impact Area.

BIO-22: In the event that nesting birds or active nests are observed in the Project Impact Area, a qualified biological monitor will be required onsite during all construction activities until nesting has been completed as determined by the biologists.

BIO-24: In the event that nesting birds or active nests are observed in the Biological Study Area, a protective no-disturbance buffer of at least 250 feet for nesting songbirds, 500 feet for nesting raptors and nesting special-status species and a half-mile for nesting Swainson's hawks will be installed under supervision of a qualified biologist in coordination with the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service.

BIO-25: The qualified biologist will determine the size of the buffer in coordination with the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service and will determine when nesting has been completed and the buffer may be removed.

BIO-26: Biological Resource Information Program training will be provided to all construction personnel about sensitive biological resources and habitats including nesting and migratory birds.

Threatened and Endangered Species

Regulatory Setting

The main federal law protecting threatened and endangered species is the Federal Endangered Species Act: 16 U.S. Code Section 1531, et seq. See also 50 Code of Federal Regulations Part 402. This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration (and Caltrans, as assigned), are required to consult with the U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) 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 the 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 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.

Affected Environment

The following analysis is based on the Natural Environment Study (September 2022) that was completed for the project.

Searches of the U.S. Fish and Wildlife Service database and California Natural Diversity Database were conducted to determine if there are any threatened, endangered, proposed, and candidate species and designated or proposed critical habitat that may occur within the project area. The database searches identified 4 plant species and 5 animal species that have a conservation status designated by the state or federal government and have the potential to be present in the Biological Study Area (see Table 12).

Common Name	Scientific Name	Status
Plant: Bakersfield cactus	*(Opuntia basilaris var. treleasei)*	Federal and State Endangered
Plant: Kern mallow	*(Eremalche parryi ssp. Kernensis)*	Federal Endangered
Plant: San Joaquin adobe sunburst	*(Pseudobahia peirsonii)*	Federal Threatened and State Endangered
Plant: San Joaquin woollythreads	*(Monolopia congdonii)*	Federal Threatened
Bird: Golden eagle	*(Aquila chrysaetos)*	State Fully Protected, Federal Bald and Golden Eagle Protection Act species
Bird: Southwestern willow flycatcher	*(Empidonax traillii extimus)*	Federal Endangered and State Endangered
Bird: Swainson's hawk	*(Buteo swainsoni)*	State Threatened
Amphibian: Foothill yellow-legged frog	*(Rana boylii)*	State Endangered
Amphibian: Tehachapi slender salamander	*(Batrachoseps stebbinsi)*	State Threatened

Table 12 - Species that have a conservation status designated by the state or federal government and have the potential to be present in the biological study area.

No federally designated critical habitat for federally listed plant or animal species occurs within the Biological Study Area. No Essential Fish Habitat for federally managed species was identified within the project limits.

Threatened and Endangered Plant Species

Focused botanical surveys were conducted during the peak blooming period for all species on April 26, 2021 and April 14, 2022, and no special-status plants were found. No U.S. Fish and Wildlife Service critical habitat for rare plant species is present within the project area.

- Bakersfield cactus—This species occurs in sandy valley and foothill grassland and woodlands. No sandy soils were found within the Biological Study Area; therefore, this species is not expected to occur at the project site.

- Kern mallow—This species occurs on eroded hillsides, which are present in limited quantities within the Biological Study Area, but not within the Project Impact Area. Limited potential habitat for this species was found in the Biological Study Area, and there is a low probability of impacts to individuals within the project area.
- San Joaquin adobe sunburst—This species occurs in adobe or clay soils, which were not found in the Biological Study Area. Therefore, this species is not expected to occur at the project site.
- San Joaquin woolythreads—On the San Joaquin Valley floor, this species typically is found on sandy or sandy loam soils, whereas on the Carrizo Plain, it grows in silt rich soils. The San Joaquin woolly-threads also grows in sand dunes and on sandy ridges, as well as along the high-water line of washes and on nearby terraces. These habitat types were not found in the Biological Study Area, so this species is not expected to occur at the project site.

Special-Status Animal Species

Multiple wildlife surveys were conducted in the project area during the 2021 and 2022 survey seasons. Discussions of individual listed species follows.

Golden Eagle
The golden eagle is not federally or state threatened or endangered, but is listed as a fully protected species under California Fish and Game Code 3511. The golden eagle is also protected by the Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act. Species designated as fully protected are species that risk extinction within the State of California and may not be taken or possessed at any time, and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species, except for necessary scientific research, through a Natural Communities Conservation Planning effort, or through direct legislative action. The Migratory Bird Treaty Act prohibits the destruction of nests, eggs, and/or young of all designated migratory bird species. The main threats to the golden eagle include loss of foraging areas, loss of nesting habitat, pesticide poisoning, lead poisoning, and collision with human-made structures such as wind turbines.

No golden eagle individuals or nests were found near or within the Biological Study Area in the 2021-2022 nesting bird surveys. The closest California Natural Diversity Database occurrence recorded was in 1949, 10.5 miles southeast of the Biological Study Area. Habitat that could provide nesting and foraging habitat for this species includes large trees and shrub lands that occur within the Biological Study Area, and cliff-walled bluffs that occur outside of but within the vicinity of the Biological Study Area. Therefore, there is a potential for golden eagles to nest in trees within the Biological Study Area and forage in the grassland and riparian habitat.

Swainson's Hawk
The Swainson's hawk is listed as a threatened species under the California Endangered Species Act, a U.S. Fish and Wildlife Service Bird of Conservation Concern, a U.S. Forest Service Sensitive Species, a Bureau of Land Management Sensitive Species, and protected under the federal Migratory Bird Treaty Act and California Fish and Game Code. Swainson's hawks typically nest in grasslands, but also use sage flats and even swaths of agriculture intermixed with native habitat. Nests are placed in trees, often in the only tree visible for miles. The largest threats that face the Swainson's hawk in California are loss of nesting sites in riparian forests, loss of foraging habitat due to development, and high mortality due to pesticide use along the migration route.

Swainson's hawk surveys were conducted during the 2021 nesting season (March to early August) using established survey protocols. Potentially one Swainson's hawk nest was found by a consultant biologist within the western end of the survey area. The nest was not confirmed by Caltrans biologists on several subsequent site visits.

Within the Biological Study Area, suitable nesting habitat is limited to the western portion where there is a combination of extensive grasslands for foraging and tree species for nesting. Nest trees within this western portion of the Biological Study Area generally include blue oak and live oak (*Quercus wizlizenii*), which are found in scattered locations, including along State Route 58 and adjacent to residential/rural residential and isolated roadside areas. There are also a variety of non-native, naturalized, or exotic tree species within the area, mostly tree of heaven (*Alianthus altissima*). These trees do not support the structure or branch stability that would be needed for Swainson's hawk nesting.

The nearest California Natural Diversity Database occurrence of the Swainson's hawk to the Biological Study Area is 0.6 mile east of the junction with State Route 223 (occurrence #396 with "date element last seen" on June 8, 1991 and updated 2016). In 1991, two adults were seen at a nest site in a dead blue oak (*Quercus douglasii*) from March 24 through June 8. The original nest tree was removed, presumably by agricultural activities, by the end of July 1994. The most recent observation of Swainson's hawks made in this location was in 2016, of two individuals but, due to access restrictions, breeding details for this location were not obtained.

During 2016, another sighting of Swainson's hawk pairs and nesting was made near the Bakersfield National Cemetery, which is outside of the Biological Study Area (occurrence #2819 with "date element last seen" on July 5, 2016). This nest was in an oak tree (unknown species) and was observed to produce at least one fledgling. It is possible that this pair was the same one seen in the same year near the earlier reported nest location. There are no other California Natural Diversity Database occurrences within 10 miles of the Biological Study Area.

Southwestern Willow Flycatcher
The southwestern willow flycatcher is listed as a federally and state endangered species. Species listed as endangered by the state are those species whose survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors. A designation of federally endangered indicates that the species is in danger of extinction throughout all or a significant portion of its range. The main threats to southwestern willow flycatcher include extensive loss, fragmentation, and modification of riparian breeding habitat.

Presence/absence surveys for the southwestern willow flycatcher were conducted according to established protocols. The protocol recommends that potential habitat for the southwestern willow flycatcher be surveyed five times. One survey is required during Survey Period 1 (May 15 to May 31), two surveys are required during Survey Period 2 (June 1 to June 24) and two surveys are required during Survey Period 3 (June 25 to July 17).

The southwestern willow flycatcher surveys were conducted over five survey days for a total of 27.3 hours. No southwestern willow flycatchers were documented at any of the locations between May 24 and July 16, 2021. The southwestern willow flycatcher has historically occurred within the project region, but there are no California Natural Diversity Database recorded occurrences within 10 miles of the Biological Study Area. The nearest known breeding ground of this species is in Kern County along the South Fork Kern River in Kern River Valley, about 37 miles north of the Biological Study Area.

Foothill Yellow-legged Frog
The foothill yellow-legged frog is currently listed as a threatened species under the California Endangered Species Act, a U.S. Forest Service Sensitive Species, and a Bureau of Land Management Sensitive Species. The foothill yellow-legged frog species frequents rocky streams and rivers with rocky substrate and open sunny banks, in forests, chaparral, and woodlands. It is sometimes found in isolated pools, vegetated backwaters, and deep shaded spring-fed pools. The main threat to the foothill yellow-legged frog is habitat destruction, water diversion and pollution.

No foothill yellow-legged frogs were seen during the April 2022 or August 2022 surveys. According to the California Department of Fish and Wildlife, foothill yellow-legged frogs have been eradicated from the region. Therefore, foothill yellow-legged frogs are not expected to occur at the project site. However, Clear Creek north of the project, outside of the Biological Study Area, may provide low potential for foothill yellow-legged frog breeding or non-breeding habitat.

Tehachapi Slender Salamander
The Tehachapi slender salamander is listed as a threatened species under the California Endangered Species Act and a Bureau of Land Management Sensitive Species. The Tehachapi slender salamander habitat is confined to a small number of isolated locations in the Piute and Tehachapi Mountains of Kern County, and perhaps in Los Angeles County between elevations of 2,500 to 5,000 feet. Preferred habitats include valley foothill hardwood-conifer and valley-foothill riparian. The Tehachapi slender salamander is at risk from road construction, mining, livestock grazing, and flood-control projects.

No Tehachapi slender salamander were found during the April 2022 or August 2022 surveys. The nearest occurrence from the California Natural Diversity Database is about 15 miles north of the Biological Study Area within the Lake Isabella Kern River watersheds. Therefore, Tehachapi slender salamanders are not expected to occur at the project site.

Environmental Consequences

Based on the lack of suitable habitat and lack of observations during the surveys done during peak blooming seasons, the Federal Endangered Species Act Section 7 effects determination is that the project would have **No Effect** on the following federally listed plant species: Bakersfield cactus (*Opuntia basilaris var. treleasei*), Kern mallow (*Eremalche parryi ssp. Kernensis*), and San Joaquin adobe sunburst (*Pseudobahia peirsonii*).

Golden Eagle

If the golden eagle is found before or during construction, potential impacts to this species may include direct mortality to individuals through vegetation removal, resulting in direct mortality to eggs, young, or nesting pairs. Potential indirect impacts may include degradation of the breeding habitat or nest abandonment due to stress during construction activities. A **No Effect** determination has been made for this species because no impacts are anticipated to occur with the implementation of avoidance and minimization measures.

Swainson's Hawk

Several attempts to confirm the potential active nest were made, and no individuals or nests were found after the initial sighting. With implementation of avoidance measures, there are no anticipated impacts to Swainson's hawk individuals or nests. A **No Effect** determination has been made for this species because no impacts are anticipated to occur with the implementation of avoidance and minimization measures.

Southwest Willow Flycatcher

Though the riparian habitat along Clear Creek provides moderate conditions that could support the southwestern willow flycatcher, the density and stratification of vegetation were limited. The water flow in the creek is generated by the tributary creeks and from the water runoff during weather events, but otherwise the creek is dry or with limited water flow because the water either permeates or evaporates. It is reasonable to assume that southwestern willow flycatchers may occasionally occur as migrants and use the riparian habitat along Clear Creek, but it is unlikely that they would breed and nest along the creek vegetation. A **No Effect** determination has been made for this species because no impacts are anticipated to occur with the implementation of avoidance and minimization measures.

Foothill Yellow-legged Frog

Construction activities are not anticipated to have direct impacts to the foothill yellow-legged frog, its habitat, or breeding sites because none were identified within the project area. Direct and indirect impacts will be avoided with the implementation of avoidance and minimization measures. A **No Effect** determination has been made for this species because no impacts are anticipated to occur with the implementation of avoidance and minimization measures.

Tehachapi Slender Salamander

Construction activities are not anticipated to have direct impacts to the Tehachapi slender salamander, its habitat, or breeding sites because none were identified within the project impact area or within a 250-foot buffer of the Project Impact Area. Direct and indirect impacts will be avoided with the implementation of avoidance and minimization measures. A **No Effect** determination has been made for this species because no impacts are anticipated to occur with the implementation of avoidance and minimization measures.

No federally designated critical habitat for federally listed plant or animal species occurs within the Biological Study Area, so a **No Effect** determination has been made for designated critical habitat. No Essential Fish Habitat for federally managed species was identified within the project limits, so a **No Effect** determination has been made for Essential Fish Habitat.

Avoidance, Minimization, and/or Mitigation Measures

Threatened and Endangered Plant Species

The following measures will be implemented to avoid and minimize any potential impacts to threatened and endangered plant species:

BIO-27: Pre-construction surveys will be conducted during peak blooming season 72 hours prior to construction if the construction schedule allows. If not, these surveys will be completed the spring prior to construction start.

BIO-28: If special-status plant species are found within the Biological Study Area or adjacent habitat, Environmentally Sensitive Area fencing will be installed, and a 5- to 10-foot no-work buffer may be implemented around the plant.

Golden Eagle

To ensure avoidance of temporary or permanent impacts to the golden eagle, the following avoidance and minimization measures will be implemented:

BIO-29: A pre-construction survey will be conducted if construction is scheduled to begin within the breeding season (February 1 to August 31). Surveys will be conducted throughout the Project Impact Area and a 500-foot buffer in areas where there is a potential for nesting to occur. The survey should include all areas that are suitable for the establishment of nests, such as trees, power poles, and cliffsides.

BIO-30: If nesting golden eagles are identified during the surveys, a no-work buffer of 500 feet may be implemented around active nests. Avoidance buffers may be reduced if a qualified biologist determines that construction activities are not affecting nest building, the rearing of young, or otherwise affecting breeding behaviors.

BIO-31: No construction activities may occur within a no-work buffer until it is determined by a qualified biologist that the young have fledged. This typically occurs by early July or early September unless otherwise determined by a qualified biologist.

Swainson's Hawk

To ensure avoidance of temporary or permanent impacts to Swainson's hawks, the following avoidance and minimization measures will be implemented:

BIO-32: Pre-construction surveys will be conducted where previous observations were noted in previous survey reports. The surveys will be conducted by a qualified biologist within 14 days and again 48 hours before the construction start date if construction activities occur during the nesting season (March to mid-August).

BIO-33: If an active nest is found within the Project Impact Area, a no-work buffer will be implemented in coordination with California Department of Fish and Wildlife within a half-mile of construction activities to ensure no impacts occur that would result in nest failure or abandonment. A full-time biological monitor will be onsite to determine when nesting activities and fledging of young have been completed. The no-work buffer may only be decreased in size in coordination with the California Department of Fish and Wildlife and the determination of a qualified biologist. Take will be avoided.

BIO-34: If an active Swainson's hawk nest is found within the Biological Study Area or within a half-mile buffer of the Project Impact Area, a qualified biological monitor will be required onsite during all construction activities within a half-mile of the nest until nesting has been deemed completed by the biologist. A no-work buffer may be implemented by a qualified biologist in coordination with the California Department of Fish and Wildlife if deemed appropriate. The qualified biologist will determine the size of the buffer and will determine when nesting has been completed and the buffer may be removed.

BIO-35: Biological Resource Information Program (BRIP) training will be provided to all construction personnel about sensitive biological resources, including the Swainson's hawk.

Southwestern Willow Flycatcher

To ensure avoidance of temporary or permanent impacts to southwestern willow flycatchers, the following avoidance and minimization measures will be implemented:

BIO-36: Pre-construction surveys of southwestern willow flycatcher habitat within the Project Impact Area will be conducted by a qualified biologist within 14 days and again 48 hours before construction start if construction activities are to occur during the nesting season (late May through early June) to identify southwestern willow flycatchers in the Project Impact Area.

BIO-37: If an active nest is found within the Project Impact Area, a no-work buffer will be implemented in coordination with the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service within one-quarter-mile of construction activities to ensure no impacts occur that would result in nest failure or abandonment. A full-time biological monitor will be onsite to determine when nesting activities and fledging of young have been completed. The no-work buffer may only be decreased in size in coordination with the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service and the determination of a qualified biologist. Take will be avoided.

BIO-38: In the event that a southwestern willow flycatcher nest is observed in the Biological Study Area or within a quarter-mile buffer of the Project Impact Area, a qualified biological monitor will be required onsite during all construction activities within a quarter-mile of the observation. A no-work buffer may be implemented by a qualified biologist in coordination with the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service if deemed appropriate. The qualified biologist will determine the size of the buffer and will determine when nesting has been completed and the buffer may be removed.

BIO-39: Biological Resource Information Program (BRIP) training will be provided to all construction personnel about sensitive biological resources, including the southwestern willow flycatcher.

Foothill Yellow-legged Frog

To ensure avoidance of temporary or permanent impacts to the foothill yellow-legged frog, the following avoidance and minimization measures will be implemented:

BIO-40: A qualified biologist will conduct a pre-construction surveys of habitat within the project impact area for foothill yellow-legged frogs (adults, subadults, tadpoles or egg masses) 3 to 5 days prior to construction within yellow-legged frog habitat (wetted tributaries and cooler riparian habitat).

BIO-41: If construction activities are to occur in or near surface water, a biological monitor will inspect the work area daily before work begins and during construction.

BIO-42: Biological Resource Information Program (BRIP) training will be provided to all construction personnel about sensitive biological resources and habitats, including the foothill yellow-legged frog.

BIO-43: If an individual or eggs are found within the Biological Study Area or Project Impact Area during the pre-construction surveys, a no-work buffer will be implemented according to a qualified biologist recommendation in coordination with the California Department of Fish and Wildlife.

BIO-44: If an individual or eggs are found within the Project Impact Area and impacts cannot be avoided, work should be halted and coordination with the California Department of Fish and Wildlife will be initiated to determine if an Incidental Take Permit is needed.

Tehachapi Slender Salamander

To ensure avoidance of temporary or permanent impacts to the Tehachapi slender salamander, the following avoidance and minimization measures will be implemented:

BIO-45: A qualified biologist will conduct a pre-construction survey of the Project Impact Area where impacts are mapped within 3 to 5 days prior to construction activities.

BIO-46: Biological Resource Information Program (BRIP) training will be provided to all construction personnel about sensitive biological resources and habitats, including the Tehachapi slender salamander.

BIO-47: If an individual or eggs are found within the Biological Study Area or Project Impact Area during the pre-construction surveys, a no-work buffer will be implemented according to a qualified biologist recommendation in coordination with the California Department of Fish and Wildlife.

BIO-48: If an individual or eggs are found within the Project Impact Area and impacts cannot be avoided, work should be halted and coordination with the California Department of Fish and Wildlife will be initiated to determine if an Incidental Take Permit is needed.

BIO-49: With implementation of avoidance and minimization efforts, the need for compensatory mitigation is not anticipated for impacts to federally or state listed plant or animal species.

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 following analysis is based on the Natural Environment Study (September 2022) that was completed for the project.

Invasive species are species that are non-native to the ecosystem into which they have invaded or been introduced, and whose presence may cause economic, environmental, or human health harm. Invasive species can spread into natural ecosystems and displace native species, hybridize with native species, and alter natural communities and ecosystem processes.

Table 13 shows the invasive species identified during the 2021-2022 survey season. In the table, an asterisk indicates that multiple species in genus with varying ratings. “High” means that the species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically. “Moderate” means that the species have substantial and apparent, but generally not severe, ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent on ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

“Limited” means that the species are invasive, but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

Scientific Name	Common Name	Cal-IPC Rating
Cirsium vulgare	Bull thistle	Moderate
Brassica tournefortii	Sahara mustard	High*
Bromus diandrus	Ripgut brome	Moderate
Bromus madritensis ssp. rubens	Red brome	High*
Cynodon dactylon	Bermuda grass	Moderate
Lepidium latifolium	Perennial pepperweed	High
Polypogon monspeliensis	Annual beard grass	Limited
Salsola sp.	Tumbleweed	Limited
Schismus barbatus	Common Mediterranean grass	Limited

Table 13 - Invasive species identified during 2021-2022 survey seasons.

Environmental Consequences

Ground disturbance related to slope cut backs, shoulder widening, and other construction activities could potentially introduce or help propagate invasive species within the project area during construction. The project has the potential to spread invasive species through contaminated equipment entering and exiting the project site. Improper removal and disposal of invasive species during vegetation removal work may also spread invasive species where seeds may spread along the highway.

In compliance with the Executive Order on Invasive Species, Executive Order 13112, and guidance from the Federal Highway Administration, the landscaping and erosion control included in the project will not use species listed as invasive. The project will use native vegetation to establish landscaping and revegetation areas, and none of the species on the California list of invasive species will be used by Caltrans for erosion control or landscaping. Any identified invasive plant species within the project area would be removed as part of construction-related vegetation removal. Invasive species will also be removed from project revegetation areas during the establishment periods.

All equipment and materials will be inspected for the presence of invasive species and cleaned if necessary. In areas of particular sensitivity, extra precautions will 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

To prevent the spread of invasive plants from outside of the project area to the project site, the following measures will be implemented:

BIO-50: Wash all vehicles and heavy equipment, including tires and undercarriage, and hand-held tools such as shovels and rakes, that have been used offsite before bringing them onto the project site.

BIO-51: Vacuum and clean the interior of vehicles and heavy equipment that have been used offsite before bringing them onto the project site.

BIO-52: Clean personal gear and clothing, including footwear, that have been worn offsite before bringing them onto the project site.

BIO-53: Do not transport soil or other fill material from offsite locations unless it is known that they do not contain viable seed material.

BIO-54: Use only approved seeds and seedlings when restoration is required. Prepare soils appropriately to encourage new seeds and plants to survive.

BIO-55: Biological Resource Information Program (BRIP) training will be provided to all construction personnel about preventing spread of invasive species.

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 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 the California Environmental Quality Act can be found in Section 15355 of the California Environmental Quality Act Guidelines. A definition of cumulative impacts under the National Environmental Policy Act can be found in 40 Code of Federal Regulations Section 1508.7.

Cumulative Impact Assessment – Introduction

This study provides an assessment of the potential for the State Route 58 Truck Climbing Lane project to contribute to cumulative impacts on environmental resources when combined with impacts of past, present and reasonably foreseeable future projects. As noted above, cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of a project; cumulative impacts can result from individually minor but collectively substantial impacts taking place over time.

The cumulative impact analysis was prepared following the Caltrans Guidance for Preparers of Cumulative Impact Analyses (herein referred to as the Caltrans Guidance). The analysis follows

an 8-step approach for identifying and assessing cumulative impacts. In this section, each step is identified, defined, and the methods are applied to the proposed project.

Step 1 – Identification of Resources

The first step in performing a cumulative impact analysis is to identify which resources to consider in the analysis. Cumulative impact analyses focus on resources that would be significantly impacted, either directly or indirectly by a proposed project and/or resources that are in poor or declining health. The proposed project has the potential to result in direct impacts to the Tehachapi Wildlife Habitat Connectivity Corridor connecting the southern Sierra Mountain Range to the Coastal Mountain Ranges through the Tehachapi area.

Ongoing research consisting of wildlife camera data, GPS data from collaring of local wildlife, and roadkill data conducted by Caltrans District 9 Biology Unit, The Nature Conservancy, California Department of Fish and Wildlife Region 4, and the University of California, Davis indicates that the regional Wildlife Habitat Connectivity Corridor is in poor or declining health and is therefore the resource considered in this cumulative impact analysis. Habitat connectivity refers to the degree to which wildlife can move unimpeded across habitats to maintain natural processes such as nutrient flow, gene flow, seasonal migration, and predator-prey relationships. Habitat corridors are used to connect patches of habitat similar to how neighborhood roads are connected by alleys and classrooms are connected by hallways. This corridor is important because it connects numerous species of special concern and common species to the Sierra Nevada Range ecoregion through the Tehachapi Mountains and onward to the Coastal and Southern California Mountain Ranges. In the 2020 California Wildlife Barriers report, the California Department of Fish and Wildlife identified this section of State Route 58 as one of the highest priority wildlife barriers in the state (Gogol-Prokurat 2020). The 2010 joint Caltrans and California Department of Fish and Wildlife California Essential Habitat Connectivity report identified the corridor as an irreplaceable, essential connectivity area for wildlife passage (Spencer et al. 2010).

Step 2 – Defining the Resource Study Areas

Step 2 of the Caltrans Guidance indicates that a geographic boundary or Resource Study Area (RSA) must be defined for each resource. A Resource Study Area is the geographic area within which impacts on a resource are analyzed. The boundaries of a Resource Study Area are often broader than the boundaries used for project-specific analysis, such as a Biological Study Area. The Resource Study Area for the resource is described below and shown in Figure 19.

The Resource Study Area presented below is based on the wildlife connectivity corridor defined by the California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California (EHS, 2010) and the State Route 58 Corridor Management Plan: Wildlife Connectivity and Mobility Review (CTD9, July 2021). The Resource Study Area was identified by considering the effects that past, current, and reasonably foreseeable future projects have had or could have on the essential wildlife connectivity area that provides wildlife passage from the Sierra Nevada ecoregion to the north, Mojave Desert ecoregion to the east, Southern Coastal Range ecoregion to the south, and the Central Valley ecoregion to the west. The area where these ecoregions merge is one of high biologic value. The wildlife corridor overlaps a western portion of State Route 58 between State Route 14 and the eastern flank of Bakersfield, centering around the Tehachapi Pass area. The area of urban development in eastern Bakersfield was removed from the Resource Study Area because its impact on the wildlife corridor has diminished the health of the resource to a level far below the rest of the defined Resource Study Area.

The boundary of the Resource Study Area was defined by analyzing the mapped extent of the wildlife corridor centering its location within the projects currently proposed along this section of State Route 58 and extending a radius that nears Interstate 5 to the west and State Route 14 to the east. The Resource Study Area covers approximately 1,052,602 acres (1,645 square miles) of mostly open land with some rural development surrounding the Truck Climbing Lane project. The area includes the city of Tehachapi and encompasses the Tehachapi Creek, Grapevine, and Fremont hydrologic units across the southern end of the Sierra Nevada (see Figure 19).

Figure 19 shows the density of current and reasonably foreseeable projects, both transportation and non-transportation related, within the Resource Study Area defined for the cumulative impact analysis. The map shows a relatively higher density of project occurring within and adjacent to the city of Tehachapi (shown by the circular shape with yellow center) and a lesser density of project on the outskirts of town and beyond.

Step 3 – Resource Health and Historic Context

Step 3 of the Caltrans Guidance indicates that the current health and historical context of each resource should be defined to provide background for the cumulative analysis. Much of the information in this section comes from the Natural Environment Study prepared for the project, the California Essential Habitat Connectivity Project (EHS, 2010), the California Wildlife Barriers Report (Gogol-Prokurat, 2020), the South Coast Missing Linkages: Linkage Design for the Tehachapi Connection Report (Penrod et al., 2003), and The Tehachapi Connection: A Case Study of Linkage Design, Conservation, and Restoration of 2012 (White and Penrod, 2012). Please refer to these technical studies for additional background information on the wildlife connectivity corridor resource discussed in this section.

As mapped by the California Essential Habitat Connectivity Project, wildlife habitat connectivity within the Resource Study Area encompasses an area of high biological value where the Southern Sierra Nevada, Mojave Desert, Great Central Valley, and South Coast ecoregions merge. It is likely that this was a robust wildlife corridor prior to the construction of State Route 58, laying the rails of the Union Pacific Railroad, and human conversion of natural habitat to areas of agricultural production.

Historic records indicate the corridor supported a higher population of pronghorn (*Antilocapra* americana), mule deer, and Tule elk than is currently present (Bob Stafford, California Department of Fish and Wildlife Biologist, personal communication 2023). Generally, this region, like much of the west, experienced severe declines of many wildlife species due to unregulated hunting in the 1800s. Animals were harvested for commercial meat market, fur trade, and many bird species were harvested for decorative feathers. Species like grizzly bears and prairie wolves remain locally extinct from the area, but mule deer, elk, and pronghorn have returned. The return of mule deer, elk, pronghorn and other species is mostly the result of land conservation, habitat restoration, and legislative acts passed that inspired the North American Model of Wildlife Conservation. These acts include the Lacey Act of 1900, the Migratory Bird Treaty Act of 1918, the Migratory Bird Hunting and Conservation Stamp Act of 1934, the Federal Aid in Wildlife Restoration Act of 1937, and the Federal Aid in Sport Fish Restoration Act of 1950. The seven features of the North American Model of Wildlife Conservation that have led to species conservation include:

1) Wildlife is a public resource where State wildlife agencies have the role of managing that resource on behalf of all citizens and to ensure the long-term sustainability of wildlife populations.
2) Markets for game are eliminated.

3) Allocation of wildlife by laws created by State wildlife agencies.
4) Wildlife can only be killed for a legitimate purpose.
5) Wildlife species are considered an international resource protecting species such as migratory birds.
6) Science is the proper tool for discharge of wildlife policy.
7) Access to wildlife without regard for wealth, prestige, or land ownership.

The location and design of the highway have altered the natural environment by creating a partial barrier to normal wildlife movement and activity, which affects local wildlife mortality rates, creates habitat loss, reduces habitat quality, and subdivides wildlife species (Natural Environment Study September 2022). Up until the mid-1800s, there were simple roads that provided passage for the ranchers and farmers that lived in this remote location. In 1919, the route was designated Legislative Route Number (LRN) 58. As part of the route renumbering in 1964, the route was made California State Route 58. In 1962, this route was opened as a four-lane highway from Caliente Road (modern Bealeville Road) east to the town of Keene, two years after the 12-mile segment to the west had been opened. Traffic volumes on State Route 58 recorded at the State Route 202 interchange increased by 341 percent from 1964 to 2022 with increased travel and freight demands (see Table 14). While the two bridges built at Hart Flat and Keene interchanges as well as the one over Tehachapi Creek provide for some wildlife crossing, no specific effort was put into providing safe wildlife crossings.

In addition to the highway, another impediment for wildlife habitat connectivity is the railroad. The Southern Pacific Railroad was extended from Bakersfield to Mojave after the north-south segment connecting Los Angeles and the Bay Area in 1876. During 1899, Southern Pacific entered into an agreement that allowed Santa Fe Railway to use the route. In 1996, Union Pacific absorbed Southern Pacific and Burlington Northern Santa Fe succeeded Santa Fe, both of which continue to operate the Tehachapi line. This continues to be one of the busiest single-track railroads on the continent, with about 50 trains a day, many over 1 mile in length (source: https://www.american-rails.com/tehachapi.html), riding the rails through the famous Tehachapi Loop).

Overall, the wildlife connectivity corridor is considered to be in moderate to poor health within the Resource Study Area. The wildlife corridor is considered one of the highest priorities in the state of California for improvement. The existing highway, railroad, and urban development negatively impact survival and essential ecological processes within the corridor. Table 14 shows the annual average daily traffic (total traffic volume for the year divided by 365 days) for State Route 58 at the State Route 202 interchange (post mile 90.7) approximately every decade from 1964 forward to the most recent data available in 2022.

Year	Annual Average Daily Traffic
1964	5,600
1974	5,800
1984	10,000
1994	17,600
2004	21,800
2014	20,700
2022	24,700

Table 14 - Annual average daily traffic for State Route 58 at the State Route 202 interchange.

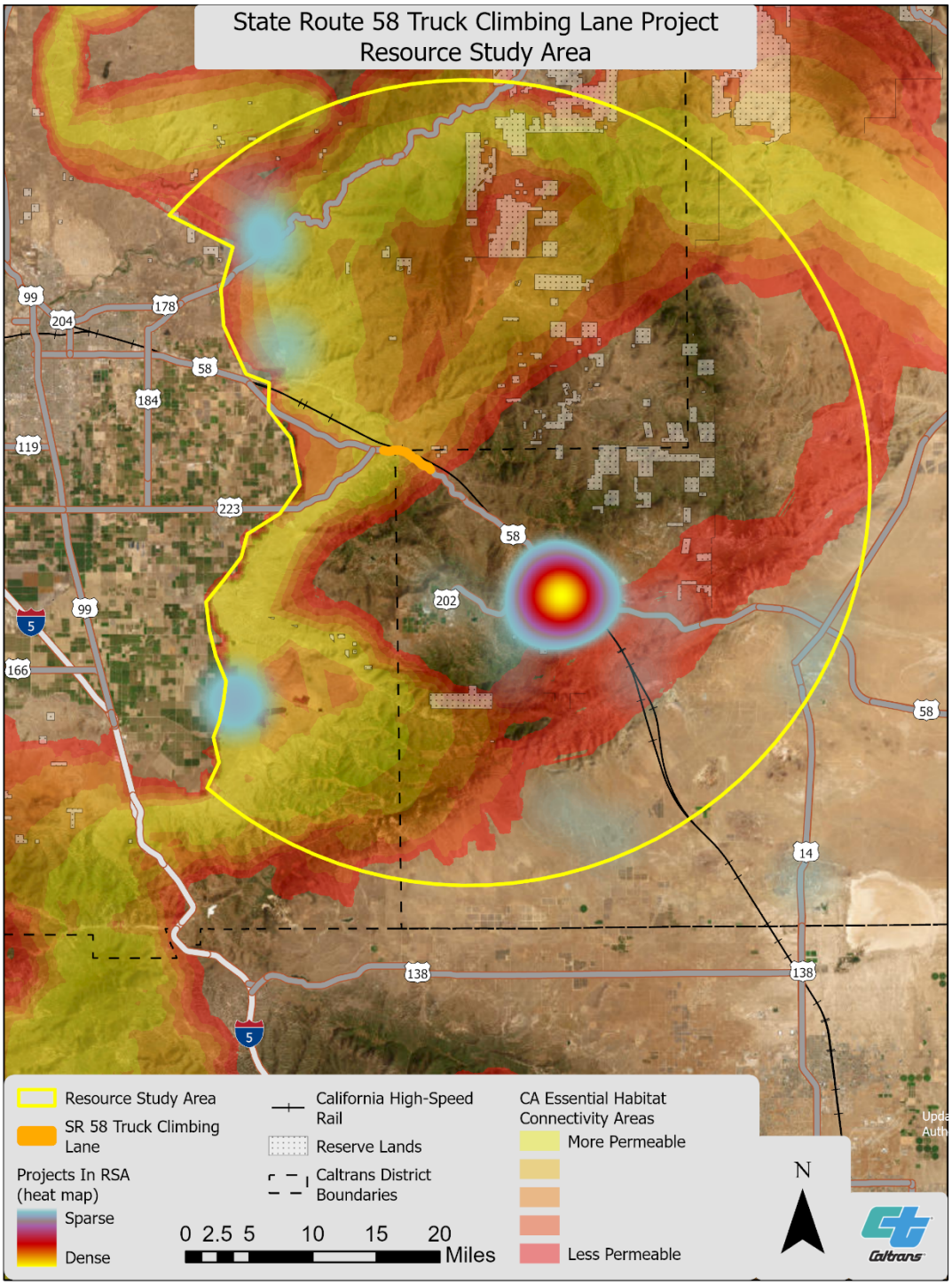

Figure 19 - Resource Study Area for the State Route 58 Truck Climbing Lane Project.

Step 4 – Potential Project Impacts

Step 4 of the Caltrans Guidance involves the identification of direct and indirect impacts of the project that might contribute to a cumulative impact on the identified resources. Potential impacts to wildlife habitat connectivity are summarized here and discussed in greater detail in the September 2022 Natural Environment Study prepared for the project, as well as in Chapter 2 of this document under the Habitat Connectivity heading.

The addition of a 12-foot-wide, 3.5-mile-long truck climbing lane would result in direct and indirect permanent impacts to wildlife habitat connectivity as well as temporary impacts during construction. The addition of another lane and extension of culverts will result in direct and permanent loss of wildlife habitat. Adding another lane through the western section of the corridor has the potential to further impact wildlife's ability to cross the highway and may increase wildlife vehicle collisions within the project limits. Indirect impacts to wildlife connectivity may result if the additional lane creates a barrier effect and deters wildlife that may currently be crossing over the roadway to seek other crossing locations by traveling up and down the corridor, thus intensifying the current partial wildlife barrier created by the existing lanes and concrete median barrier.

Temporary impacts during construction may disrupt wildlife behavior and deter wildlife from the project area due to equipment operations, increased noise, lights, human traffic and use of equipment and material staging areas. Two culverts within the project limits are currently being used by some species as a means of crossing under the highway; there is a high likelihood that wildlife using these culverts now will not attempt to use them during construction.

Step 5 – Identify Other Current and Reasonably Foreseeable Transportation and Non-Transportation Projects

Step 5 of the Caltrans Guidance indicates that current and reasonably foreseeable future projects with a moderate to high likelihood of being constructed within a Resource Study Area must be identified and their associated environmental impacts included in the cumulative impact analysis. Sources consulted for developing the cumulative project list include the Caltrans project database and online resources from the California Environmental Quality Act Web Portal, County of Kern, City of Tehachapi, Kern Council of Governments, State Water Resources Control Board, U.S. Army Corps of Engineers, California Department of Fish and Wildlife, and Union Pacific Railroad.

Tables 15 and 16 provide lists of both transportation and non-transportation projects that were identified within the Resource Study Area that have a moderate to high likelihood of being constructed in the future. Every effort was made to provide a comprehensive list of all current and foreseeable future projects within the Resource Study Area and obtain information on potential environmental impacts associated with each project. There are multiple projects on the list that include single-family and multi-family dwellings, hotels, restaurants, storage buildings, warehouses, retail stores, gas stations and so on that have received building permits from the City of Tehachapi. Information on potential environmental impacts resulting from the construction and operation of these projects is unavailable, but it is assumed that the building permits were issued under a California Environmental Quality Act Categorical Exemption.

Adopted plans that direct local and regional land use projects pertaining to the Resource Study Area were reviewed. These plans included General Plans, Specific Plans, Area Plans, Community Plans, and other land use planning documents for the City of Tehachapi and the unincorporated areas of Kern County within the Resource Study Area. All land use plans reviewed for the area include the requirement that every land development project must mitigate or compensate for the loss of identified wildlife habitat, and several jurisdictions and private development companies have developed habitat conservation plans and natural communities' conservation plans to address habitat loss. Information on non-transportation infrastructure projects was obtained from the applicable agencies. These projects are in various phases (planning, design, and implementation and/or construction) and all are partially or entirely within the boundary of the Resource Study Area.

Table 15 - Summary of Land Development and Non-transportation Infrastructure Projects in the State Route 58 Truck Climbing Lane Resource Study Area.

Project Name and ID Number (refer to Figure 19)[1]	Project Description	Summary of Environmental Evaluation, Documentation, and Impacts
PROJECTS IN THE CITY OF TEHACHAPI		

Mojave Inland Port – Site Plan Review 1, Zone Map 179
• Applicant
  ○ Tehachapi Holdings, LLC
• Location
  ○ Southeast corner of State Route 58 and State Route 14 (APN 225-250-21 & 225-241-18).
	This project proposes the Construction of facilities and equipment in support of a drayage facility (transport of freight from an ocean port to a destination) in an M-2 (Medium Industrial) and an M-3 (Heavy Industrial) District, in an area covering approximately 700 square miles.	This project is grouped with other building permits that are ministerial under Kern County Zoning Ordinance and are exempt under Sections 21080(b)(1); 15268 of the State CEQA Guidelines. An NOE was submitted July 2002.
		
		Sources: https://ceqanet.opr.ca.gov/2022070323, assessed Dec. 2022

Oak Tree Village
• Location
  ○ North of Hwy 58 and east of Capital Hills area (Assessor's Parcel Numbers [APNs] 223-040-12, 223-040-13 and 223-040-14) in the City of Tehachapi, California
  ○ 35.14120800, -118.43013700
	The project includes: an approximately 25 to 30-acre Continuing Care Retirement Community (CCRC) (up to three stories), "active adult" (i.e. 55 years and older) housing (one to two stories) ranging from context-appropriate multi-family dwellings to large-lot homes, small-scale and/or neighborhood commercial/retail uses, recreational and open space areas, and associated circulation, drainage and stormwater management, and utility improvements. Potential General Plan Amendments or Zoning Amendments that would be identified in the Specific Plan and evaluated in the EIR are anticipated to include provisions for three-story development, identification of a special district zone to accommodate the proposed CCRC, and an amendment to the Regulating Plan to address transect zone consistency.	A Notice of Preparation of a draft Environmental Impact Report (Draft EIR - dated 9/16) was prepared for this project. The EIR Initial Study states that the project has the potential to create a new or increased impact to movement of any resident or migratory species. It further states, "The Project site is currently undeveloped and provides habitat for common wildlife activity including foraging, hunting, burrowing, and nesting. Blue oak woodland and juniper (Juniperus spp.) trees within the northern portion of the Project site provide suitable nesting habitat for birds. While development would push wildlife activity into adjacent vacant lands to the north and east, based on the Project's location within the city and proximate to SR-58, and abundance of open land to the north, the Project is not anticipated to interfere substantially with the movement of wildlife. Until this issue is evaluated further in the EIR, this impact is considered potentially significant."
		
		A final EIR was not available at the time of this Cumulative Impact Analysis.
		
		Sources: https://www.liveuptehachapi.com/DocumentCenter/View/3415, assessed Dec. 2022

Marriot Townplace Suites
• Location
  ○ Magellan Drive and Capital Hills Parkway
  ○ 35.14474728, -118.44977525
	This project will construct and operate a three-story, 83-room hotel on an 84,223 square foot (1.93 acre) site. The gross building area is 46,540 square feet, while the remainder of the site will consist of a parking lot, paved walkways and landscaping. An asphalt parking lot will be constructed with 86 parking stalls and two driveways for ingress/egress on Magellan Drive. Installation of curb and gutter will occur along Athens Street and Magellan Drive. The project will include installation of internal and perimeter landscaping and related features such as signage, parking / security lighting, and an enclosed trash bin. Existing City services (water, sewer and stormwater) are located in adjacent roadways and the Project Applicant will be required to tie into these existing facilities. Construction is expected to begin in 2019 and will take approximately 12 months to complete. The Project is located on parcels 223-560-15 and 223-560-16.	An Initial Study/Negative Declaration (IS/ND – dated 10/18) states that the project will have a less than significant impact on wildlife corridors.
		
		Sources: https://www.liveuptehachapi.com/DocumentCenter/View/4541/Tehachapi-Marriott-pub-review-CEQA-10-17-18, assessed December 2022.

Sage Ranch
• Location
  ○ Between Valley Boulevard and Pinon Street
  ○ 35.12066477, -118.44206933
	This project will subdivide and develop approximately 138-acres of T-4 zoned land into a residential community with a mix of single-family and multi-family housing units. The proposal features eight different types of housing products for a total of 1,000 residential units at buildout.
	The Project includes a total of five pedestrian sheds, all civic space, within the Project. The Project would be built out over a seven-year period with approximately 143 units per year on average.
		An Environmental Impact Report (EIR - dated 2/20/20) states that no unavoidable significant adverse effects on biological resources would occur from implementing the Project. The EIR does not specifically call out the Project's potential significance to wildlife corridors.
		
		Sources: https://www.liveuptehachapi.com/DocumentCenter/View/5878, assessed December 2022.

Project Name and ID Number (refer to Figure 19)[1]	Project Description	Summary of Environmental Evaluation, Documentation, and Impacts

The Address
• Location
  ○ Corner of Tucker Road and Highline Boulevard
  ○ 35.10976283, -118.46821340
	This project is a Planned Residential Development that proposes to construct the following:
	• 234 lots ranging in size from 6,600 square feet to 8,100 square feet for detached single-family residences and 3 larger single-family lots ranging in size from 10,373 square feet to 16,620 square feet for a total of 239 developable lots;
	• 1.97 acres of open space consisting of two park/open space areas anchored by a community clubhouse and amphitheater at the center of the subdivision; and
	• A large lot reserved for installation of storage units and to allow for parking recreational vehicles for sole use of residents at the Southeast corner of the subdivision.
	The Project includes public road improvements to adjacent County-maintained roadways. Domestic water supply and wastewater treatment would be provided by the City of Tehachapi. The tract map will be recorded in up to eleven phases. Construction of homes is anticipated to occur over a nine-year period commencing as early as September 2020 with completion by September 30, 2030.
		An Initial Study/Mitigated Negative Declaration (IS/MND - dated 6/2020) states that no significant impact to wildlife corridor will occur due to project implementation with mitigation incorporated.
		Sources: https://www.liveuptehachapi.com/DocumentCenter/View/5559, assessed December 2022.

Capital Hills Gas Station and Retail
• Location
  ○ Easterly of the intersection at Capital Hills Parkway and Magellan Drive
  ○ 35.14331023, -118.44911879
	This project will construct of a new commercial retail center within the northwest section of the Tehachapi. The Project includes approximately 4,893 square feet of structures to include a food store, retail, a drive-thru restaurant, and a gas station. The Project would be constructed on an 0.88-acre vacant lot. Construction of the Project would involve excavation, grading, paving, building construction with infrastructure (plumbing and electrical), and painting. Principal deliveries would include construction equipment, imported earthwork materials, concrete and asphalt materials, building materials, and any additional hardware required to construct the Project. Material and equipment staging areas, as well as construction crew parking, would be contained on-site. Construction is estimated to take six months to complete. Project construction commencement is subject to securing the permits required for the Project and City adoption of this IS/MND.	An Initial Study/Mitigated Negative Declaration (IS/MND) prepared for this project states that the project will have no impact on wildlife corridors.
		Sources: https://www.liveuptehachapi.com/DocumentCenter/View/6122, assessed Dec. 2022

Nabers Self Storage
• State Clearinghouse # 2017101054
• Location
  ○ North of Industrial Parkway and east of the Tractor Supply
  ○ 35.13730832, -118.44953019
	Land Use
	• Self-storage
	Size
	• 3.97 acres
		A negative declaration was received by the State Clearinghouse on 10/25/17.
		Source: https://ceqanet.opr.ca.gov/2017101054, assessed December 2022.

Tract Map No. 6062
• Location
  ○ South of Pinon St, west of Dennison Rd, east of Curry St, and north of Highland Rd
  ○ 35.11529300, -118.44532300
	Land Use
	• Single Family
	Size
	• 125 Dwelling Units
		City of Tehachapi Building Permit

Project Name and ID Number (refer to Figure 19)[1]	Project Description	Summary of Environmental Evaluation, Documentation, and Impacts

Tract Map No. 6216
• Location
  ○ South of Pinon St, west of Curry St, and north of Highland Rd
  ○ 35.11378400, -118.45262000
	Land Use
	• Single Family
	Size
	• 384 Dwelling Units
		City of Tehachapi Building Permit

Tract Map No. 6507
• Location
  ○ North and adjacent to Pinon St and west and adjacent to future extended of Applewood Dr
  ○ 35.11711900, -118.45322100
	Land Use
	• Condominium
	Size
	• 96 Dwelling Units
		City of Tehachapi Building Permit

Tract Map No. 6554
• Location
  ○ North and adjacent to Valley Blvd, west and adjacent to Dennison Rd, and north of Tehachapi High School
  ○ 35.12500600, -118.43361400
	Land Use
	• Single Family
	Size
	• 95 Dwelling Units
		City of Tehachapi Building Permit

Tract Map No. 6714
• Location
  ○ North and adjacent to Pinon St, south of Cherry Ln
  ○ Latitude/longitude unavailable
	Land Use
	• Single Family
	Size
	• 75 Dwelling Units
		City of Tehachapi Building Permit

Tract Map No. 6668
• Location
  ○ Adjacent to Fig Drive
  ○ Latitude/longitude unavailable
	Land Use
	• Single Family
	Size
	• 18 Dwelling Units
		City of Tehachapi Building Permit

Tract Map No. 6248
• Location
  ○ South End of Robinson Street
  ○ 35.12777600, -118.44662700
	Land Use
	• Single Family
	Size
	• 30 Dwelling Units
		City of Tehachapi Building Permit

Mill Street Retail Center
• Location
  ○ Northeast corner of Mill St and Industrial Pkwy
  ○ 35.137185, -118.45085200
	Land Use
	• Restaurant
	Size
	• 3,000 Square Feet
		City of Tehachapi Building Permit

Aspen Street Architects
• Location
  ○ Located in Capital Hills, north and adjacent to Athens St, east of Voyager, west of Challenger
  ○ 35.14670400, -118.45092000
	Land Use
	• Medical Office
	Size
	• 66,000 Square Feet
		City of Tehachapi Building Permit

Project Name and ID Number (refer to Figure 19)[1]	Project Description	Summary of Environmental Evaluation, Documentation, and Impacts

Hampton Inn
• Location
  ○ North and adjacent to Capital Hills Parkway, east of Challenger Drive
  ○ 35.14524000, -118.44832500
	Land Use
	• 85 room, 3 story hotel
	Size
	• 51,232 Square Feet
		City of Tehachapi Building Permit

Industrial Parkway Warehouse
• Location
  ○ North of Industrial Parkway, East of North Mill Street (APN 415-170-15)
  ○ 35.13729077, -118.45066744
	Land Use
	• Storage, Warehouse, Retail
	Size
	• 28,357 Square Feet
		City of Tehachapi Building Permit

Love's Travel Center Shower Expansion
• Location
  ○ East Tehachapi Specific Plan, south and adjacent to Tehachapi Boulevard, east of Highway 58 off-ramp, west of Monolith Street. (APN 223-480-13)
  ○ 35.12590500, -118.40896200
	Land Use
	• Gas Station
	Size
	• 442 Square Feet
		City of Tehachapi Building Permit

Industrial Parkway Mini Storage • Location • North of Industrial Parkway and adjacent to the eastern side of Tractor Supply store. (APN 415-170-14, 415-170-19) ○ 35.13798400, -118.44962700	Land Use • Storage Size • 103,799 Square Feet	City of Tehachapi Building Permit

Steuber Road Truck Wash
• Location
  ○ South of Pilot/Flying J Travel Center
  ○ 35.12607757, -118.41508490
	Land Use
	• Truck Wash, Retail
	Size
	• 12,760 Square Feet
		City of Tehachapi Building Permit

Snow Orthodonics
• Location
  ○ East side of Tucker Road between Tehachapi Boulevard and Valley Boulevard. (APN 416-010-08)
  ○ 35.12874147, -118.45286274
	Land Use
	• Medical Office
	Size
	• 14,499 Square Feet
		City of Tehachapi Building Permit

Love's Tire Shop Expansion
• Location
  ○ East Tehachapi Specific Plan, south and adjacent to Tehachapi Boulevard, east of Highway 58 off-ramp, west of Monolith Street. (APN 223-480-13)
  ○ 35.12590500, -118.40896200
	Land Use
	• Gas Station
	Size
	• 23,000 Square Feet
		City of Tehachapi Building Permit

Cimmaron Court Multi-Family
• Location
  ○ South end of Cimmaron Court
  ○ 35.11256164, -118.44895748
	Land Use
	• Multi-Family
	Size
	• 10 Dwelling Units
		City of Tehachapi Building Permit

Project Name and ID Number (refer to Figure 19)[1]	Project Description	Summary of Environmental Evaluation, Documentation, and Impacts

103 West J Street
• Location
  ○ NW Corner of West J Street and North Green Street
  ○ 35.13552616, -118.44712635
	Land Use
	• Warehouse
	Size
	• 3,880 Square Feet
		City of Tehachapi Building Permit

Capital Hills Starbucks
• Location
  ○ SW corner of Voyager and Capital Hills Parkway
  ○ 35.14241541, -118.45080668
	Land Use
	• Drive-through
	Size
	• 6,055 Square Feet
		City of Tehachapi Building Permit

Adaptive Aerospace Building
• Location
  ○ 501 Bailey Court
  ○ 35.12779456, -118.42714767
	Land Use
	• Light Manufacturing, Office, Warehouse
	Size
	• 15,800 Square Feet
		City of Tehachapi Building Permit

Goodrick Drive Parcel 8 Light Industrial Building
• Location
  ○ Parcel 8 of Parcel Map 8331; along Goodrick Drive, east of Dennisonc
  ○ 35.13120678, -118.43019527
	Land Use
	• Light Industrial Building
	Size
	• 9,875 Square Feet
		City of Tehachapi Building Permit

Bailey Court Lot 5 Light Industrial Building
• Location
  ○ Lot 5 of Bailey Court
  ○ 35.12860226, -118.42712284
	Land Use
	• Light Industrial Building
	Size
	• 10,000 Square Feet
		City of Tehachapi Building Permit

Bailey Court Lot 13 Light Industrial Building
• Location
  ○ Lot 13 of Bailey Court
  ○ 35.12861981, -118.42616798
	Land Use
	• Light Industrial Building
	Size
	• 10,000 Square Feet
		City of Tehachapi Building Permit

Tehachapi Boulevard Recreational Vehicle Park and Self-Storage
• Location
  ○ Tehachapi Boulevard between Dennison and Stueber
  ○ 35.12846318, -118.42199974
	Land Use
	• Recreational Vehicle Park and Self-Storage
	Size
	• 30 Acres
		City of Tehachapi Building Permit

Tehachapi Self-Storage
• Location
  ○ North side of West Tehachapi Boulevard, West of Mt. View Avenue
  ○ 35.13204219, -118.46132712
	Land Use
	• Self-Storage
	Size
	• 4 Acres
		City of Tehachapi Building Permit

J Street Commerce
• Location
  ○ West of North Mill Street and south of Enterprise Way
  ○ 35.13662852, -118.45210652
	Land Use
	• Office, non-perishable manufacturing, storage, and warehousing
	Size
	• 2.87 Acres
		City of Tehachapi Building Permit

Mulberry Natural Resource
• Location
  ○ Southeast corner of Mulberry Street and F Street
  ○ 35.13150212, -118.45571497
	Land Use
	• Office
	Size
	• 0.76 Acres
		City of Tehachapi Building Permit

Project Name and ID Number (refer to Figure 19)[1]	Project Description	Summary of Environmental Evaluation, Documentation, and Impacts

AT&T Mobility
• Location
  ○ Southwest corner of Dennison Road and West Valley Boulevard
  ○ 35.12406453, -118.43248835
	Land Use
	• Unmanned telecommunications facility
	Size
	• n/a
		City of Tehachapi Building Permit

• Pinon Curry North & South
• Location
  ○ Northwest and southwest corners of Curry Street and Pinon Street
  ○ 35.11689928, -118.45031329
	Land Use
	• Condominium
	Size
	• 3.06 Acres
		City of Tehachapi Building Permit

Sherwood Condominiums
• Location
  ○ Southwest corner of Elm Street and Applewood Drive
  ○ 35.11971040, -118.45356742
	Land Use
	• Condominium
	Size
	• 1.92 acres
		City of Tehachapi Building Permit

Tehachapi Hayes Mixed Use
• Location
  ○ Southeast corner of East Tehachapi Boulevard and Hayes Street
  ○ 35.13120301, -118.44102761
	Land Use
	• Retail, restaurant, multi-family
	Size
	• 0.50 acres
		City of Tehachapi Building Permit

PROJECTS IN THE UNINCORPORATED AREAS OF KERN COUNTY		

Granite Solari Sand and Gravel Quarry Phase 1
• Location
  ○ Arvin
  ○ 35.03º, -118.81º
	Land Use: Dredge/Fill Site
	• Regulation Measure ID: 419,966
	• Oject ID: 5,082
	• Agency Name: Granite Construction Company Bakersfield
	• Active Date: March 5, 2018
		Program: CDFW CERFILLEXC
		Regulation Measure Type: Individual Monitoring Requirement
		• Regulation Measure Name: Ind MRP for Granite Construction Company Bakersfield

Bena Sanitary Landfill Drainage Improvements Kern Canyon Diversion Dam
• Location
  ○ 2951 Neumarkel, Bakersfield
  ○ 35.36º, -118.76º
	Land Use: Dredge/Fill Site
	• Regulation Measure ID: 407,939
	• Oject ID: 11,450
	• Agency Name: Kern County Waste Management
	Active Date: July 4, 2016
		Program: CDFW CERFILLEXC
		Regulation Measure Type: Individual Monitoring Requirement
		Regulation Measure Name: Ind MRP no order # for Kern City Waste Management

Kern Canyon Diversion Dam • State Clearinghouse # 2021070226 • Location ○ 35.46º, -118.78º	Land Use: Dredge/Fill Site • Regulation Measure ID: 440,881 • Oject ID: 74,767 • Agency Name: Kern and Tule Hydro LLC Active Date: November 23, 2020	Program: CDFW CERFILLEXC Regulation Measure Type: 401 Certification Regulation Measure Name: 401 Cert for Kern Canyon Diversion Dam Repair and Rock Fall Fence Maintenance

• Solari Quarry Gas Pipeline Relocation
• Location
  ○ 8999 Capacity, Arvin
  ○ 35.030º, -118.82º
	Land Use: Dredge/Fill Site
	• Regulation Measure ID: 412,884
	• Oject ID: 79,097
	• Agency Name: Southern California Gas Company
	Active Date: May 7, 2017
		Program: CDFW CERFILLEXC
		Regulation Measure Type: Enrollee - Waste Discharge Requirement
		Regulation Measure Name: Enrollee - Waste Discharge Requirement for Southern California Gas Company

Table 16 - Summary of Transportation Projects in the State Route 58 Truck Climbing Lane Resource Study Area.

Project Name and ID Number (refer to Figure 19)[1]	Project Description	Summary of Environmental Evaluation, Documentation, and Impacts
PROJECTS IN THE CITY OF TEHACHAPI		
Pinon Rd • Project ID: 0921000023 • Location o Tehachapi, CA o Near Pinon and Dennison Road	The City of Tehachapi is currently planning to pave an unmaintained dirt road. This will close a gap in Pinon St of approximately 0.5 miles. The project will begin at the intersection with Dennison Rd and continue east until the paved portion of Pinon St begins. Currently this dirt section of road provides a source of air pollution (PM10) and is frequented by local traffic. This project is funded by Kern COG's air quality improvement program (CMAQ). Paving this road surface will eliminate a source of air pollution. All work and construction activities will be within the City's right-of-way. Minor utility relocations will occur.	The project NEPA CE states no known biological, hazardous, or historic properties will be impacted by this project. Therefore, no impact to the wildlife corridor is expected. Sources: Caltrans District 9 Local Assistance records, assessed Dec. 2022
SR 58 Truck Climbing Lane • Project ID: 0919000011 • Location o SR 58 PM 76.3/R79.8	This project shall install a 14' truck climbing lane and 10' inside and outside shoulders to meet the design standards of the HDM between PM 76.3/79.8, From PM 76.3 to 77.4 where the existing inside shoulder is 7' additional widening will be needed to create the standard 10' shoulders; Thus, roadway widening shall be 17' from PM 79.3 to 77.4 and 14' from PM 77.4 to 79.8. The edge conditions beyond the roadway contain large Cut and Fill slopes which will be re-graded as part of the widening. Where feasible the design intends to use earthwork to minimize the use of retaining, soil nail, or Mechanically Stabilized Earth walls. Controlled Blasting as a method of Rock Excavation is not anticipated in areas of cut, pending direction from a Geotechnical Report. Unsuitable subgrade materials underlaying the new pavement structure will be removed to a maximum of 12" below the new pavement structure and be replaced with a Treated Permeable Base (TPB) with an edge drain to provide subgrade drainage. The Bena Road At-Grade intersection (PM.77.06) will be truncated to provide access control and upgrades shall be installed at the remaining Bealville Road At-grade intersection. Culverts and overside drains shall be extended to accommodate the roadway widening. The Box culvert at Clear Creek (PM 78.64) and other locations where determined feasible shall be assessed for enhancements to wildlife connectivity. Exclusionary Fencing and wildlife jump-outs represent other features intended to improve the needs of the wildlife corridor that overlaps the project limits. This project shall install Permanent Post-Construction Treatment BMPs to treat the addition of new impervious surface created by the roadway widening. This project proposes Design Pollution Prevention Infiltration areas, infiltration basins and traction sand trap. Treatment BMPs will rely on guidance of the HDM and Stormwater Project Planning Design Guide to be implemented as required. This project shall also improve roadside features, such as: replace lighting near Bena Road At-Grade intersection, replace Guard Rail, install rumble stripes, bring signage to current standards, install new pavement delineation and pavement markers. Additional Right-of-Way and Temporary construction easements are anticipated with the widening and needs for construction and maintenance access.	The project Draft NEPA EA states that with mitigation measures incorporated, no known biological, hazardous, or historic properties will be significantly impacted by this project. Therefore, no impact to the wildlife corridor is expected. Sources: Caltrans State Route 58 Truck Climbing Lane Project Draft Initial Study with Proposed Mitigated Negative Declaration/Environmental Assessment, March 2023.

Project Name and ID Number (refer to Figure 19)[1]	Project Description	Summary of Environmental Evaluation, Documentation, and Impacts
Enhanced Striping • Project ID: 0921000032 • Location ○ Tehachapi, CA	Install thermoplastic edgelines and centerlines on various roadways throughout the city limits of Tehachapi.	The project NEPA CE states class 1 consists of the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of use. Therefore, no impact to the wildlife corridor is expected. Sources: Caltrans District 9 Local Assistance records, assessed Dec. 2022
Dennison Rd Bike/Ped Improvements • Project ID: 0922000012 • Location ○ Tehachapi, CA	As part of the California's competitive Active Transportation Program (ATP) the City of Tehachapi was awarded funds to enhance and install non-motorized facilities on Dennison Road. The City of Tehachapi is currently planning to install the following facilities on Dennison Road: crosswalks at Tehachapi High School (signalized), Anita Dr and Tehachapi Blvd; new eastside sidewalk from Georgia St to Valley Blvd; closing an eastside sidewalk gap between Anita Dr and Tehachapi Blvd. Asphalt patching, bike lanes, road painting/striping, sign installation, and minor utility relocations will also occur. There will be one partial (sliver take) private property acquisition between Anita Dr and Tehachapi Blvd (APN 223-190-18). After property acquisition is complete all work and construction activities will be within the City's right-of-way.	The project NEPA CE states no known biological, hazardous or historic properties will be impacted by this project. Therefore, no impact to the wildlife corridor is expected. Sources: Caltrans District 9 Local Assistance records, assessed Dec. 2022
Clean CA Rec Park • Project ID: 0922000048 • Location ○ Tehachapi, CA	1-acre park in Tehachapi that will include landscaping, shade trees, shade structures, benches, waste bins, anti-littering signage, wayfinding signage, enhanced lighting, bike racks, picnic sites, a playground, and a soccer field. The City of Tehachapi's general plan lists neighborhoods that contain a physical feature as a center, such as this proposed park, that allows for different activities to be a priority. The lot is already owned by the City of Tehachapi and all permits and zoned for this use.	The project application states the location is zoned for this park. Therefore, no impact to the wildlife corridor is expected. Sources: Caltrans District 9 Local Assistance records, assessed Dec. 2022
Valley Blvd Road Resurfacing • Project ID: 0922000052 • Location ○ Tehachapi, CA	This City of Tehachapi project is located on Valley Blvd in Kern County. The project extends from the intersection of Curry St to the intersection of Beech St, on Valley Blvd. Pavement in the project area is exhibiting extensive failure and if left untreated could impact the traveling public. Pavement rehabilitation work will be confined to the existing engineered fill section of the roadway and the City of Tehachapi's right-of-way limits. Utility covers, curb/gutter, storm drains grates and curb ramps will be repaired or replaced as needed.	The project NEPA CE states no known biological, hazardous or historic properties will be impacted by this project. Therefore, no impact to the wildlife corridor is expected. Sources: Caltrans District 9 Local Assistance records, assessed Dec. 2022

Project Name and ID Number (refer to Figure 19)[1]	Project Description	Summary of Environmental Evaluation, Documentation, and Impacts
PROJECTS IN THE UNINCORPORATED AREAS OF KERN COUNTY		

High Speed Rail Bakersfield to Barstow Section
• Location
  ○ Adjacent to State Route 58 throughout the Resource Study Area
  ○ Approximately 51.7 miles in length
	The California High-Speed Rail Authority (Authority) certified a Statewide Program Environmental Impact Report/Environmental Impact Statement (EIR/EIS)(Tier 1) in November 2005 as the first phase of a tiered environmental review process for the proposed California High-Speed Rail (HSR) System planned to provide a reliable, high-speed, electric-powered rail system that links the major metropolitan areas of the state and delivers predicable and consistent travel times. A further objective is to provide an interface with commercial airports, mass transit, and the highway network and to relieve capacity constraints of the existing transportation system as increases in intercity travel demand in California occur, in a manner sensitive to and protective of California's unique natural resources. Based on the Program EIR/EIS, the Authority selected preferred corridors and station locations to advance for additional study. The Authority has prepared an EIR/EIS that further examines the Bakersfield to Palmdale Project Section at the project level (Tier 2) within Kern and Los Angeles counties. The project includes construction and operation of a grade-separated, dedicated double-track, electric-powered, passenger, steel-wheel-on-steel-rail, high-speed railroad between Bakersfield and Palmdale, including a station in Palmdale. The Bakersfield to Palmdale Project Section is approximately 80 miles in length and traverses valley, mountain, and high desert terrain as well as urban, rural, and agricultural lands. From the north, this project section begins immediately southwest of the approved Bakersfield Station at the intersection of 34th and L Streets in Bakersfield, and extends south and southeast through the Tehachapi Mountains, then descends into the Antelope Valley, where it reaches the Palmdale Station and continues approximately 1 mile south of the station to Spruce Court in Palmdale. Through Resolution # HSRA 21-06, the Authority has approved the Bakersfield to Palmdale Project Section Preferred Alternative (Alternative 2 with the Refined César E. Chávez National Monument Design Option, the Avenue M maintenance site and maintenance-of-way facility, and Palmdale Station).	This project Final EIR/EIS states construction of the proposed improvements within the Bakersfield to Palmdale Project Section and cumulative projects would result in a less than significant cumulative impact on wildlife movement corridors because construction activities would be short-term and mitigated as required based on environmental review. Additionally, incorporation of project design features and mitigation measures such as wildlife-crossing features would facilitate wildlife movement and minimize or avoid impacts on wildlife movement corridors over the long term. The Bakersfield to Palmdale Project Section's incremental contribution to this impact would not be cumulatively considerable, and no additional mitigation is required. Impacts on wildlife movement corridors from operations would include disturbance from the passage of trains (noise, motion, and startle effects). Regular or frequent disturbances could cause wildlife to discontinue use of crossing structures, which could lead to a decrease in foraging habitat, restriction of gene flow, and habitat fragmentation. The level of impact caused by a particular alternative would be dependent on the number, type, and length of wildlife corridor crossed by the alternative, as well as the frequency of passing trains. As explained in Section 3.7, due to the intermittent nature of the train operations, it is expected that the noise environment would only be affected for short periods of time (i.e., less than four seconds) and predominantly during daytime hours (exposure to maximum noise would have a total duration of approximately 6-12 minutes per day along the alignment, and noise levels during an exposure would decrease rapidly after the train passes). Due to the short duration and intermittent occurrence, operational noise would not be expected to affect animal species communications. Moreover, the proposed improvements include elevated viaducts and underground tunnels to facilitate wildlife movement. Wildlife movement IAMFs and mitigation measures would reduce wildlife movement corridor impacts related to impediments to movement, night lighting, noise, vehicle traffic. Among other requirements, the Authority would create dedicated wildlife-crossing features at frequent intervals and along sensitive areas to facilitate wildlife movement and minimize or avoid impacts on wildlife corridors. To minimize operational noise impacts, sound barriers such as berms and berm/wall combinations would shield nearby natural habitat and/or crossing structures that wildlife could use for movement corridors from loud noise that exceeds 100 dBA at distances greater than 50 feet from the perimeter fence. These measures would work together with design features to minimize, avoid, or mitigate impacts on wildlife movement during project operation. Therefore, while disturbance to wildlife corridors from operations could combine with other regional projects' impacts to disrupt normal movement within wildlife corridors, the proposed improvements within the Bakersfield to Palmdale Project Section's contributions to these cumulative impacts would not be cumulatively considerable.
		
		Sources: https://hsr.ca.gov/programs/environmental-planning/project-section-environmental-documents-tier-2/bakersfield-to-palmdale-draft-environmental-impact-report-environmental-impact-statement/, assessed Feb. 2023.

Project Name and ID Number (refer to Figure 19)[1]	Project Description	Summary of Environmental Evaluation, Documentation, and Impacts
ATP 3 Rosamond • Project ID: 919000043 • Location o Rosamond, CA o Rosamond Blvd between 20th St West and Elberta St; 20th St West between Orange St and Rosamond Blvd	Construction of ADA compliant pedestrian paths, high-visibility crosswalks, solar-powered streetlights, and additional signals.	This project is exempt from further environmental studies because it involves negligible or no expansion of an existing use beyond that existing at the time of the lead agency's determination; therefore, this project will not adversely impact the physical environment. Sources: Caltrans District 9 Local Assistance records, assessed Dec. 2022
Sand Canyon • Project ID: 920000040 • Location o Kern County o 5.8-mile segment of Sand Canyon Road from Tehachapi Blvd to Bonanza Drive	The Kern County Public Works Department proposes to improve a 5.8-mile segment of Sand Canyon Road from Tehachapi Boulevard to Bonanza Drive, in unincorporated Kern County. Improvements would include construction of up to eight-foot paved road shoulder with the remainder of the right-of-way to be used for graded dirt shoulder, shoulder backing, and ancillary facilities necessary for the proper construction and operation of these facilities according to Kern County, Caltrans, and Americans with Disabilities Act (ADA) design standards.	The preliminary environmental study report does not directly assess wildlife corridor impact, but the document does find that there will be no impact to the biologic categories of concern. Because this project is a road improvement and not a new construction it is not expected to impact the wildlife corridor. Sources: Caltrans District 9 Local Assistance records, assessed Dec. 2022
Bear and Cummings Valley • Project ID: 920000060 • Location o Kern County o Intersection of Cummings Road and Bear Valley Road	The Kern County Public Works Department proposes a project to construct a traffic signal at the intersection of Cummings Valley Road and Bear Valley Road in unincorporated Kern County, near the City of Tehachapi. Improvements include intersection lighting and ancillary facilities necessary for the proper construction and operation of these facilities according to Kern County, Caltrans, and Americans with Disabilities Act (ADA) design standards. Right-of-way acquisition may be required as a part of this project. All work and equipment staging will be limited to the Area of potential Effect (APE). No disposal or borrow sites will be used for this project. This project is funded through the Congestion Mitigation and Air Quality Improvement Program (CMAQ) and is needed in order to reduce traffic congestion and improve traffic flow.	This project has been determined not to have a significant impact on the environment as defined by NEPA and has been categorically excluded from further environmental studies, we conclude that there will be no impact to the wildlife corridor. Sources: Caltrans District 9 Local Assistance records, assessed Dec. 2022
Backes • Project ID: 922000046 • Location o Kern County o Backes Lane - Between Highline Road and Schout Road o Schout Road – Between Backes Lane and Woodford Tehachapi Road o Woodford Tehachapi Road – Between Schout Road and SR 202	The Kern County Public Works Department proposes to improve the road shoulders on 3 road segments: Backes Lane (between Highline Road and Schout Road); Schout Road (between Backes Lane and Woodford Tehachapi Road); Woodford Tehachapi Road (between Schout Road and State Route 202). The improvements include construction of up to 8-foot-wide new asphalt concrete shoulders and bike lane striping. All work is proposed to occur within Kern County right-of-way, with the exception of the potential need for an encroachment permit from Caltrans for the installation of construction area signs on State Route 202 during construction of the project.	This project has been determined not to have a significant impact on the environment as defined by NEPA and has been categorically excluded from further environmental studies, we conclude that there will be no impact to the wildlife corridor. Sources: Caltrans District 9 Local Assistance records, assessed Dec. 2022
Clean Cal • Project ID: 922000051 • Location o Mojave, Kern County o Adjacent to Mojave High School and Mojave Elementary School	Mojave East Park will directly benefit an underserved and disadvantaged community of 4238 residents. Beautification and enhancement improvements will transform the entire area with new public facilities and features that offer change and options for recreation. The project site is the primary community social network and family center for families and individuals that have limited resources. The site is adjacent to Mojave High School and Mojave Elementary School and is accessible to residents and visitors through Business Hwy 58. Features include replacement of restroom facilities, creation of a new paved parking lot to serve the baseball field, a bio-infiltration basin to manage site stormwater, a new, larger shaded picnic pavilion, a new soccer field with renovated turf, landscape, and irrigation with emphasis on drought-tolerant, adaptive trees, shrubs and windbreak plantings, exercise stations with equipment, renovated basketball court and connecting accessible pathways.	This project is a beautification and enhancement project that will increase walking paths and other community open spaces. This project is unlikely to negatively impact the wildlife corridor. Sources: Caltrans District 9 Local Assistance records, assessed Dec. 2022

Project Name and ID Number (refer to Figure 19)[1]	Project Description	Summary of Environmental Evaluation, Documentation, and Impacts
Keene Pavement • Project ID: 0919000006 • Location o SR 58 PM 77.2/88.56, Kern County	This project will remove the existing Asphalt/Concrete composite section and replace with Jointed Plain Concrete Pavement (JPCP). The new pavement surface will be higher than the existing surface which will require shoulder backing and/or a small amount of embankment. Retaining walls may be necessary to retain the embankment slopes. All guard rail, median barrier, signs, dike, slotted median drain, median drainage inlets will be replaced in full. Concrete bridge rails will be replaced at Hart Flat, Keene and Tehachapi Overhead. Over side drains and down drains will be replaced at the road level. Bridge rails at the Tehachapi Overhead bridge, which spans the Union Pacific railroad will be replaced.	This project is a pavement upgrade project that will improve the condition of the transit resource. This project will not result in impacts the wildlife corridor beyond temporary impacts during construction. Sources: Initial Study with Mitigated Negative Declaration (June 2022)
Rosamond Rehab • Project ID: 923000003 • Location o Rosamond, Kern County o Rosamond Blvd between Stevenson Street and SR 14	The Kern County Public Works Department proposes to improve Rosamond Boulevard between Stevenson Street and State Route 14 in Rosamond (Kern County). Improvements include roadway rehabilitation, dig-outs, and resurfacing. Shoulder backing will also be placed along the roadway shoulders. All work and ground disturbing activities will occur within the operational right-of-way, and no new right-of-way is proposed.	This project has been determined not to have a significant impact on the environment as defined by NEPA and has been categorically excluded from further environmental studies. The project will not result in impacts to the wildlife corridor. Sources: Caltrans District 9 Local Assistance records, assessed Dec. 2022
Alta Oak Creek Mojave Wind Project, Alata Wind II, LLC; Alta Wind III, LLC; Alta Wind IV, LLC; and Alta Wind V, LLC (Streambed Alteration Agreement No. 1600-201 • State Clearinghouse # 2008121044 • Location o Oak Creek Road and Tehachapi - Willow Springs Road o 35°03'09"N 118°21'22"W	This project is a 360-MW wind energy facility of approximately 120 wind turbines, each up to 3.0 MW. The Project is proposed to be located on approximately 3,200 acres on the north and south sides of State Route (SR) 58 in southeastern Kern County, California. The Project area is approximately 3 miles northwest of the Town of Mojave and approximately 11 miles east of the City of Tehachapi. The Project site is within the Tehachapi WRA of eastern Kern. In addition to wind turbines, the Project would include the following components: 1) An operation and maintenance facility; 2) One collector substation and underground and overhead electrical collection lines to collect energy from the WTGs; 3) From two potential route options, a single 230 kV transmission line to interconnect to the existing Southern California Edison (SCE) Windhub Substation; 4) Meteorological towers; 5) Permanent access/service roads required for construction and operations and maintenance activities; and 6) Temporary construction staging and laydown areas to support the WTG component staging, office trailers, a concrete batch plant, portable rock crushers, and equipment marshaling. The Project site includes both private and federal lands. Federal lands within the Project area are under the jurisdiction of the BLM and private lands are under the jurisdiction of Kern County. Approximately 681 acres would need to be rezoned to be consistent with the Kern County Zoning Ordinance Wind Energy Combining District prior to Kern County's issuance of a Conditional Use Permit, required for Project approval.	The BLM project scoping document (dated October 2011) states, the project area and vicinity may be used for migration or dispersal by wildlife, including bats, migratory birds, desert tortoise and other reptiles, as well as mammals. Further, the project area may, although is not currently known to, contain movement corridors essential for population connectivity. Birds and bats may be subject to mortality during wind turbine operation if they collide with the towers or turbine blades. Construction of the project would potentially impede migration and/or habitat connectivity. This impact is potentially significant and will be evaluated in the EIR/EIS. The EIR (dated) was submitted to the SCH prior to CEQAnet attachments being made available online and was not available at the time of this CIA. Sources: https://eplanning.blm.gov/public_projects/nepa/66300/80732/93947/Appendix_C_-_Scoping_Report.pdf, assessed Dec 2022.
Barren Ridge Renewable Transmission Project • State Clearinghouse # 2008041038 • Location o Kern & Los Angeles counties o HWYs 5, 14, 58, 210	This project involves the construction and operation of a 23-mile stretch of new transmission line within a 500-foot corridor. The project will result in 20 acres of permanent and 137 acres of temporary impacts to desert tortoise and Mojave ground squirrel habitat and is expected to result in incidental take of desert tortoise and Mojave ground squirrel, which are designated as threatened species under the California Endangered Species Act Amendment No. 2 adds an alternative to the compensatory mitigation obligation to allow for the Permittee to purchase 197 covered species credits at a California Department of Fish and Wildlife-approved mitigation or conservation bank and extends the timeline in which to complete the HM lands obligation to December 30, 2018. The ITP, as amended, referenced above as issued by California Department of Fish and Wildlife authorizes incidental take of species listed under the California Endangered Species Act that may occur as a result of Project implementation.	The EIR was submitted prior to CEQAnet allowing attachments – requested copy. Sources: https://ceqanet.opr.ca.gov/2008041038/2, assessed Dec 2022

Project Name and ID Number (refer to Figure 19)[1]	Project Description	Summary of Environmental Evaluation, Documentation, and Impacts

Valentine Solar Project by Valentine Solar, LLC / EDF Renewable Development, Inc.
• State Clearinghouse # 2015051069
• Location
  ○ North of Hamilton Avenue and South of Aqueduct Road
  ○ 34°54'16"N 118°23'8"W
	This project proponent is requesting: (a) Amendment to the Circulation Element of the Kern County General Plan and the Willow~ Spring Specific Plan to remove sections and midsection line road reservations, as follow: The west half of the Section line between Section 32, TJON, R14W and Section 5, T9N, RI4W; The west half of the east-west mid-section line of Section 4, T9N, RI4W; the north half of the north-south mid-section line of Section 32, TION, R14W; the east-west mid-section line of Section 33, TI ON, RI4W and the north half of the north-south section line of Section 33, TION, RI 4W ; (b) changes in zone classification from the existing zone district PLR;S FPS (Platted Lands-Residential Suburban Combining-Floodplain Secondary) to A FPS (Exclusive Agriculture-Floodplain Secondary) on 21.5 acres of the project site within zoning Map 215 and changes in zone classification from. The existing zone district E (20) RS FPS (Estate 20 Acres, Residential Suburban Combining-Floodplain Secondary) to A FPS on. 731.14 acres of the project site within zoning Map 232; (c) Conditional Use Permits to allow for the construction and operation of 100 megawatt solar photovoltaic electrical generating facility (Section 19.12.030.G) in an A District; (d) Conditional Use Permit to allow the operation of batch plant(s) (19.12.030.G) in an A District; (e) a Conditional Use Permit for a construction microwave tower(s) (19.12.030.F) in the A zone district; (f) vacation of existing public access easements· on the project site. The project would be supported by a 230-kV overhead Transmission corridor. The project's permanent facilities would include service roads, a power collection system, communication cables, overhead and underground transmission lines, electrical switchyards, project substations, and operations and maintenance facilities.	The EIR (dated 3/16) was submitted to the SCH prior to CEQAnet being able to upload attachments – requested copy.
		Sources: https://ceqanet.opr.ca.gov/Project/2015051069, assessed Dec 2022.

Camino Solar Project By Aurora Solar, LLC.
• State Clearinghouse # 2018061031
• Location
  ○ Kern County
  ○ 34º 55'49.65233, -118º 26' 39.60078
	The project proponent proposes to develop a photovoltaic (PV) solar facility and associated infrastructure with a maximum generating capacity of 44 megawatts (MW) of renewable electrical energy and an energy storage system of up to 44 MW. The project site is located within the central-eastern portion of the 189 MW Manzana Wind Power Project (Manzana Project), which began operations in 2012, and is located on private land. Given this location, the proposed project would share the existing infrastructure, including transmission line, substation, and site access roads of the Manzana Project. New 34.5 kilovolt (kV) electrical collector line(s) would be constructed on private land between the solar array and energy storage system and the Manzana Project substation, where transformers would increase the voltage from 34.5 kV to 220 kV. The proposed project would interconnect at the Southern California Edison (SCE) Whirlwind substation using the existing Manzana Project 220 kV generation-tie (gen-tie) line. This Environmental Impact Report/Environmental Assessment (EIR/EA) has been prepared by Kern County (County) and the Bureau of Land Management (BLM), which are co-lead agencies, to identify and evaluate potential environmental impacts associated with implementation of the Camino Solar Project (project/proposed project) proposed by Aurora Solar, LLC (project proponent/operator) on approximately 383 acres of an 890-acre facility siting area in south-central Kern County.	The EIR (dated 2/20) found that the project was potentially significant to Impact 4.4-4 (The project would interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors or impede the use of native wildlife nursery sites. It also found that implementation of Mitigation Measure 4.1-4 (to reduce aesthetics impacts by requiring project lighting to be directed downward and shielded to provide the illumination needed to achieve safety and security objectives.) would be required to categorize the project at a less than significant level after this mitigation. The EIR specifically states, “No known or identified wildlife corridors exist within the project site, nor has any part of the project site been identified as a wildlife connectivity area as mapped by the California Essential Habitat Connectivity Project (Spencer et al. 2010).”
		Sources: https://ceqanet.opr.ca.gov/2018061031/2, assessed Dec 2022

Steps 6 and 7 – Cumulative Impacts Assessment and Summary of Results

Step 6 of the Caltrans Guidance includes assessing the potential for cumulative impacts and drawing a conclusion about whether each resource has the potential to experience a cumulative effect. Drawing a conclusion first involves assessing whether each resource is experiencing a cumulative effect, and then determining whether the proposed project would contribute to that cumulative effect.

Step 7 involves documenting the results of the stepwise analysis, which was accomplished via this reporting.

The environmental analysis completed for each project in both Tables 15 and 16 determined that the projects either would not result in a significant impact to wildlife connectivity within the Resource Study Area or, if a significant impact was identified, the impact would be reduced by implementing approved mitigation measures.

Though the health of the Tehachapi Wildlife Connectivity Corridor has declined from historic levels and remains in poor health, the current health trend is considered to be generally stable largely due to legislation over the years aimed at conserving lands and promoting habitat conservation. Requirements in local land use planning documents calling for measures to mitigate impacts to wildlife habitat connectivity combined with oversight from permitting agencies and permitting requirements are expected to result in improving connectivity over time or, at minimum, not worsening the health of the resource.

The context and extent of the proposed State Route 58 Truck Climbing Lane project's contribution to a cumulative impact was considered, taking into account that the impacts will occur along an existing transportation corridor, are confined to a 3.5-mile stretch of highway and would be addressed through construction of a wildlife undercrossing and wildlife directional fencing within the limits of the Keene Pavement project. Therefore, it has been determined that the proposed State Route 58 Truck Climbing Lane project would not result in a significant adverse cumulative impact to the Tehachapi Wildlife Corridor.

Step 8 – Mitigation Needs and Recommendations

Step 8 of the Caltrans Guidance calls for the need to identify mitigation for adverse impacts and/or recommendations for actions by other agencies to address a cumulative impact. Because no adverse cumulative effects were identified to the Tehachapi Wildlife Corridor resource, additional mitigation is not proposed.

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Chapter 3 – California Environmental Quality Act (CEQA) Evaluation

Determining Significance under CEQA

The proposed project is a joint project by the California Department of Transportation and the Federal Highway Administration and is subject to federal and state environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). The Federal Highway Administration's responsibility for environmental review, consultation, and any other actions required by applicable federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 U.S. Code Section 327 (23 USC 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 NEPA and CEQA.

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 (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 documents.

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.

CEQA Environmental Checklist

This checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects will indicate that there are no impacts to a particular resource. A “No Impact” answer in the last column reflects this determination. The words “significant” and “significance” used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

Project features, which can include both design elements of the project, and standardized measures that are applied to all or most Caltrans projects, such as Best Management Practices and measures included in the Standard Plans and Specifications or as Standard Special Provisions, are considered to be an integral part of the project and have been considered prior to any significance determinations documented below; see Chapters 1 and 2 for a detailed discussion of these features. The annotations to this checklist are summaries of information contained in Chapter 2 to provide the reader with the rationale for significance determinations; for a more detailed discussion of the nature and extent of impacts, please see Chapter 2. This checklist incorporates by reference the information contained in Chapters 1 and 2.

AESTHETICS

Except as provided in Public Resources Code Section 21099, would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☑
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☑
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☑	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☑

CEQA Significance Determinations for Aesthetics

a) No Impact

The project would not have a substantial adverse impact on a scenic vista because the project area does not include any scenic vistas.

b) No Impact

The project will not substantially damage scenic resources within a state scenic highway because the project area is not within a portion of State Route 58 that is currently designated or eligible for scenic highway status.

c) Less Than Significant

As discussed in the Visual/Aesthetics section in Chapter 2, the project would construct steep cut and fill slopes to accommodate the new truck climbing lane. Shoulder and cut slopes will be a visible and prominent feature as seen from the roadway. The new engineered cut slopes will be similar in appearance to existing engineered cut slopes. Vegetation removal will include trees and shrubs, breaking up the visible continuity of the hills and oak woodland habitat. In time, it is anticipated that this will change to a moderate resource change, as vegetation fills in and soils fill in and shift, exposing natural outcroppings and accumulating seed and natural recruitment of vegetation.

The visual character of the project will be somewhat compatible with the existing visual character of the corridor. The new engineered cut slopes will appear similar to existing engineered cut slopes. Areas will be enhanced where replacement planting will take place and will eventually fill in and be similar in color, texture and dominance to existing site conditions.

The visual quality of the Build Alternative is moderate. The vividness will diminish slightly overall, with an increase in visible horizontal paved area. Cut slopes will be revegetated with hydroseed and planting where feasible, but will take time to fill in and establish, particularly in areas where slopes are very steep. The unity of the corridor will remain moderate, with an overall balance between the built and natural environment relatively unchanged.

A proposed project element, the debris deflector, will be installed at the upstream end of the culvert at Clear Creek. This feature will receive aesthetic treatment to minimize visibility from the roadway and blend in with the surroundings. The wetland and upland area will be regraded and then revegetated to be similar to existing conditions. Aesthetic treatment for the debris deflector will help minimize glare visible from the roadway and integrate the structure into the natural wetland surroundings. Seeding and planting will also be used, where appropriate, to screen views to the feature from the roadway.

Though this project is not within Scenic or Eligible Scenic Highway Status limits, the surrounding oak woodland habitat is a visual resource that will be impacted by project activities. The recommended avoidance, minimization, and mitigation measures would reduce the project's visual impact as seen from State Route 58 and the surrounding community. The measures, such as highway planting, slope rounding and contouring, and aesthetic treatment to new structures, would serve to lessen overall visual changes from project activities but would not entirely negate their impacts.

d) <u>No Impact</u>

Relocating streetlights at Bealville Road intersection will not have any noticeable change to the area. There are lights in the Bena/Bealville Road intersection currently, and replacement is not expected to incur any noticeable change. The project would not include new lighting elements in an area in which there is currently no lighting.

AGRICULTURE AND FORST RESOURCES

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

CEQA Significance Determinations for Agriculture and Forest Resources

a) <u>No Impact</u>

According to the California Department of Conservation's Farmland Mapping and Monitoring Program, no farmlands designated as prime, unique, or farmland of statewide or local importance under the Farmland Protection Policy Act occur within the proposed project limits. *November 2022 Community Impacts Assessment Memo.*

b) <u>No Impact</u>

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

c, d) No Impact

There are no forest or timberlands within the project limits.

e) No Impact

There are no other changes anticipated to farmland or forest land.

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:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☑
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☐	☑
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☑
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☑	☐

CEQA Significance Determinations for Air Quality

a, b, c) No Impact

The project is within the jurisdiction of the Eastern Kern Air Pollution Control District (EKAPCD) and the California Air Resources Board (CARB), and does not conflict with any air quality plan. The project lies within an area that is in non-attainment for ozone and PM10 and in attainment for all other criteria pollutants. The project is not a capacity-increasing transportation project, therefore it will have no impact on traffic volumes and would not result in elevated levels of any criteria pollutant or expose sensitive receptors to increased pollutant concentrations or other emissions.

d) Less Than Significant Impact

Temporary construction activities could generate fugitive dust from the operation of construction equipment. Caltrans standard specifications for dust control and emissions requirements will be implemented to minimize these impacts to a less than significant levels. The project will comply with construction standards adopted by the Eastern Kern Air Pollution Control District as well as Caltrans standardized procedures for minimizing air pollutants during construction. During the project's Design phase, Caltrans District 9 Air Resources staff will contact the Eastern Kern Air Pollution Control District to review the project scope, plans, and specifications so that any air quality concerns are addressed in the contract and included in the project specifications. The Eastern Kern Air Pollution Control District may request a formalized dust control plan to be prepared by the contractor. Impacts are expected to be less than significant.

BIOLOGICAL RESOURCES

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, or NOAA Fisheries?	☐	☐	☐	☑
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☑	☐	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☑	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☑	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☑
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☑

CEQA Significance Determinations for Biological Resources

a) <u>No Impact</u>

As discussed in the Plant Species, Animal Species, and Threatened and Endangered Species sections of Chapter 2, no special-status plant or animal species were found in the project's Biological Study Area during biological surveys in 2021 and 2022.

Of the 14 special-status plant species identified from the U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and California Native Plant Society species lists, two species have potential habitat that was found present in the Biological Study Area during surveys: California jewelflower (*Caulanthus californicus)* and Kern mallow (*Eremalche parryi ssp. Kernensis*).

California jewelflower—The California jewelflower grows in sandy clay loam soil, which was not found in the Biological Study Area. Also, this species is threatened by grazing and possibly non-native species, both of which exist within the Biological Study Area. Therefore, this species is not expected to occur at the project site.

Kern mallow—The Kern mallow occurs on eroded hillsides, which are present in limited quantities within the Biological Study Area, but not within the Project Impact Area. Limited potential habitat for this species was found in the Biological Study Area, and there is a low probability of impacts to individuals within the project area.

Of the 20 special-status animal species identified from the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife database searches, five have suitable habitat and the potential to be present within the project area: golden eagle, Swainson's hawk, southwestern willow flycatcher, foothill yellow-legged frog, and Tehachapi slender salamander.

Golden eagle—If found before or during construction, potential impacts to this species may include direct mortality to individuals through vegetation removal resulting in direct mortality to eggs, young, or nesting pairs. Potential indirect impacts may include degradation of the breeding habitat or nest abandonment due to stress during construction activities. A No Effect determination has been made for this species because no impacts are anticipated to occur with the implementation of avoidance and minimization measures.

Swainson's hawk—Several attempts to confirm the potential active nest were conducted, and no individuals or nests were found after the initial sighting. With the implementation of avoidance measures, there are no anticipated impacts to Swainson's hawk individuals or nests. A No Effect determination has been made for this species because no impacts are anticipated to occur with the implementation of avoidance and minimization measures.

Southwest willow flycatcher—Though the riparian habitat along Clear Creek provides moderate conditions that could support southwestern willow flycatchers, the density and stratification of vegetation was limited. The water flow in the creek is generated by the tributary creeks and from the water runoff during weather events, but otherwise the creek is dry or with limited water flow because the water either permeates or evaporates. It is reasonable to assume that southwestern willow flycatchers may occasionally occur as migrants and use the riparian habitat along Clear Creek, but it is unlikely that they would breed and nest along the creek vegetation. A No Effect determination has been made for this species because no impacts are anticipated to occur with the implementation of avoidance and minimization measures.

Foothill yellow-legged frog—Construction activities are not anticipated to have direct impacts to the foothill yellow-legged frog, its habitat, or breeding sites because none were identified within the project area. Direct and indirect impacts will be avoided with the implementation of avoidance and minimization measures. A No Effect determination has been made for this species because no impacts are anticipated to occur with the implementation of avoidance and minimization measures.

Tehachapi slender salamander—Construction activities are not anticipated to have direct impacts to the Tehachapi slender salamander, its habitat, or breeding sites because none were identified within the Project Impact Area or within a 250-foot buffer of the Project Impact Area. Direct and indirect impacts will be avoided with the implementation of avoidance and minimization measures. A No Effect determination has been made for this species because no impacts are anticipated to occur with the implementation of avoidance and minimization measures.

No federally designated critical habitat for federally listed plant or animal species occurs within the Biological Study Area, so a No Effect determination has been made for designated critical habitat.

No Essential Fish Habitat for federally managed species was identified within the project limits, so a No Effect determination has been made for Essential Fish Habitat.

Measures that will be implemented to avoid or minimize impacts to special-status species are listed in the Threatened and Endangered Species section of Chapter 2 as well as Appendix B.

b, c) Less Than Significant Impact with Mitigation Incorporated

Jurisdictional water resources will be impacted by the construction of culvert extensions and cut/fill slopes. This project will temporarily impact 0.694 acre of riparian habitat, 0.179 acre of streambed habitat, and 0.092 acre of wetland habitat. The project will also permanently impact 0.810 acre of riparian habitat, 0.239 acre of streambed habitat, and 0.438 acre of wetland habitat. This work will require a Regional Water Quality Control Board 401 Certification and California Department of Fish and Wildlife 1602 Streambed Alteration permit prior to construction.

Proposed mitigation for permanent impacts to riparian vegetation and aquatic resources will be reviewed by resource agencies as part of the permitting process during the project's design phase. The proposed mitigation strategy will be a purchase of in-lieu fee credits or mitigation bank credits from an approved mitigation bank, at a mitigation ratio negotiated with the resource agencies. Wetland mitigation is required for the Central Valley Regional Water Quality Control Board.

The mitigation strategy will be negotiated during the permitting process. Onsite riparian vegetation plantings are possible, but site conditions make access difficult for long-term monitoring. This will be negotiated with resource agencies. Onsite erosion control seeding will occur in temporary and permanently impacted areas with native seed mix. Onsite planting/restoration will occur for the six oak trees within jurisdictional riparian areas at a mitigation ratio negotiated with the resource agencies. All required avoidance and minimization measures included in resource permits from the Regional Water Quality Control Board, California Department of Fish and Wildlife and U.S. Army Corps of Engineers (if 404 permit is determined to be required in the project's design phase) will be implemented.

The following measure will be implemented to mitigate for impacts to aquatic resources and riparian vegetation that could occur during construction:

BIO-18 (CEQA Mitigation Measure): Permanent impacts to wetlands, riparian vegetation, and aquatic resources will be reviewed by resource agencies as part of the permitting process during the project's design phase. The proposed strategy to mitigate for these impacts would be to purchase in-lieu fee credits or mitigation bank credits from an approved mitigation bank, at a ratio negotiated with the resource agencies. The specific bank and amount of credits required will need to be determined once impact areas are quantified.

d) Less Than Significant Impact with Mitigation Incorporated

Temporary impacts may occur from disruption of wildlife movement across State Route 58 during construction of the project. Construction activity can deter wildlife from using an area due to the increase in noise, lights, and unfamiliar objects and activity.

Though the project Biological Study Area is not within a wildlife vehicle collision hot spot, permanent impacts to habitat connectivity are anticipated from the project. This segment of State Route 58 has been considered by locals as a barrier to deer movement since the highway became four lanes and the center median was added. Future GPS-collaring data will further clarify this theory. Previous studies have shown that increasing the width of the road via the addition of a truck climbing lane will likely increase habitat fragmentation and wildlife vehicle collisions. Increasing the road width will result in habitat loss and increased noise, lights, and total number of vehicles using the road. The lack of existing large wildlife crossing structures in the project area will continue to prohibit wildlife habitat connectivity.

The most effective measure to offset the impacts to connectivity would be from the construction of a wildlife-specific crossing structure. An additional Caltrans project, the Keene Pavement project, overlaps with the limits of the State Route 58 Truck Climbing Lane project. The Keene Pavement project will be constructing one wildlife underpass structure and directional fencing within the project's limits. Two locations are still being evaluated with design engineering staff and review of upcoming data from stakeholders (i.e., GPS collar data) to determine the final location. Construction of this structure will benefit wildlife impacted from the construction of the State Route 58 Truck Climbing Lane and further aid in habitat connectivity within the central portion of the Tehachapi Wildlife Corridor. Also, enhancements for impacts to wildlife connectivity included with the State Route 58 Truck Climbing Lane project involve modification of the debris structure at the Clear Creek (post mile 78.7) culvert inlet. Installation of wildlife-specific, directional fencing at the inlet and outlet that will be completed with the Keene Pavement project will further improve this structure for wildlife use and would allow for improved habitat connectivity. Another Caltrans project, the Cache Creek Pavement project , is in early stages of development and is also looking at ways to improve habitat connectivity within the eastern portion of the Tehachapi Wildlife Corridor.

To avoid temporary or permanent impacts to habitat connectivity, the following mitigation measure will be implemented:

BIO-8: (CEQA Mitigation Measure): To mitigate for impacts to wildlife connectivity, a wildlife underpass structure and directional fencing will be constructed within the Keene Pavement project limits.

e) <u>No Impact</u>

This project will not conflict with any local policies or ordinances protecting biological resources.

f) <u>No Impact</u>

This project will not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

CULTURAL RESOURCES

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

CEQA Significance Determinations for Cultural Resources

a, b) No Impact

As detailed in the Cultural Resources section in Chapter 2, no culturally, archeologically, or historically significant resources were identified within the Area of Potential Effect as a result of archival research, Native American consultation (including AB 52 consultation), or pedestrian surveys. In the unlikely event that previously unknown cultural materials are discovered during 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.

c) No Impact

Due to the high level of ground disturbance around the project site, there is a low probability that human remains will be encountered during construction. Therefore, the project is not expected to disturb human remains.

Caltrans includes standard provisions dealing with the discovery of human remains. In the unlikely event that human remains are discovered during construction, California Health and Safety Code Section 7050.5 states that further disturbances and activities must 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 9 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 5097.98 are to be followed as applicable.

ENERGY

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

CEQA Significance Determinations for Energy

a) <u>No Impact</u>

As detailed in the Energy section of Chapter 2, the project will not increase capacity and therefore will not induce substantial energy use above existing conditions. With almost every construction project, there would be a short-term/temporary increase in energy consumption during the construction period. Caltrans includes Standard Specifications and Best Management Practices with all projects that minimize energy use during construction. Additional measures to minimize energy consumption impacts during construction are discussed in the Chapter 3 Climate Change section. The project will not involve wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation.

b) <u>No Impact</u>

The project will not conflict with any state or local plan for renewable energy or energy efficiency.

GEOLOGY AND SOILS

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

CEQA Significance Determinations for Geology and Soils

a)i) <u>Less Than Significant Impact</u>

The area surrounding the project has been designated as an earthquake fault zone on the State Alquist-Priolo Earthquake Fault Zoning Map. However, the project would not directly or indirectly cause the fault to rupture and will conform with all applicable State geotechnical standards.

a) ii, iii, iv) <u>No Impact</u>

Ground shaking during construction at the proposed slopes will be minimal, temporary, and localized and is not anticipated to result in any adverse impacts from liquefaction or landslides.

Though the project area has the potential to experience strong seismic ground shaking in the event of a large earthquake, the project will be designed according to Caltrans' seismic standards as established in the Highway Design Manual, minimizing the risk of such an earthquake.

b) Less Than Significant Impact

Ground-disturbing earthwork associated with shoulder widening and cut slopes may temporarily increase soil erosion rates and the loss of topsoil. However, the potential for erosion would be minimal due to the types of soil present in the project area. The Best Management Practices described in the Water Quality and Stormwater Runoff section of Chapter 2 would further minimize erosion and the loss of topsoil. The project would limit the amount of earthwork necessary to complete the project.

c, d, e) No Impact

Geologic conditions and soils in the project area are not unstable. According to the California Geological Survey mapping for Liquefaction Zones defined under the Seismic Hazards Mapping Act of 1990, soils have not been determined to be expansive. No septic tanks or wastewater systems are present in the project area.

f) Less Than Significant Impact

As discussed in the Paleontology section in Chapter 2, the project has been determined to have the potential to impact paleontological resources during construction, so a Paleontological Mitigation Plan (PMP) will be prepared. The plan will outline specific avoidance and minimization measures recommended for paleontological resource protection such as paleontological resource training for construction personnel. The plan will also outline the curation agreement, monitoring schedule, and procedures to follow in the event significant fossil resources are recovered during construction activities.

GREENHOUSE GAS EMISSIONS

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

CEQA Significance Determinations for Greenhouse Gas Emissions

a) Less Than Significant Impact

The project will not add highway capacity or increase vehicle miles traveled. The project will not induce personal vehicle travel along this section of State Route 58. This type of project generally causes minimal or no increase in operational greenhouse gas emissions. While some greenhouse gas emissions during the construction period would be unavoidable, no increase in operational greenhouse gas emissions is expected. Construction-related greenhouse gas emissions will be produced at different levels throughout the construction phase. Caltrans includes Standard Specifications and Best Management Practices with all projects that minimize greenhouse gas emissions use during construction. Additional measures to minimize energy consumption impacts during construction are discussed later in the Chapter 3 Climate Change section.

b) No Impact

The project will not conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gas.

HAZARDS AND HAZARDOUS MATERIALS

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

CEQA Significance Determinations for Hazards and Hazardous Materials

a, b) <u>No Impact</u>

The project is in a rural, undeveloped portion of eastern Kern County, and the risk of encountering or disturbing hazardous wastes or buried infrastructure is low. The project will not use hazardous materials for construction. All standard specifications for spill containment and stormwater pollution control will be implemented.

c) <u>No Impact</u>

No schools are within one-quarter mile of the project area.

d) <u>No Impact</u>

No current or historic sources of contamination within the project limits were identified in databases from the California Department of Water Resources (GeoTracker) or the California Department of Toxic Substances Control (EnviroStor).

e) No Impact

No airport is within two miles of the project area.

f) No Impact

Traffic control will leave the two existing eastbound lanes open during construction, allowing emergency vehicle access through the project area. Access to and from State Route 58 at the Bena Road intersection will be removed, but emergency services will be able to access Bena Road and State Route 58 about 1.4 miles west from the State Route 58/223 junction.

g) No Impact

Vegetation clearing around the work area, slopes, and shoulders will serve as additional defensible space. The extra pavement width for the truck climbing lane and shoulders will provide for a wider fire break, reducing the potential for sparks and embers jumping the facility. The addition of the truck climbing lane will reduce bottleneck congestion, which could potentially help travelers move through the Tehachapi Pass more efficiently and provide extra evacuation capacity for the area in case of wildfire.

HYDROLOGY AND WATER QUALITY

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

CEQA Significance Determinations for Hydrology and Water Quality

a) <u>Less Than Significant Impact</u>

The Build Alternative is expected to impact Clear Creek and other unnamed jurisdictional drainage areas during construction. This work will require a Water Quality Control Board 401 or Waste Discharge Requirements permit for impacts to Waters of the State and U.S. during construction. These impacts will be avoided and/or minimized through implementation of Best Management Practices before, during, and after project construction. Project Best Management Practices will likely include fiber roll, silt fencing, drain inlet protection, stockpile management practices, and weather monitoring. All construction work in creeks and drainages would be conducted when the channel is dry, when feasible, to avoid impacts to water quality.

b) No Impact

The project will not use local groundwater supplies for construction and will not interfere with groundwater recharge. The project will not impede sustainable groundwater management of the local basin.

c)i) Less Than Significant Impact

The project will involve earthwork and excavations to construct the cut and fill slopes as part of the roadway widening process and may alter existing localized drainage patterns. To reduce the potential for drainage-related erosion or siltation onsite or offsite, the project will incorporate appropriate erosion control measures during construction, along with implementing permanent and temporary Best Management Practices.

c)ii, iii) Less Than Significant Impact

The project will create 12.02 acres of new impervious surface area that may increase the amount of surface runoff. The anticipated increased runoff will be controlled by installation of Permanent Post-Construction Stormwater Treatment Best Management Practices. The Best Management Practices proposed for the project will prevent flooding onsite or offsite that could arise from any additional stormwater runoff. Once project construction is complete, the additional amount of runoff water associated with the new impervious surface is not expected to exceed the capacity of existing or newly constructed stormwater drainage systems or provide substantial additional resources of polluted runoff.

c)iv) No Impact

The project is not expected to impede or redirect flood flows. Existing flow patterns in Clear Creek and associated drainages will be perpetuated. The creek's alignment would not be changed after the project is complete.

d) No Impact

The project area is not within a flood hazard, tsunami, or seiche zone.

e) No Impact

The project region is regulated by the Central Valley Regional Water Quality Control Board. The project will comply with applicable regulations and policies that pertain to the protection of water resources in the region. The project will not conflict with any known water quality control or groundwater plan.

LAND USE AND PLANNING

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☑
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☑

CEQA Significance Determinations for Land Use and Planning

a, b) <u>No Impact</u>

The addition of the truck climbing lane to State Route 58 will relieve roadway congestion and would not divide any communities. The area adjacent to and surrounding the project site is mostly rural agricultural land. It will not conflict with any known land use plan or policies.

MINERAL RESOURCES

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

CEQA Significance Determinations for Mineral Resources

a, b) <u>No Impact</u>

According to the California Department of Conservation Mineral Land Classification mapping, there are no mineral resources that would be of value to the region and the residents of the state within the project area. Based on the Kern County General Plan, there are no existing or planned resource recovery sites within the project area.

NOISE

Would the project result in:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☑	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☑
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☑

CEQA Significance Determinations for Noise

The CEQA noise analysis is completely independent of the NEPA/23 Code of Federal Regulations Part 772 (23 CFR 772) analysis discussed in Chapter 2, which is centered on noise abatement criteria. Under CEQA, the assessment entails looking at the setting of the noise impact and then how large or perceptible any noise increase would be in the given area. Key considerations include the uniqueness of the setting, the sensitivity of the noise receptors, the magnitude of the noise increase, the number of residences affected, and the absolute noise level.

a) Less Than Significant Impact

The existing noise level at residential receiver site R1 is 58 dBA; the predicted design year noise level under the No-Build Alternative is 58 dBA; the predicted design year noise level under the Build Alternative is 61 dBA. The existing noise level at residential receiver site R2 is 58 dBA; the predicted design year noise level under the No-Build Alternative is 59 dBA; the predicted design year noise level under the Build Alternative is 62 dBA. See Table 8 in the Chapter 2 Noise section. Both R1 and R2 have a 3 dBA increase between predicted noise levels under the Build Alternative and No-Build Alternative. This 3 dBA increase would be barely perceptible to the human ear. Therefore, under CEQA, a less than significant noise impact would occur as a result of the project, and no mitigation is required.

b) No Impact

The project will not result in generation of excessive groundborne vibration or noise levels during or after project construction.

c) No Impact

The project is not within the limits of an airport land use plan or within the vicinity of a private airstrip or within two miles of a public airport.

POPULATION AND HOUSING

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial 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)?	☐	☐	☐	☑
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

CEQA Significance Determinations for Population and Housing

a, b) <u>No Impact</u>

The addition of the truck climbing lane to State Route 58 will relieve roadway congestion and would not divide any communities. The area adjacent to and surrounding the project site is mostly rural agricultural land. It will not conflict with any known land use plan or policies.

PUBLIC SERVICES

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: Fire protection?	☐	☐	☐	☑
Police protection?	☐	☐	☐	☑
Schools?	☐	☐	☐	☑
Parks?	☐	☐	☐	☑
Other public facilities?	☐	☐	☐	☑

CEQA Significance Determinations for Public Services

a) <u>No Impact</u>

The project will not physically alter any structure or route that will permanently impact public services. The project will not require the alteration or creation of facilities related to fire protection, police protection, schools, parks, or any other public facilities. Access to and from State Route 58 at the Bena Road intersection (post mile 77.06) will be removed, but residents and emergency services will be able to access Bena Road and State Route 58 about 1.4 miles to the west, from the State Route 58/223 junction. All emergency public services, such as medical services, law enforcement agencies, fire departments, and local ambulance services will be notified before construction. The existing travel lanes should remain open during construction activities. No traffic closures are anticipated, and emergency services will be able to pass through the construction area unimpeded.

RECREATION

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

CEQA Significance Determinations for Recreation

a, b) <u>No Impact</u>

The project will not lead to increased use of any recreational facilities because none exist within the project limits. The project does not include the construction or expansion of any recreational facilities.

TRANSPORTATION

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☑
b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	☐	☐	☐	☑
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☑
d) Result in inadequate emergency access?	☐	☐	☐	☑

CEQA Significance Determinations for Transportation

a) No Impact

As discussed in the Chapter 2, “Consistency with State, Regional, and Local Plans and Program” section, the project will not conflict with any program, plan, ordinance, or policy related to traffic circulation.

b) No Impact

The project will not increase the existing highway capacity or vehicle miles traveled. It will also not provide new routes or route alignments that could facilitate population growth. Therefore, the project will not conflict with CEQA Guidelines Section 15064.3, subdivision (b).

c) No Impact

The project will not include any highway realignment and will comply with the current Caltrans Highway Design Manual standards. The design and operation of the truck climbing lane and associated components will not include hazardous design features or result in incompatible uses.

d) No Impact

The project will not result in inadequate emergency access. All emergency public services, such as medical services, law enforcement agencies, fire departments, and local ambulance services, will be notified before construction. The existing travel lanes should remain open during construction activities, and emergency services will be able to pass through the construction area unimpeded. Access to and from State Route 58 at the Bena Road intersection (post mile 77.06) will be removed, but emergency services will be able to access Bena Road and State Route 58 about 1.4 miles to the west, from the State Route 58/223 junction.

TRIBAL CULTURAL RESOURCES

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or	☐	☐	☐	☑
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☑

CEQA Significance Determinations for Tribal Cultural Resources

a) <u>No Impact</u>

As detailed in the Cultural Resources section in Chapter 2, no tribal cultural resources were identified or are expected to be found within the Area of Potential Effects.

b) <u>No Impact</u>

Consultation with the Native American Heritage Commission and various Native American tribes was done for the project. Consultation letters were sent on February 7, 2022 to tribes that have requested notification under Assembly Bill 52 (AB 52). To date, one response has been received, indicating that the proposed project is situated outside of the Fernandeño Tataviam Band of Mission Indians ancestral tribal boundaries. Consultation with the Native American Heritage Commission was completed on July 6, 2022. A Sacred Lands File search was requested, and results were negative. No tribal cultural resources have been identified in the project area, and none are expected to be found.

UTILITIES AND SERVICE SYSTEMS

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☑
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☑
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☑
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☑
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☑

CEQA Significance Determinations for Utilities and Service Systems

a, b, c, d, e) <u>No Impact</u>

The project scope does not include any utility construction or relocations. There are no underground utilities in the project impact area. The project will not alter the availability of water supplies, increase wastewater treatment needs, or generate excessive solid waste. The project will also comply with all statutes and regulations related to solid waste.

As discussed in the Chapter 2, "Consistency with State, Regional, and Local Plans and Program" section, the project will not conflict with any program, plan, ordinance, or policy related to traffic circulation.

WILDFIRE

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

CEQA Significance Determinations for Wildfire

a, b, c, d, e) <u>No Impact</u>

The project area is within the State Responsibility Areas, and the Fire Hazard Severity Zone rating is designated as Moderate to High. The project will leave the two existing eastbound lanes open during construction, allowing emergency vehicle access through the project area. The project adheres to all state and local emergency plans. It will not exacerbate wildfire risks, require installing new fire-producing infrastructure, or cause drainage issues related to fire. Vegetation clearing around the work area, slopes, and shoulders will serve as additional defensible space. The extra pavement width for the truck climbing lane and shoulders will provide for a wider fire break, reducing the potential for sparks and embers jumping the facility. The addition of the truck climbing lane will reduce bottleneck congestion, which could potentially help travelers move through the Tehachapi Pass more efficiently and provide extra evacuation capacity for the area in case of wildfire.

MANDATORY FINDINGS OF SIGNIFICANCE

Question:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☑
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☐	☑
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☑

CEQA Significance Determinations for Mandatory Findings of Significance

a, b, c) <u>No Impact</u>

As discussed in previous resource sections in Chapter 3, the project does not have the potential to substantially degrade the quality of the environment, does not have impacts that are cumulatively considerable, and does not have environmental effect that will cause substantial adverse direct or indirect effects on human beings.

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

The project area is in the State Responsibility Areas, and the Fire Hazard Severity Zone rating is designated as Moderate to High (see Figure 20). No further analysis is necessary to meet requirements of Senate Bill 1241.

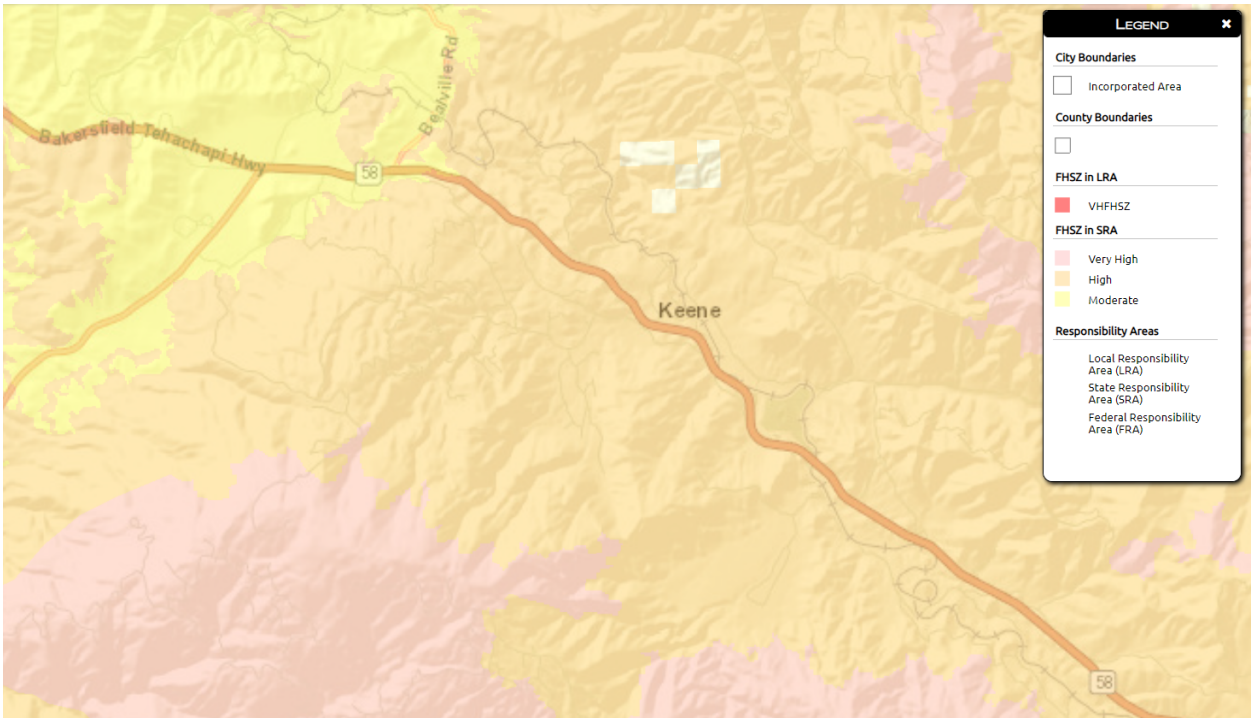

Figure 20 - Fire Hazard Severity Zone map of project area.

Climate Change

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 gases consisting primarily of carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF6), and various hydrofluorocarbons (HFCs). CO2 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 CO2 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 CO2.

The impacts of climate change are already being seen in the form of sea level rise, drought, more intense heat, extended and severe fire seasons, and historic flooding from changing storm patterns. Both mitigation and adaptation strategies are necessary to address these impacts. The most important mitigation strategy is to reduce greenhouse gas emissions. In the context of climate change (as distinct from CEQA and NEPA), "mitigation" involves actions to reduce greenhouse gas emissions or to enhance the "sinks" that store them (such as forests and soils) to lessen adverse impacts. "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.

Regulatory Setting

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

Federal

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

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

The Federal Highway Administration recognizes the threats that extreme weather, sea level change, and other changes in environmental conditions pose to valuable transportation infrastructure and those who depend on it. The Federal Highway Administration therefore supports a sustainability approach that assesses vulnerability to climate risks and incorporates resilience into planning, asset management, project development and design, and operations and maintenance practices (FHWA 2022). This approach encourages planning for sustainable

highways by addressing climate risks while balancing environmental, economic, and social values—“the triple bottom line of sustainability” (FHWA no deat). 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 U.S. Code Section 6201) as amended by the Energy Independence and Security Act (EISA) of 2007; and Corporate Average Fuel Economy (CAFE) 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 U.S. 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 (U.S. DOT 2014).

The U.S. 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 greenhouse gas emissions 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 (U.S. EPA 2022a; National Highway Traffic and Safety Administration 2022).

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 (AB) 32 in 2006 and Senate Bill (SB) 32 in 2016.

Assembly Bill (AB) 32, Chapter 488, 2006, Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 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 Air Resources Board to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective greenhouse gas reductions.

Executive Order S-01-07 (January 18, 2007): This order sets forth the low carbon fuel standard (LCFS) for California. Under this order, the carbon intensity of California’s transportation fuels is

to be reduced by at least 10 percent by the year 2020. The Air Resources Board re-adopted the low carbon fuel standard regulation in September 2015, and the changes went into effect on January 1, 2016. The program establishes a strong framework to promote the low-carbon fuel adoption necessary to achieve the governor's 2030 and 2050 greenhouse gas reduction goals.

Senate Bill (SB) 375, Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires the Air Resources Board to set regional emissions reduction targets for passenger vehicles. The Metropolitan Planning Organization (MPO) 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.

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

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

Executive Order B-30-15 (April 2015): 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 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 ($MMTCO_2e$). [Greenhouse gases differ in how much heat each traps in the atmosphere, called global warming potential, or GWP. CO_2 is the most important greenhouse gas, so amounts of other gases are expressed relative to CO_2, using a metric called "carbon dioxide equivalent," or CO_2e. The global warming potential of CO_2 is assigned a value of 1, and the global warming potential of other gases is assessed as multiples of CO_2.] Finally, it requires the Natural Resources Agency to update the state's climate adaptation strategy, *Safeguarding California*, every 3 years, and to ensure that its provisions are fully implemented.

SB 32, Chapter 249, 2016: 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.

SB 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."

SB 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.

SB 150**,** Chapter 150, 2017, Regional Transportation Plans: This bill requires the 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.

AB 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 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, use, and storage technologies in California, as specified.

Environmental Setting

The 58 Truck Climbing Lane project lies in Kern County on State Route 58 near Keene from 0.76 mile west of Bealeville Road (post mile 76.3) to 0.52 mile west of Hart Flat Road (post mile 79.8). The project proposes to construct a 12-foot-wide truck climbing lane on eastbound State Route 58 in Kern County.

The project is in a rural area, with an economy that is based mostly on agriculture. State Route 58 is the main transportation route to and through the area for both passenger and commercial vehicles. The nearest alternate route is State Route 178, about 50 miles to the north. The Union Pacific Railroad Mojave Subdivision tracks running parallel to the State Route 58 right-of-way carry mainly freight trains each day. The Kern Council of Regional Governments guides transportation development. The Kern County General Plan Circulation, Safety, and Traffic elements address greenhouse gases in the project area.

Greenhouse Gas Inventories

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

National Greenhouse Gas Inventory

The annual greenhouse gas inventory submitted by the U.S. Environmental Protection Agency to the United Nations provides a comprehensive accounting of all human-produced sources of greenhouse gases in the United States. Total greenhouse gas emissions from all sectors in 2020 were 5,222 million metric tons (MMT), factoring in deductions for carbon sequestration in the land sector. Of these, 79 percent were CO2, 11 percent were CH4, and 7 percent were N2O; the balance consisted of fluorinated gases. Total greenhouse gases in 2020 decreased by 21 percent from 2005 levels and 11 percent from 2019. The change from 2019 resulted mostly from less demand in the transportation sector during the COVID-19 pandemic. The

transportation sector was responsible for 27 percent of total U.S. greenhouse gas emissions in 2020, more than any other sector, and for 36 percent of all CO_2 emissions from fossil fuel combustion. Transportation CO_2 emissions for 2020 decreased 13 percent from 2019 to 2020, but were 7 percent higher than transportation CO_2 emissions in 1990 (see Figure 21) (U.S. EPA 2022b).

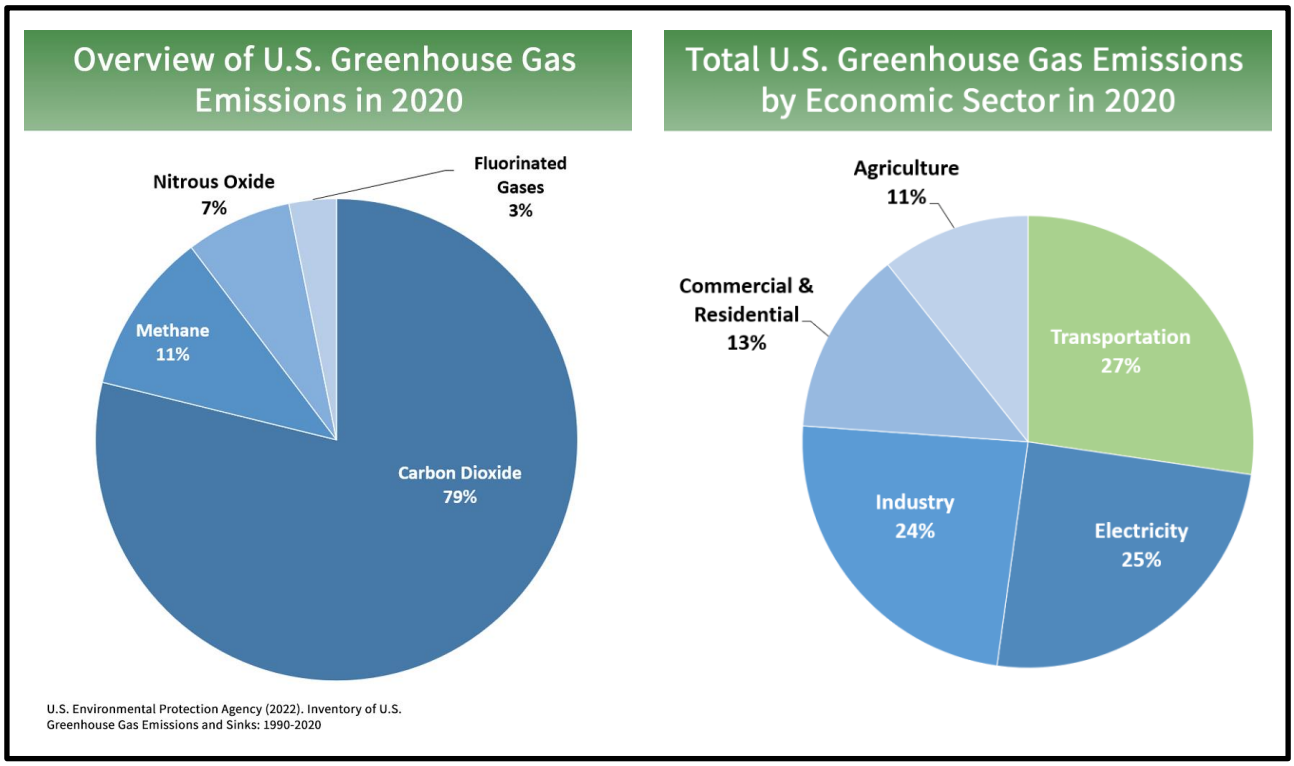

Figure 21 - U.S. 2020 Greenhouse Gas Emissions (Source: U.S.EPA 2022b).

State Greenhouse Gas Inventory

The Air Resources Board collects greenhouse gas emissions data for transportation, electricity, commercial/residential, industrial, agricultural, and waste management sectors each year. It then summarizes and highlights major annual changes and trends to demonstrate the state's progress in meeting its greenhouse gas reduction goals. The 2022 edition of the greenhouse gas emissions inventory reported emissions trends from 2000 to 2020. Total California greenhouse gas emissions in 2020 were 369.2 $MMTCO_2e$, a reduction of 35.3 $MMTCO_2e$ from 2019 and 61.8 $MMTCO_2e$ below the 2020 statewide limit of 431 $MMTCO_2e$. Much of the decrease from 2019 to 2020, however, is likely due to the effects of the COVID-19 pandemic on the transportation sector, during which vehicle miles traveled declined under stay-at-home orders and reductions in goods movement. Nevertheless, transportation remained the largest source of greenhouse gas emissions, accounting for 37 percent of statewide emissions (see Figure 22). [Including upstream emissions from oil extraction, petroleum refining, and oil pipelines in California, transportation was responsible for about 47 percent of statewide emissions in 2020; however, those emissions are accounted for in the industrial sector.] California's gross domestic product (GDP) and greenhouse gas intensity (greenhouse gas emissions per unit of gross domestic product) both declined from 2019 to 2020 (see Figure 23). It is expected that total greenhouse gas emissions will increase as the economy recovers over the next few years (ARB 2022a).

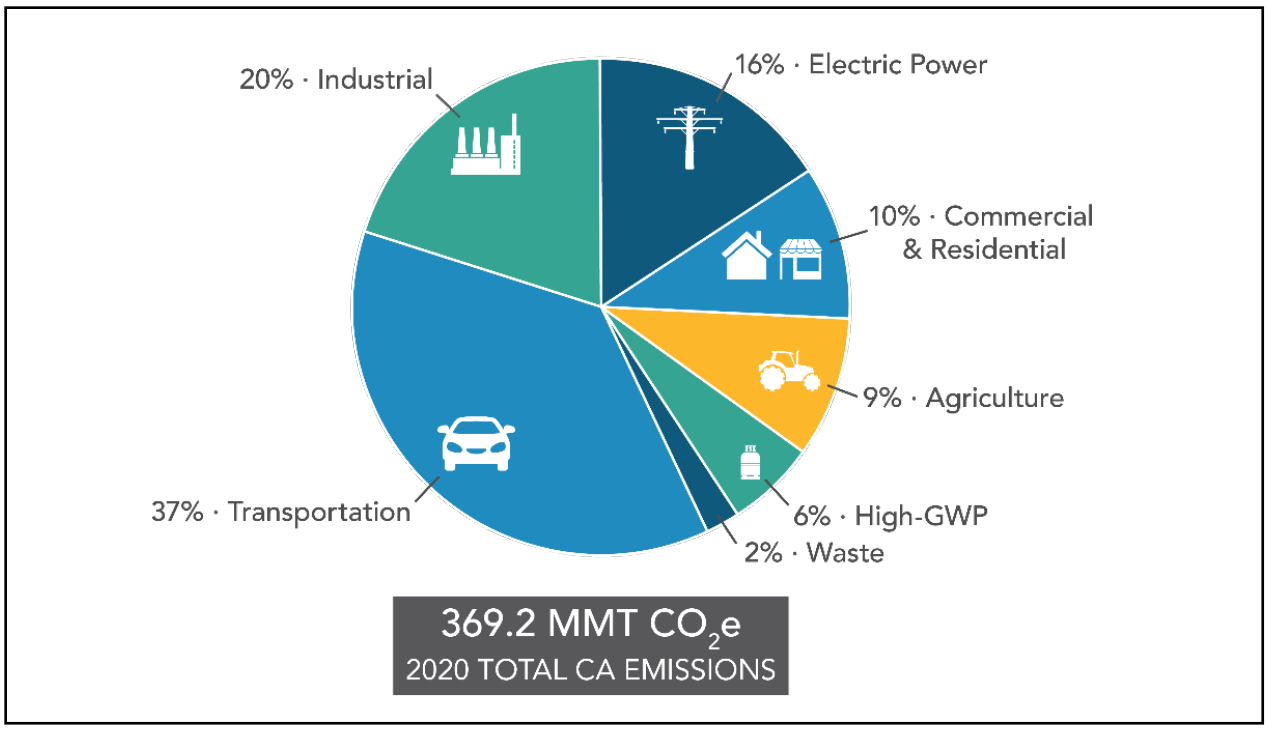

Figure 22 - California 2020 Greenhouse Gas Emissions by Scoping Plan Category (Source: ARB 2022a).

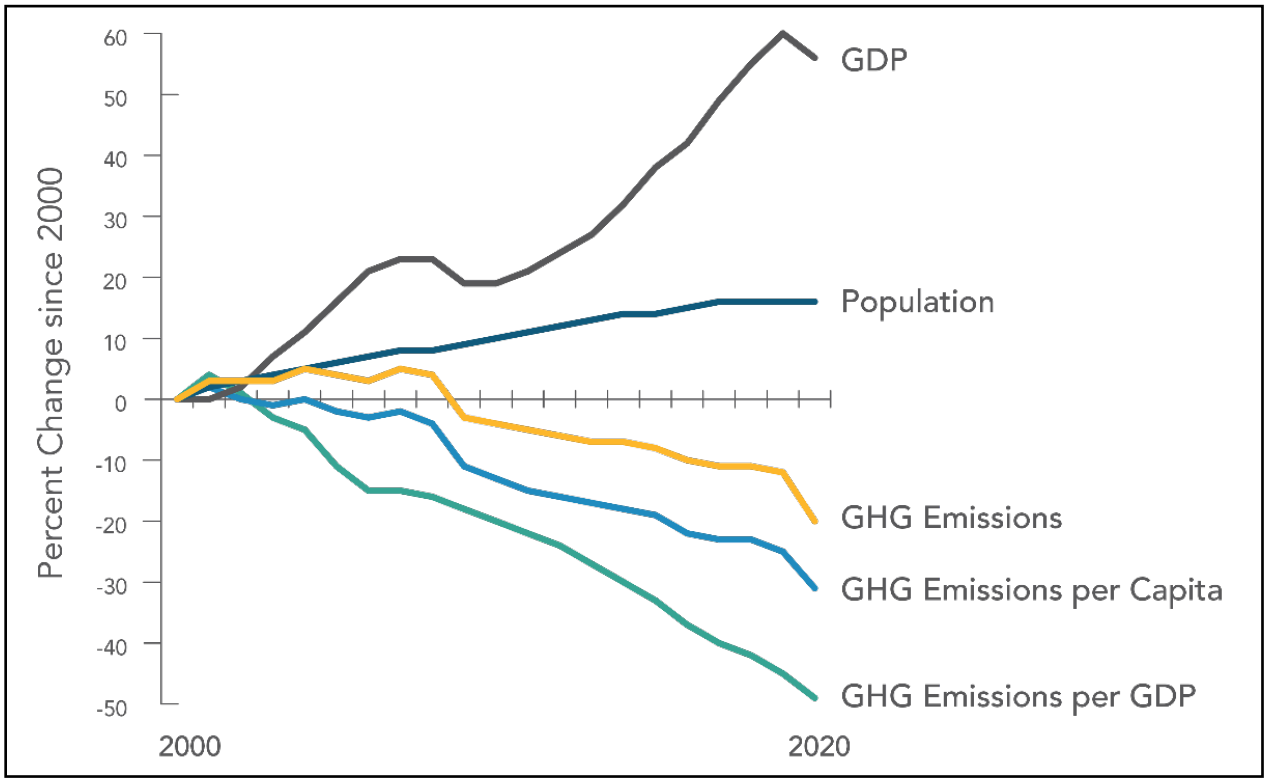

Figure 23 - Change in California GDP, Population, and Greenhouse Gas Emissions since 2000 (Source: ARB 2022a).

AB 32 required the Air Resources Board to develop a scoping plan that describes the approach California will take to achieve the goal of reducing greenhouse gas emissions to 1990 levels by 2020, and to update it every 5 years. The Air Resources Board adopted the first scoping plan in 2008. The second updated plan, *California's 2017 Climate Change Scoping Plan*, adopted on December 14, 2017, reflects the 2030 target established in Executive Order B-30-15 and SB 32. The draft 2022 Scoping Plan Update also lays out a path to achieving carbon neutrality by 2045 (ARB 2022b).

Regional Plans

The Air Resources Board sets regional greenhouse gas reduction targets for California's 18 metropolitan planning organizations (MPOs) to achieve through planning future projects that will cumulatively achieve those goals, and reporting how they will be met in the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Targets are set at a percent reduction of passenger vehicle greenhouse gas emissions per person from 2005 levels. The proposed project is included in the Regional Transportation Plan/Sustainable Communities Strategy for the Kern Council of Governments. The regional reduction target for the Kern Council of Governments is 15 percent by 2035 (ARB 2022c).

Project Analysis

Greenhouse gas emissions from transportation projects can be divided into those produced during operation of the State Highway System (operational emissions) and those produced during construction. The main greenhouse gases produced by the transportation sector are CO_2, CH_4, N_2O, and HFCs. CO_2 emissions are a product of burning gasoline or diesel fuel in internal combustion engines, along with relatively small amounts of CH_4 and N_2O. A small amount of HFC emissions related to refrigeration is also included in the transportation sector.

The CEQA Guidelines generally address greenhouse gas emissions as a cumulative impact due to the global nature of climate change (Public Resources Code, Section 21083(b)(2)). As the California Supreme Court explained, "because of the global scale of climate change, any one project's contribution is unlikely to be significant by itself." (Cleveland National Forest Foundation *versus* San Diego Association of Governments (2017) 3 California 5th 497, 512). In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (CEQA Guidelines Sections 15064(h)(1) and 15130). To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. Although climate change is ultimately a cumulative impact, not every individual project that emits greenhouse gases must necessarily be found to contribute to a significant cumulative impact on the environment.

Operational Emissions

The purpose of the project is to construct a 12-foot wide truck climbing lane on eastbound State Route 58. Although a truck climbing lane will be constructed, the project will not increase the vehicle capacity of the roadway. A Vehicle Miles Traveled (VMT) screening memo has been prepared and has determined that the truck climbing lane, by its function, does not increase personal vehicle VMT because it will be used only by very slow-moving traffic, mainly tractor trailers, as an operational improvement. "Truck Only" signs posted along the truck climbing lane will also discourage personal vehicles from using the lane. The project will not induce personal vehicle travel along this section of State Route 58 (please refer to the 58 Truck Climbing Lane VMT screening memo for more information). This type of project generally causes minimal or no increase in operational greenhouse gas emissions. While some greenhouse gas emissions

during the construction period would be unavoidable, no increase in operational greenhouse gas emissions is expected.

Construction Emissions

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

Use of long-life pavement, improved traffic management plans, and changes in materials, can also help offset emissions produced during construction by allowing longer intervals between maintenance and rehabilitation activities.

Construction greenhouse gas emissions for this project were calculated using the Sacramento Metropolitan Air Quality Management District Road Construction Emissions Model. The project is expected to generate 3.14 pounds of reactive organic gases emissions per day, 62.15 pounds of CO emissions per day, 14.68 pounds of NOx emissions per day, 50.77 pounds of PM10 emissions per day, 10.96 pounds of PM2.5 emissions per day, 0.13 pound of SOx emissions per day, 12,671.05 pounds of CO_2 emissions per day, 2.90 pounds of CH_4 emissions per day, 0.54 pounds of N_2O missions per day, and 12,905.28 pounds of CO_2e emissions per day. The total CO_2e emissions expected to be generated during the construction period are 1,327.28 tons.

CEQA Conclusion

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

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

Greenhouse Gas Reduction Strategies

Statewide Efforts

In response to AB 32, California is implementing measures to achieve emission reductions of greenhouse gases that cause climate change. Climate change programs in California are effectively reducing greenhouse gas emissions from all sectors of the economy. These programs include regulations, market programs, and incentives that will transform transportation, industry, fuels, and other sectors, to take California into a sustainable, low-carbon and cleaner future, while maintaining a robust economy (ARB 2022d).

Major sectors of the California economy, including transportation, will need to reduce emissions to meet 2030 and 2050 greenhouse gas emissions targets. The Governor’s Office of Planning and Research identified five sustainability pillars in a 2015 report: (1) increasing the share of renewable energy in the State’s energy mix to at least 50 percent by 2030; (2) reducing petroleum use by up to 50 percent by 2030; (3) increasing the energy efficiency of existing buildings by 50 percent by 2030; (4) reducing emissions of short-lived climate pollutants; and (5) stewarding natural resources, including forests, working lands, and wetlands, to ensure that they store carbon, are resilient, and enhance other environmental benefits (Office of Planning

and Research 2015). The Office of Planning and Research later added strategies related to achieving statewide carbon neutrality by 2045 in accordance with Executive Order B-55-18 and AB 1279 (Office of Planning and Research 2022).

The transportation sector is integral to the people and economy of California. To achieve greenhouse gas emission reduction goals, it is vital that the state build on past successes in reducing criteria and toxic air pollutants from transportation and goods movement. Greenhouse gas emission reductions will come from cleaner vehicle technologies, lower-carbon fuels, and reduction of vehicle miles traveled (VMT). Reducing today's petroleum use in cars and trucks by 50 percent is a key state goal for reducing greenhouse gas emissions by 2030 (California Environmental Protection Agency 2015).

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

Subsequently, Governor Gavin Newsom issued Executive Order N-82-20 to combat the crises in climate change and biodiversity. It instructs state agencies to use existing authorities and resources to identify and implement near- and long-term actions to accelerate natural removal of carbon and build climate resilience in our forests, wetlands, urban greenspaces, agricultural soils, and land conservation activities in ways that serve all communities and in particular low-income, disadvantaged, and vulnerable communities. To support this order, the California Natural Resources Agency (2022a) released *Natural and Working Lands Climate Smart Strategy*, with a focus on nature-based solutions.

Caltrans Activities

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

Climate Action Plan for Transportation Infrastructure

The California Action Plan for Transportation Infrastructure (CAPTI) builds on executive orders signed by Governor Newsom in 2019 and 2020 targeted at reducing greenhouse gas emissions in transportation, which account for more than 40 percent of all polluting emissions, to reach the state's climate goals. Under the California Action Plan for Transportation Infrastructure, where feasible and within existing funding program structures, the state will invest discretionary transportation funds in sustainable infrastructure projects that align with its climate, health, and social equity goals (California State Transportation Agency 2021).

California Transportation Plan

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce greenhouse gas emissions. It serves as an umbrella document for all the other statewide transportation planning documents. The CTP 2050 presents a vision of a safe, resilient, and universally accessible transportation system that supports vibrant communities, advances racial and economic justice, and improves public and environmental health. The plan's climate goal is to achieve statewide greenhouse gas emissions reduction targets and increase resilience to climate change. It demonstrates how

greenhouse gas emissions from the transportation sector can be reduced through advancements in clean fuel technologies; continued shifts toward active travel, transit, and shared mobility; more efficient land use and development practices; and continued shifts to telework (Caltrans 2021a).

Caltrans Strategic Plan

The *Caltrans 2020–2024 Strategic Plan* includes goals of stewardship, climate action, and equity. Climate action strategies include developing and implementing a Caltrans Climate Action Plan; a robust program of climate action education, training, and outreach; partnership and collaboration; a vehicle miles traveled monitoring and reduction program; and engaging with the most vulnerable communities in developing and implementing Caltrans climate action activities (Caltrans 2021b).

Caltrans Policy Directives and Other Initiatives

Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012) established a department policy to ensure coordinated efforts to incorporate climate change into departmental decisions and activities. *Caltrans Greenhouse Gas Emissions and Mitigation Report* (Caltrans 2020) provides a comprehensive overview of Caltrans' emissions. The report documents and evaluates current Caltrans procedures and activities that track and reduce greenhouse gas emissions and identifies additional opportunities for further reducing greenhouse gas emissions from department-controlled emission sources, in support of departmental and state goals.

Project-Level Greenhouse gas Reduction Strategies

All construction contracts include Caltrans Standard Specifications related to air quality. Sections 7-1.02A and 7-1.02C, Emissions Reduction, require contractors to comply with all laws applicable to the project and to certify they are aware of and will comply with all Air Resources Board emission reduction regulations. Section 14-9.02, Air Pollution Control, 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 following measures will also be implemented in the project to reduce greenhouse gas emissions and potential climate change impacts from the project.

- Earthwork Balance - Reduce the need for transport of earthen materials by balancing cut and fill quantities. Earthen material removed from cut slopes should be reused on fill slopes when feasible.

- The Contractor will be encouraged to use material source and borrow sites as close to the project location as possible, reducing the number of haul trips and distance traveled per trip.

Adaptation

Reducing greenhouse gas emissions is only one part of an approach to addressing climate change. Caltrans must plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and their intensity, and in the frequency and intensity of wildfires. Flooding and erosion can damage or wash out roads; longer periods of intense heat can buckle pavement and railroad tracks; storm surges combined with a rising sea level can inundate highways. Wildfire can directly burn facilities and indirectly cause damage when rain falls on denuded slopes that

landslide after a fire. Effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. Accordingly, Caltrans must consider these types of climate stressors in how highways are planned, designed, built, operated, and maintained.

Federal Efforts

Under NEPA Assignment, Caltrans is obligated to comply with all applicable federal environmental laws and Federal Highway Administration National Environmental Policy Act regulations, policies, and guidance.

The *Fourth National Climate Assessment*, published in 2018, presents the foundational science and the "human welfare, societal, and environmental elements of climate change and variability for 10 regions and 18 national topics, with particular attention paid to observed and projected risks, impacts, consideration of risk reduction, and implications under different mitigation pathways."

The U.S. Department of Transportation Policy Statement on Climate Adaptation in June 2011 committed the federal Department of Transportation to "integrate consideration of climate change impacts and adaptation into the planning, operations, policies, and programs of DOT in order to ensure that taxpayer resources are invested wisely, and that transportation infrastructure, services and operations remain effective in current and future climate conditions" (U.S. DOT 2011). The U.S. Department of Transportation Climate Action Plan of August 2021 followed up with a statement of policy to "accelerate reductions in greenhouse gas emissions from the transportation sector and make our transportation infrastructure more climate change resilient now and in the future," following this set of guiding principles (U.S. DOT 2021):

- Use best-available science
- Prioritize the most vulnerable
- Preserve ecosystems
- Build community relationships
- Engage globally

The U.S. Department of Transportation developed its climate action plan pursuant to the federal Executive Order 14008, *Tackling the Climate Crisis at Home and Abroad* (January 27, 2021). Executive Order 14008 recognized the threats of climate change to national security and ordered federal government agencies to prioritize actions on climate adaptation and resilience in their programs and investments (White House 2021).

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

State Efforts

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system. A number of state policies and tools have been developed to guide adaptation efforts.

California's Fourth Climate Change Assessment (Fourth Assessment) (2018) is the state's effort to "translate the state of climate science into useful information for action." It provides information that will help decision makers across sectors and at state, regional, and local scales protect and build the resilience of the state's people, infrastructure, natural systems, working lands, and waters. The State's approach recognizes that the consequences of climate change occur at the intersections of people, nature, and infrastructure. The Fourth Assessment reports that if no measures are taken to reduce greenhouse gas emissions by 2021 or sooner, the state is projected to experience a 2.7 to 8.8 degrees Fahrenheit increase in average annual maximum daily temperatures, with impacts on agriculture, energy demand, natural systems, and public health; a two-thirds decline in water supply from snowpack and water shortages that will impact agricultural production; a 77 percent increase in average area burned by wildfire, with consequences for forest health and communities; and large-scale erosion of up to 67 percent of Southern California beaches and inundation of billions of dollars' worth of residential and commercial buildings due to sea level rise (State of California 2018).

Sea level rise is a particular concern for transportation infrastructure in the coastal zone. Major urban airports will be at risk of flooding from sea level rise combined with storm surge as early as 2040; San Francisco airport is already at risk. Miles of coastal highways vulnerable to flooding in a 100-year storm event will triple to 370 by 2100, and 3,750 miles will be exposed to temporary flooding. The Fourth Assessment's findings highlight the need for proactive action to address these current and future impacts of climate change.

In 2008, then-governor Arnold Schwarzenegger recognized the need when he issued Executive Order S-13-08, focused on sea level rise. Technical reports on the latest sea level rise science were first published in 2010 and updated in 2013 and 2017. The 2017 projections of sea level rise and new understanding of processes and potential impacts in California were incorporated into the *State of California Sea-Level Rise Guidance Update* in 2018. This Executive Order also gave rise to the *California Climate Adaptation Strategy* (2009), updated in 2014 as *Safeguarding California: Reducing Climate Risk* (Safeguarding California Plan), which addressed the full range of climate change impacts and recommended adaptation strategies. The Safeguarding California Plan was updated in 2018 and again in 2021 as the *California Climate Adaptation Strategy*, incorporating key elements of the latest sector-specific plans such as the *Natural and Working Lands Climate Smart Strategy*, *Wildfire and Forest Resilience Action Plan*, *Water Resilience Portfolio,* and the California Action Plan for Transportation Infrastructure (described above). Priorities in the 2021 California Climate Adaptation Strategy include acting in partnership with California Native American Tribes, strengthening protections for climate-vulnerable communities that lack capacity and resources, nature-based climate solutions, use of best available climate science, and partnering and collaboration to best leverage resources (California Natural Resources Agency 2022b).

Executive Order B-30-15, signed in April 2015, requires state agencies to factor climate change into all planning and investment decisions. This order recognizes that effects of climate change in addition to sea level rise also threaten California's infrastructure. At the direction of Executive Order B-30-15, the Office of Planning and Research published *Planning and Investing for a Resilient California: A Guidebook for State Agencies* in 2017, to encourage a uniform and systematic approach.

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

Caltrans Adaptation Efforts

Caltrans Vulnerability Assessments

Caltrans completed climate change vulnerability assessments to identify segments of the State Highway System vulnerable to climate change effects of precipitation, temperature, wildfire, storm surge, and sea level rise.

The climate change data in the assessments were developed in coordination with climate change scientists and experts at federal, state, and regional organizations at the forefront of climate science. The findings of the vulnerability assessments guide analysis of at-risk assets and development of Adaptation Priority Reports as a method to make capital programming decisions to address identified risks.

Project Adaptation Analysis

The project lies in Caltrans District 9 on a section of State Route 58 that travels through the Tehachapi Mountains in Kern County. The geographic and climatic conditions of the district create special challenges with respect to extreme weather events and long-term climate change. According to the District 9 System Management Plan, "seasonal weather variations and related natural events/disasters impact the District's highways including subzero temperatures, heavy snowfall, ice, avalanche, high winds, blinding dust, wildfire, excessive summer heat, flash floods, and washouts. Geographical constraints (e.g., cliffs and rivers) and sensitive flora/fauna species are also challenging to the planning, designing, building, and maintaining of highways in the district" (Caltrans District 9 2015).

As part of a statewide effort to reduce greenhouse gases, District 9 completed the Caltrans Climate Change Vulnerability Assessment Summary Report District 9 and associated technical report in 2019. Review of this assessment and report indicates that the project area is vulnerable to several climate stressors: temperature rise, precipitation, and wildfire.

Sea Level Rise

The project is outside the coastal zone and not in an area subject to sea level rise. Therefore, direct impacts to transportation facilities due to projected sea level rise are not expected.

Precipitation and Flooding

The Caltrans District 9 Climate Change Vulnerability mapping of changes in 100-year storm precipitation depth shows potential increase of no greater than 4.9 percent through 2085. The hydraulic capacity of waterways within the project limits will be improved by the project through improvements to existing drainage features and construction of swales, underdrains, and an infiltration basin. Existing drainages are designed to convey flows appropriately and will be extended to maintain their functionality under the new truck climbing lane and shoulder widths. Overall, the project will not significantly alter drainage patterns or decrease the ability of existing

systems to convey floodwaters. Accordingly, the project would be resilient to projected future changes in precipitation.

Wildfire

The project area is within the State Responsibility Areas, and the Fire Hazard Severity Zone rating is designated as Moderate to High. The Caltrans District 9 Climate Change Vulnerability Assessment maps State Route 58 in the project area as a roadway exposed to wildfire and indicates that it is in an area of medium to high level of wildfire concern through 2085.

Project features that will protect the project from wildfire risk include installation of metal flared end sections as well as vegetation clearing around the work area, slopes, and shoulders to serve as defensible space. The extra pavement width will provide for a wider fire break, reducing the potential for sparks and embers jumping the facility. The addition of the truck climbing lane will reduce bottleneck congestion, which could potentially help travelers move through the Tehachapi Pass more efficiently and provide extra evacuation capacity for the area in case of wildfire.

The project will not install structures or facilities that would increase risk of wildfire. Caltrans 2018 revised Standard Specification 7-1.02M(2) mandates fire prevention procedures, including a fire prevention plan, to avoid accidental fire starts during construction. Contractors will be required to comply with these measures. After construction is complete, the project is not likely to be more vulnerable to wildfire than under existing conditions.

Temperature

The project area lies within a region that is characterized by a hot to cold and semi-arid to sub-humid climate. Temperatures vary greatly throughout the year, with an average maximum temperature of 88.5 degrees Fahrenheit in the warmest months of the year and an average minimum temperature of 34.0 degrees Fahrenheit in the coldest months of the year.

The Caltrans District 9 Climate Change Vulnerability Assessment estimates climate change could raise 7-day average maximum temperatures in the project area by close to 1.9 degrees Fahrenheit by 2025, 5.9 degrees Fahrenheit by 2055, and 9.9 degrees Fahrenheit by 2085. These temperature rises could have impacts on Caltrans facilities and assets in the project area, such as the following:

- Temperature changes might affect in the long-term the most appropriate pavement material.
- Ground conditions and more/less water saturation could alter the design factors for foundations and retaining walls.
- Extended periods of high temperatures will affect safety conditions for employees who work long hours outdoors, such as those working on maintenance activities.
- Right-of-way landscaping and vegetation must survive higher temperatures and drought.
- Extreme temperatures could cause pavement discontinuities and deformation, which could lead to more frequent maintenance.
- Higher temperatures combined with drought conditions can lead to more wildfires, requiring more evacuations (and thus emergency traffic management plans).

Maintenance strategies for the project, as well as properties of concrete and asphalt binder materials, will be selected to increase the project's resilience to temperature effects.

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Chapter 4 – Comments and Coordination

Early and continuing coordination with the general public and public agencies is an essential part of the environmental process. It helps planners determine the necessary scope of environmental documentation and the level of analysis required, and to identify potential impacts and avoidance, minimization, and/or mitigation measures and related environmental requirements. Agency and tribal consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including interagency coordination meetings, public meetings, public notices, Project Development Team meetings, phone calls, and emails. This chapter summarizes the results of Caltrans' efforts to identify, address, and resolve project-related issues through early and continuing coordination.

The first meeting discussing potential truck climbing lanes on State Route 58 was held on October 18, 2018 at the City of Tehachapi offices. Attendees included: Greg Garrett, City Manager for the City of Tehachapi, Jay Schlosser, City of Tehachapi Development Services Director, Ahron Hakimi, Kern Council of Governments Executive Director, Phil Smith, Mayor of the City of Tehachapi, and Zack Scrivner, Kern County Supervisor. Representatives from Caltrans District 9 included: Brent Green, Director, Brian Wesling, Supervising Transportation Engineer, Lianne Talbot, Traffic Operations Engineer, and Jill Batchelder, Transportation Planning. There was a review of the project study area and phasing. Future Annual Average Daily Traffic increases, the extension for the Centennial Corridor and the new Walmart Distribution Center in Shafter and Amazon Distribution Center in Bakersfield were discussed. Specific location suggestions were presented, and funding sources were considered.

At the October 18, 2018, the Kern Council of Governments Transportation Planning and Policy Committee Meeting (TPPC), Brent Green, District 9 Director, provided the Caltrans report and indicated District 9 representatives had met with representatives from the City of Tehachapi, Kern Council of Governments, and Kern County regarding the truck climbing lane project initiation document. Mr. Green's report indicates the presentation was well received by local agency representatives.

In the Executive Director's Report of the October 18, 2019 meeting minutes, Mr. Ahron Hakimi, Kern Council of Governments Executive Director, expanded on Mr. Green's comments about initiating the Tehachapi truck lane project. Meeting attendees included Supervisor Scrivner, Council Member Smith, staff from City of Bakersfield and Caltrans staff. Mr. Hakimi stated that "Everyone involved is encouraged that truck climbing lanes are getting the attention they deserve, and we look forward to working with District 9, maybe District 6 and elected officials to find a funding source for 1, 2 and maybe 3 locations."

On January 2, 2019, Caltrans presented the project to the Kern Council of Governments Technical Advisory Committee. Brian Wesling, Caltrans Senior Transportation Engineer, presented the project development process, Annual Average Daily Traffic on State Route 58, future growth and an overview of the three project locations. Several questions and comments will be taken into consideration in the development process.

On January 17, 2019, Kern Council of Governments hosted a workshop on Truck Climbing Lanes on Eastbound Highway 58. At the meeting, Caltrans provided a presentation on the proposed State Route 58 truck climbing lanes that covered Caltrans' involvement and actions for the truck climbing lanes, the purpose and need of the project, State Route 58 Route roadway profiles, and alternatives.

On March 26, 2019, Jenny Richardson spoke with the U.S. Fish and Wildlife Service regarding listed species; Ray Bransfield (U.S. Fish and Wildlife Service) provided information on California condors (distributional range through the Tehachapi area); Ray Bransfield recommended speaking with Rick Kuyper (U.S. Fish and Wildlife Service Sacramento), who provided information on amphibians and some of the other listed species in the region, but to ultimately contact Patricia Cole, who is the Central Valley contact. Justin Sloan from the California Department of Fish and Wildlife provided information regarding species, including the San Joaquin kit fox. Steven Hulbert provided the list of species to review for CEQA compliance.

On April 24, 2019, Heather Elder spoke with the U.S. Fish and Wildlife Service (Justin Sloan) regarding listed species. They discussed doing San Joaquin kit fox den surveys as an avoidance and minimization measure, but the probability of finding a den is low. Justin Sloan was not concerned with the Tipton kangaroo rat, California condor (we will do general nesting bird surveys), blunt-nose leopard lizard, giant garter snake, California red-legged frog, delta smelt, and vernal pool fairy shrimp. He suggested we focus on the listed plant species and focus plant surveys in the appropriate flowering seasons for the Bakersfield cactus, California jewel flower (not very likely but will survey), and San Joaquin wooly-threads (locations to the west).

At the May 16, 2019 Transportation Planning and Policy Committee Meeting, Mr. Brandon Fitt, Planning, Caltrans, District 9, reported that the truck climbing lanes project was in the environmental scoping phase and that Caltrans planned to have the Project Initiation Document (PSR-PDS) completed by the end of the calendar year.

On August 5, 2019, the Tehachapi City Council unanimously approved Resolution #31-19, authorizing the City to apply for Congestion Mitigation and Air Quality (CMAQ) funding and obligated the City to a 11.47 percent funding match.

The Congestion Mitigation and Air Quality (CMAQ) Program applications were reviewed by the Kern Council of Governments Transportation Advisory Committee at their September 4, 2019 meeting. There were 38 applications requesting almost $58 million in Congestion Mitigation and Air Quality funds.

In the September 19, 2019 Transportation Planning and Policy Committee (TPPC) meeting, the consent agenda included the Congestion Mitigation and Air Quality (CMAQ) Program applications for review. The State Route 58 Truck Climbing Lanes project was included in the review. This project is included in the Kern Council of Governments 2018 Regional Transportation Plan - Table 5.2 - Unconstrained Listing of Project Needs – Major Highway Improvements (the City of Tehachapi, acting as lead agency). At the Kern Council of Governments Congestion Mitigation and Air Quality workshop on November 13, 2019, an exception was made to allow the City of Tehachapi to use toll credits to cover the 11.47 percent funding match due to the regional importance of this project.

The Kern Council of Governments Technical Advisory Committee reviewed the Congestion Mitigation and Air Quality (CMAQ) Program comments and responses to the applications at its November 6, 2019 meeting.

The November 21, 2019 Transportation Planning and Policy Committee (TPPC) meeting consent agenda included the summary of comments and responses to the Congestion Mitigation and Air Quality (CMAQ) Program application.

On November 29, 2019, Jenny Richardson, Caltrans Biologist, contacted California Department of Fish and Wildlife liaison, Steven Hulbert, regarding protection of oaks under CEQA; he sent

information on the State Oak Woodlands Conservation Law, which defines oak woodlands as habitat with over 1 percent of the canopy cover composed of native oak trees and a diameter at breast height (DBH) greater than 5 inches; trees below 5 inches will remain under county ordinances or general plans.

From November 27, 2019 to the present, monthly calls were made to the Nature Conservancy to coordinate on a wildlife habitat connectivity study for Keene Pavement and State Route 58 Truck Climbing Lane.

On, February 7, 2022, letters were sent via email to Native American Tribes that have requested notification under Assembly Bill 52. One response was received, indicating that the proposed project is situated outside of the Fernandeño Tataviam Band of Mission Indians ancestral tribal boundaries.

On May 10, 2022, Section 106 letters requesting input on the proposed project were sent to parties listed on the Sacred Lands File Search from the proposed Keene Pavement Project on State Route 58 from post miles 77.20 to 88.56. A request for formal consultation was received and is ongoing.

On May 11, 2022, an email was sent to the Native American Heritage Commission requesting a Sacred Lands File search. Search results were negative (July 6, 2022 email response).

On May 11, 2022, an email was sent to the Tehachapi Heritage League Museum requesting input. No response has been received.

From August 2022 to present, collaboration on the wildlife camera study expanded to include the University of California, Davis. Additional cameras were placed along the 58 corridor.

Chapter 5 – List of Preparers

The following Caltrans staff and consultants contributed to the preparation of this Initial Study/Environmental Assessment:

Allam Alhabaly, Transportation Engineer. B.S., California State University, Fresno, School of Engineering; 23 years of experience in environmental technical studies with emphasis on noise studies, 2 years of experience in design and construction. Contribution: Oversight review of the Noise Study Report

Kristopher Bason, Environmental Scientist. B.S., Aquatic Biology, University of California at Santa Barbara; 8 years of experience working in environmental science; 4 years with Caltrans. Contribution: Community Impacts Memo, Climate Change Analysis, Environmental document preparation.

Bradley Bowers, Engineering Geologist. M.S., Environmental Science and Management, University of California at Santa Barbara; 11 years of experience working in environmental geology; 6 years with Caltrans. Contribution: Air, Noise, Hazardous Waste, and Stormwater/National Pollutant Discharge Elimination System reports; Noise and Paleontology study oversight.

Heather Elder, Environmental Scientist. B.S., Environmental Law and Regulations, Cal Poly Humboldt; 15 years of experience in environmental surveys and document preparation. Contribution: Natural Environmental Study Report.

Julie Sage, Associate Environmental Planner. B.A., Anthropology, California State University, Bakersfield. Professionally Qualified Staff: Co-Principal Investigator, Prehistoric Archaeology; 23 years of archaeological experience, including 3½ years with Caltrans. Contribution: Cultural resource compliance documents.

BryAnna Vaughan, Senior Environmental Scientist – Lead Worker. B.S., Oceanography, Humboldt State University; 23 years of experience working in environmental research, project management, surveys, and preparing regulatory documents. Contribution: Cumulative Impact Assessment.

Chapter 6 – Distribution List

Kern County Library Tehachapi Branch
212 South Green Street
Tehachapi, California 93561

Kern County Library Bakersfield Branch
1619-1629 S Street
Bakersfield, California 93301

Kern Council of Governments
1401 19th Street, Suite 300
Bakersfield, California 93301

Central Valley Regional Water Quality Control Board
1685 "E" Street
Fresno, California 93706-2007

California Department of Fish and Wildlife – Central Region
1234 East Shaw Avenue
Fresno, California 93710

U.S. Army Corps of Engineers, Sacramento District
1325 J Street -- Room 1513
Sacramento, California 95814

APPENDICES

Appendix A. Title VI Policy Statement

CALIFORNIA STATE TRANSPORTATION AGENCY GAVIN NEWSOM, GOVERNOR

California Department of Transportation

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September 2022

NON-DISCRIMINATION POLICY STATEMENT

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Caltrans will make every effort to ensure nondiscrimination in all of its services, programs and activities, whether they are federally funded or not, and that services and benefits are fairly distributed to all people, regardless of race, color, or national origin. In addition, Caltrans will facilitate meaningful participation in the transportation planning process in a non-discriminatory manner.

Related federal statutes, remedies, and state law further those protections to include sex, disability, religion, sexual orientation, and age.

For information or guidance on how to file a complaint, or obtain more information regarding Title VI, please contact the Title VI Branch Manager at (916) 639-6392 or visit the following web page: https://dot.ca.gov/programs/civil-rights/title-vi.

To obtain this information in an alternate format such as Braille or in a language other than English, please contact the California Department of Transportation, Office of 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 be sure that all of the environmental measures identified in this document are executed at the appropriate times, the following mitigation program (as articulated on the proposed Environmental Commitments Record [ECR] which 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 this 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, and will be filled out as each of the measures is implemented. Note: Some measures may apply to more than one resource area. Duplicative or redundant measures have not been included in this Environmental Commitments Record.

Visual/Aesthetics

The following avoidance and minimization measures will be implemented to address potential impacts to Visual and Aesthetic resources:

VIS-1: All existing vegetation within temporary impact areas will be preserved to the maximum extent practicable.

VIS-2: Measures such as temporary high visibility fencing will be used to protect vegetation where needed. Pruning vegetation will also be considered to prevent damage from construction.

VIS-3: Any disturbed areas for contractor use, including access roads, staging, and any other temporary used during construction, will be restored to pre-project conditions.

VIS-4: Construction activities shall limit all construction lighting to within the area of work and avoid light trespass in residential areas through directional lighting, shielding, and other measures as needed.

VIS-5: During construction operations, unsightly material and equipment in staging areas shall be placed where they are less visible and/or covered where possible.

VIS-6: All oak and other native trees greater than 4 inches in diameter at breast height (DBH) that are removed will be replaced in-kind as is feasible only within the project limits. Any highway planting species will be chosen as appropriate for conditions at proposed locations and will reflect the native species within the corridor.

VIS-7: Replacement planting must occur within 2 years of the completion of this parent project and will be funded by the parent project. Noxious weed removal activities within and directly adjacent to planting areas will be addressed as part of the plant replacement contract.

VIS-8: Slope rounding and contouring will be integrated where feasible to be similar in appearance to existing and more natural conditions.

VIS-9: Any new elements that will be visible from the roadway or from surrounding public access areas, such as the debris deflector, will receive aesthetic treatment.

VIS-10: Any elements to be replaced in-kind, such as corrugated metal down drains, will have a similar visual appearance to the current conditions.

VIS-11: Should there be a need for retaining walls or other stabilization features, aesthetic treatment will be required to better integrate these features into the surrounding visual context.

Cultural Resources

The project will include the following Caltrans standard provisions dealing with the chance of discovery of previously unknown cultural materials or human remains during construction:

CUL-1: If cultural materials are discovered during 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.

CUL-2: 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 9 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 5097.98 are to be followed as applicable.

Water Quality

The following avoidance and minimization measures will be implemented for the project:

WQ-1: Approved design pollution and prevention treatment Best Management Practices would be incorporated into the project design. Permanent location-specific Best Management Practices would be determined by the project design team in conjunction with the district storm water coordinator and the Regional Water Quality Control Board.

WQ-2: During construction, temporary Best Management Practice devices will be implemented to minimize impacts to water quality during construction. Sediment control barriers such as fiber roll, silt fencing, drain inlet protection, stockpile management practices and weather monitoring would be implemented to prevent movement of pollutants and sediments into water bodies.

WQ-3: All construction work in creeks and drainages would be conducted when the channel is dry, when feasible, to avoid impacts to water quality.

WQ-4: The Central Valley Regional Water Quality Control Board 401 Certification, which will be obtained prior to construction, will outline permit conditions. The permit condition will likely include onsite erosion control work, and implementation of Best Management Practices. Biological Mitigation Measures BIO-15 and BIO-18 will also serve to protect wetlands under the jurisdiction of the Clean Water Act. In addition, Visual Measures VIS-1 through VIS-3 and VIS-6 through VIS-8 will also serve to protect waters under the jurisdiction of the Central Valley Regional Water Quality Control Board.

WQ-5: Until a jurisdictional determination has been discussed with the appropriate U.S. Army Corps of Engineers office, the aquatic resources are for now assumed to fall under the jurisdiction of the U.S. Army Corps of Engineers, therefore a 404 permit is expected be obtained

prior to construction. Implementation of Water Quality Measures 1-4, including the listed Biological and Visual measures, would minimize impacts to such waters.

Geology

The following avoidance and minimization measures will be implemented for the project:

GEO-1: The project will be constructed according to Caltrans' seismic design standards, as established in the Highway Design Manual, to reduce the potential of failure due to an earthquake, liquefaction, erosion, or other geological hazards.

GEO-2: The project would limit the amount of earthwork necessary to complete the project.

GEO-3: Additional geotechnical analysis will be conducted before project construction to determine appropriate final design elements required to protect the travelling public from potential geologic hazards.

GEO-4: Slopes will be revegetated, and duff and mulch will be applied to encourage natural plant growth to control erosion.

Paleontology

The following avoidance and minimization measures will be implemented to minimize the potential of impacting paleontological resources during construction:

PAL-1: Preparation of a Paleontological Mitigation Plan (PMP)—This plan will outline the curation agreement, monitoring schedule and procedures to follow in the event significant fossil resources are recovered during construction activities. The plan will be prepared during the project's Design phase, once adequate project design information regarding subsurface disturbance location, depth, and lateral extent is available.

PAL-2: Construction Paleontological Training—Prior to excavation activities, paleontological resource training will be delivered for all excavation personnel and Caltrans construction personnel.

PAL-3: Construction Paleontological Monitoring—Paleontological resource monitoring by a qualified paleontological monitor will occur for all excavation activities in the following areas:

- Between post miles 76.3 and 77.1
- Between post miles 79.7 and 80.2
- The road cut adjacent to the eastbound lanes of State Route 58, east of the Caliente Road exit (post miles 77.1 to 77.5)

Air Quality

Most of the construction impacts to air quality are localized in extent and short-term in duration and, therefore, will not result in long-term adverse conditions. Implementation of the following standardized measures, some of which may also be required for other purposes such as storm water pollution control, will avoid and minimize any air quality impacts resulting from construction activities:

AIR-1: The construction contractor must comply with Caltrans Standard Specifications and all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.

AIR-2: Water or dust palliative will be applied to the site and equipment as often as necessary to control fugitive dust emissions and comply with local air quality regulations.

AIR-3: Soil binder may be spread on unpaved roads used for construction purposes and on project construction parking areas as needed to control dust.

AIR-4: Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by California Code of Regulations Title 17, Section 93114.

AIR-5: A dust control plan will be included within the Contractor's Stormwater Pollution Prevention Plan and will outline the procedures they will implement to control fugitive dust during construction activities. It may include items such as sprinkling, temporary paving, speed limit reductions, and/or timely revegetation of disturbed slopes as needed to minimize construction impacts to existing communities.

AIR-6: Equipment and materials storage sites will be located as far away from residential and park uses as practicable. Construction areas will be kept clean and orderly.

AIR-7: Track-out reduction measures, such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic, will be used.

AIR-8: All transported loads of soils and wet materials will be covered before transport, or adequate freeboard (space from the top of the material to the top of the truck) will be provided to minimize emission of dust (particulate matter) during transportation.

AIR-9: Dust and mud that are deposited on paved, public roads due to construction activity and traffic will be promptly and regularly removed to decrease particulate matter.

AIR-10: To the extent feasible, construction traffic will be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.

AIR-11: Mulch will be installed or vegetation planted as soon as practical after grading to reduce windblown particulate in the area.

Noise

The project will implement the following Caltrans standard provision to address potential noise-related impacts during construction:

NOI-1: Construction noise control will conform to the provisions in Section 14-8.02 “Noise Control” of the Caltrans Standard Specifications. The noise level from the contractor’s operations, between the hours of 9:00 p.m. and 6:00 a.m., will not exceed 86 dBA Leq at a distance of 50 feet.

Biological Environment

Quercus Woodland (Oak Woodland)

Avoidance and minimization measures will be implemented to reduce additional impacts to oak trees and oak woodland habitat that could occur during construction:

BIO-1: Environmentally Sensitive Area (ESA) fencing will be installed around the dripline of the mapped trees to avoid or minimize unnecessary encroachment and prohibit mechanical activity within the root zone. No construction activities or placement of structures should occur within the root zone of any retained oak trees. Landscaping, trenching, or irrigation systems should not be installed within the root zone of any retained oak trees. Sedimentation and siltation should be controlled to avoid filling around an oak tree's base.

BIO-2: A Biological Monitor shall be onsite to monitor oak trees within or adjacent to the Project Impact Area during grading and construction activities.

BIO-3: All oak tree removals shall be verified to check for damage to any retained oak trees growing in close proximity to the removed oak trees.

BIO-4: Plantings of oak trees will be included in the restoration and erosion control plans prepared during the project's design phase and will be implemented after construction. All oak greater than 4 inches in diameter at breast height that are removed or permanently damaged during construction will be replaced in-kind as is feasible within the project limits.

BIO-5: Onsite planting and restoration will occur for six trees within the California Department of Fish and Wildlife's jurisdictional areas at a mitigation ratio negotiated with the resource agencies.

Habitat Connectivity

To avoid temporary or permanent impacts to habitat connectivity, the following avoidance, minimization, and mitigation measures will be implemented:

BIO-6: Avoid construction activities at night (dusk till dawn) hours to prevent temporary disruption of wildlife movements.

BIO-7: Limit the amount of construction days, as feasible, to conduct work on existing culverts to reduce temporary disruption of wildlife movements.

BIO-8: (CEQA Mitigation Measure): To mitigate for impacts to wildlife connectivity, a wildlife underpass structure and directional fencing will be constructed within the Keene Pavement project limits.

Wetlands and Other Waters

The following voidance and minimization measures will be implemented to reduce additional impacts to aquatic resources and riparian vegetation that could occur during construction:

BIO-9: Environmentally Sensitive Area (ESA) fencing will be placed around the aquatic resources at the boundary of where temporary and permanent impacts will potentially occur.

BIO-10: Environmentally Sensitive Area fencing will also be placed at the boundary of where temporary and permanent impacts will potentially occur to the riparian corridor of Caliente Creek.

BIO-11: A full-time biological monitor will be onsite for all activities occurring in aquatic resource and riparian habitats and include installation and enforcement of the Environmentally Sensitive Area.

BIO-12: The biological monitor will also provide a Biological Resource Information Program (BRIP) to all construction personnel about the Environmentally Sensitive Area fencing, permits, and the resources present onsite.

BIO-13: Implementation of water pollution control Best Management Practices will occur prior to and during construction to protect all aquatic resources and riparian habitats from discharge of water or substances into resources.

BIO-14: No staging can occur within 150 feet of aquatic resources or riparian habitats.

BIO-15: All required avoidance and minimization measures included in resource permits from the Regional Water Quality Control Board, California Department of Fish and Wildlife and U.S. Army Corps of Engineers (if a 404 permit is determined to be required in the project's design phase) will be implemented.

BIO-16: Onsite riparian vegetation plantings are possible, but site conditions make access difficult for long-term monitoring. This will be negotiated with resource agencies.

BIO-17: Onsite erosion control seeding will occur in temporary and permanently impacted areas with native seed mix. Monitoring of seed propagation and success may be required by resource agencies, depending on permit requirements.

BIO-18 (CEQA Mitigation Measure): Permanent impacts to wetlands, riparian vegetation, and aquatic resources will be reviewed by resource agencies as part of the permitting process during the project's design phase. The proposed strategy to mitigate for these impacts would be to purchase in-lieu fee credits or mitigation bank credits from an approved mitigation bank, at a ratio negotiated with the resource agencies. The specific bank and amount of credits required will need to be determined once impact areas are quantified.

Plant Species

The following measures will be implemented to avoid and minimize any potential impacts to special-status plant species:

BIO-19: Pre-construction surveys will be conducted during peak blooming season 72 hours prior to construction if the construction schedule allows. If not, these surveys will be completed the spring prior to construction start.

BIO-20: If special-status plant species are found within the Biological Study Area or adjacent habitat, Environmentally Sensitive Area fencing will be installed and a 5- to 10-foot no-work buffer may be implemented around the plant.

Animal Species

The following additional avoidance and minimization measures will also apply to all birds that are protected by the Migratory Bird Treaty Act and California Fish and Game Code Section 3503:

BIO-21: Pre-construction surveys of suitable habitat in the Project Impact Area will be implemented by a qualified biologist for migratory and nesting birds within 14 days for work occurring during the nesting season (February 15 to September 1) to identify active nests in the Project Impact Area.

BIO-22: In the event that nesting birds or active nests are observed in the Project Impact Area, a qualified biological monitor will be required onsite during all construction activities until nesting has been completed as determined by the biologists.

BIO-24: In the event that nesting birds or active nests are observed in the Biological Study Area, a protective no-disturbance buffer of at least 250 feet for nesting songbirds, 500 feet for nesting raptors and nesting special-status species and 1/2 mile for nesting Swainson's hawks will be installed under supervision of a qualified biologist in coordination with the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service.

BIO-25: The qualified biologist will determine the size of the buffer in coordination with the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service and will determine when nesting has been completed and the buffer may be removed.

BIO-26: Biological Resource Information Program (BRIP) training will be provided to all construction personnel about sensitive biological resources and habitats, including nesting and migratory birds.

Threatened and Endangered Species

Threatened and Endangered Plant Species

The following measures will be implemented to avoid and minimize any potential impacts to threatened and endangered plant species:

BIO-27: Pre-construction surveys will be conducted during peak blooming season 72 hours prior to construction if the construction schedule allows. If not, these surveys will be completed the spring prior to construction start.

BIO-28: If special-status plant species are found within the Biological Study Area or adjacent habitat, Environmentally Sensitive Area fencing will be installed, and a 5-to 10-foot no-work buffer may be implemented around the plant.

Golden Eagle

To ensure avoidance of temporary or permanent impacts to the golden eagle, the following avoidance and minimization measures will be implemented:

BIO-29: A pre-construction survey will be conducted if construction is scheduled to begin within the breeding season (February 1 to August 31). Surveys will be conducted throughout the Project Impact Area and a 500-foot buffer in areas where there is a potential for nesting to occur. The survey should include all areas that are suitable for the establishment of nests, such as trees, power poles, and cliffsides.

BIO-30: If nesting golden eagles are identified during the surveys, a no-work buffer of 500 feet may be implemented around active nests. Avoidance buffers may be reduced if a qualified biologist determines that construction activities are not affecting nest building, the rearing of young, or otherwise affecting breeding behaviors.

BIO-31: No construction activities may occur within a no-work buffer until it is determined by a qualified biologist that the young have fledged. This typically occurs by early July or early September unless otherwise determined by a qualified biologist.

Swainson's Hawk

To ensure avoidance of temporary or permanent impacts to the Swainson's hawk, the following avoidance and minimization measures will be implemented:

BIO-32: Pre-construction surveys will be conducted where previous observations were noted in previous survey reports. The surveys will be conducted by a qualified biologist within 14 days and again 48 hours of construction start date if construction activities occur during the nesting season (March to mid-August).

BIO-33: If an active nest is found within the Project Impact Area, a no-work buffer will be implemented in coordination with California Department of Fish and Wildlife within ½ mile of construction activities to ensure no impacts occur that would result in nest failure or abandonment. A full-time biological monitor will be onsite to determine when nesting activities and fledging of young have been completed. The no-work buffer may be decreased in size only in coordination with the California Department of Fish and Wildlife and the determination of a qualified biologist. Take will be avoided.

BIO-34: If an active Swainson's hawk nest is found within the Biological Study Area or within a ½ mile buffer of the project impact area, a qualified biological monitor will be required onsite during all construction activities within ½ mile of the nest until nesting has been deemed completed by the biologist. A no-work buffer may be implemented by a qualified biologist in coordination with the California Department of Fish and Wildlife if deemed appropriate. The qualified biologist will determine the size of the buffer and will determine when nesting has been completed and the buffer may be removed.

BIO-35: Biological Resource Information Program (BRIP) training will be provided to all construction personnel about sensitive biological resources, including the Swainson's hawk.

Southwestern Willow Flycatcher

To ensure avoidance of temporary or permanent impacts to the southwestern willow flycatcher, the following avoidance and minimization measures will be implemented:

BIO-36: Pre-construction surveys of southwestern willow flycatcher habitat within the Project Impact Area will be conducted by a qualified biologist within 14 days and again 48 hours before construction start if construction activities are to occur during the nesting season (late May through early June) to identify southwestern willow flycatchers in the Project Impact Area.

BIO-37: If an active nest is found within the Project Impact Area, a no-work buffer will be implemented in coordination with the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service within ¼ mile of construction activities to ensure no impacts occur that would result in nest failure or abandonment. A full-time biological monitor will be onsite to determine when nesting activities and fledging of young have been completed. The no-work

buffer may be decreased in size only in coordination with the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service and the determination of a qualified biologist. Take will be avoided.

BIO-38: In the event that a southwestern willow flycatcher nest is observed in the Biological Study Area or within a ¼ mile buffer of the Project Impact Area, a qualified biological monitor will be required onsite during all construction activities within ¼ mile of the observation. A no-work buffer may be implemented by a qualified biologist in coordination with the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service if deemed appropriate. The qualified biologist will determine the size of the buffer and will determine when nesting has been completed and the buffer may be removed.

BIO-39: Biological Resource Information Program (BRIP) training will be provided to all construction personnel about sensitive biological resources, including the southwestern willow flycatcher.

Foothill Yellow-legged Frog

To ensure avoidance of temporary or permanent impacts to the foothill yellow-legged frog, the following avoidance and minimization measures will be implemented:

BIO-40: A qualified biologist will conduct a pre-construction survey of habitat within the Project Impact Area for foothill yellow-legged frogs (adults, subadults, tadpoles or egg masses) 3 to 5 days prior to construction within foothill yellow-legged frog habitat (wetted tributaries and cooler riparian habitat).

BIO-41: If construction activities are to occur in or near surface water, a biological monitor will inspect the work area daily before work begins and during construction.

BIO-42: Biological Resource Information Program (BRIP) training will be provided to all construction personnel about sensitive biological resources and habitats, including the foothill yellow-legged frog.

BIO-43: If an individual or eggs are found within the Biological Study Area or Project Impact Area during the pre-construction surveys, a no-work buffer will be implemented according to a qualified biologist recommendation in coordination with the California Department of Fish and Wildlife.

BIO-44: If an individual or eggs are found within the Project Impact Area and impacts cannot be avoided, work should be halted and coordination with the California Department of Fish and Wildlife will be initiated to determine if an Incidental Take Permit is needed.

Tehachapi Slender Salamander

To ensure avoidance of temporary or permanent impacts to the Tehachapi slender salamander, the following avoidance and minimization measures will be implemented:

BIO-45: A qualified biologist will conduct a pre-construction survey of the Project Impact Area where impacts are mapped within 3 to 5 days prior to construction activities.

BIO-46: Biological Resource Information Program (BRIP) training will be provided to all construction personnel about sensitive biological resources and habitats, including the Tehachapi slender salamander.

BIO-47: If an individual or eggs are found within the Biological Study Area or Project Impact Area during the pre-construction surveys, a no-work buffer will be implemented according to a qualified biologist recommendation in coordination with the California Department of Fish and Wildlife.

BIO-48: If an individual or eggs are found within the Project Impact Area and impacts cannot be avoided, work should be halted and coordination with the California Department of Fish and Wildlife will be initiated to determine if an Incidental Take Permit is needed.

BIO-49: With implementation of avoidance and minimization efforts, the need for compensatory mitigation is not anticipated for impacts to Federally Or State listed plant or animal species.

Invasive Species

To prevent the spread of invasive plants from outside of the project area to the project site, the following measures will be implemented:

BIO-50: Wash all vehicles and heavy equipment, including tires and undercarriage, and hand-held tools such as shovels and rakes, that have been used offsite before bringing them onto the project site.

BIO-51: Vacuum and clean the interior of vehicles and heavy equipment that have been used offsite before bringing them onto the project site.

BIO-52: Clean personal gear and clothing, including footwear, that have been worn offsite before bringing them onto the project site.

BIO-53: Do not transport soil or other fill material from offsite locations unless it is known that they do not contain viable seed material.

BIO-54: Use only approved seeds and seedlings when restoration is required. Prepare soils appropriately to encourage new seeds and plants to survive.

BIO-55: Biological Resource Information Program (BRIP) training will be provided to all construction personnel about preventing spread of invasive species.

Appendix C. List of Technical Studies (Bound separately and available upon request)

Air, Noise, Hazardous Waste, Water Quality and Paleontology Study Memo. Caltrans. September 2022.

Climate Change Analysis October 2022.

Community Impacts: Memo to File. Caltrans. November 2022.

Cumulative Impacts Analysis. Caltrans. January 2023.

Historical Property Survey Report. Caltrans. January 2023.

Natural Environment Study. Caltrans. September 2022.

Vehicle Miles Traveled Screening Memo. Caltrans. March 2022.

Visual Impact Analysis. Caltrans. January 2023.

To obtain a copy of one or more of these technical studies/reports or the Initial Study/Environmental Assessment, please send your request to:

Kristopher Bason
Environmental Scientist
California Department of Transportation, District 9
500 South Main Street, Bishop, California 93514

Or send your request via email to: Kristopher.Bason@dot.ca.gov
Or call: 760-784-4056

Please provide the following information in your request:

58 Truck Climbing Lane Project

On State Route 58, approximately 10 miles west of Tehachapi

09-KER-58-76.3/79.8

Project ID 0919000011/EA 09-37960