

Pismo Congestion Relief Pilot Project

In San Luis Obispo County, from the San Luis Obispo Creek Bridge
to the Railroad Overhead in Pismo Beach

05-SLO-101 PM 16.0/R22.5

05-1G680/0515000063

Draft Environmental Impact Report/ Environmental Assessment and Section 4(f) Evaluation



Prepared by the
State of California Department of Transportation
and San Luis Obispo Council of Governments

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

September 2020



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 Environmental Impact Report/Environmental Assessment, which examines the potential environmental impacts of the alternatives being considered for the proposed project in San Luis Obispo, California. Caltrans is the lead agency under the National Environmental Policy Act (NEPA). Caltrans is also the lead agency under the California Environmental Quality Act (CEQA). The document explains why the project is being proposed, the alternatives being considered for the project, the existing environment that 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 the document. It can be accessed from the project web page:
<https://dot.ca.gov/caltrans-near-me/district-5/district-5-current-projects/hwy-101-pismo-congestion-relief>
- Attend the public meeting in October. Date, time, and access information for the meeting will be posted on the project web page.
- We'd like to hear what you think. If you have any comments regarding the proposed project, please attend the public hearing and/or send your written comments to Caltrans by the deadline.
- Submit comments via U.S. mail to: Lara Bertaina, California Department of Transportation, 50 Higuera, San Luis Obispo, California 93401 or via email to: Lara.Bertaina@dot.ca.gov
- The deadline for comments is: November 17, 2020.

What happens next:

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

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From the San Luis Obispo Creek Bridge to the Railroad Overhead
in Pismo Beach, San Luis Obispo County

**DRAFT ENVIRONMENTAL IMPACT REPORT
/ENVIRONMENTAL ASSESSMENT
and Section 4(f) Evaluation**

Submitted Pursuant to: Division 13, California Public Resources Code
42 U.S. Code 4332(2)(C)
and 49 U.S. Code 303

THE STATE OF CALIFORNIA
Department of Transportation
and
San Luis Obispo Council of Governments

Responsible Agencies: National Marine Fisheries Service, U.S. Army Corps
of Engineers, U.S. Fish and Wildlife Service, California Transportation
Commission, California Department of Fish and Wildlife, Central Coast
Regional Water Quality Control Board, City of Pismo Beach, County of San
Luis Obispo, California Coastal Commission



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NEPA and CEQA Lead Agency

09/18/2020

Date

Summary

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 Memorandum of Understanding) with the Federal Highway Administration. The NEPA Assignment Memorandum of Understanding became effective October 1, 2012 and was renewed on December 23, 2016 for a term of five years. In summary, Caltrans continues to assume Federal Highway Administration responsibilities under NEPA and other federal environmental laws in the same manner as was assigned under the Pilot Program, with minor changes. With NEPA Assignment, the Federal Highway Administration assigned and Caltrans assumed all the U.S. Department of Transportation (U.S. DOT) Secretary’s responsibilities under NEPA. This assignment includes projects on the state highway system and Local Assistance projects off the state highway system within the State of California, except for certain categorical exclusions that the Federal Highway Administration assigned to Caltrans under the 23 U.S. Code 326 Categorical Exclusion Assignment Memorandum of Understanding, projects excluded by definition, and specific project exclusions.

Caltrans and the San Luis Obispo Council of Governments are proposing a 7-year pilot operational improvement project to address traffic delays that occur during periods of high traffic volumes on the southbound lanes of US 101 through Shell Beach and Pismo Beach. The proposed project would widen the inside shoulder of the highway from the vicinity of San Luis Obispo Creek to the railroad overhead in Pismo Beach to serve as a travel lane strictly during periods of heavy traffic volumes. The California Vehicle Code prohibits general purpose travel on the shoulder of state highways. Therefore, the project is being proposed as a pilot project during its initial 7 years of operation, after which Caltrans would pursue legislative approval to make the part-time travel lane a permanent feature. If approval is not granted, the part-time travel lane would likely be reverted to a 14-foot-wide full-time shoulder. The project also proposes a new park-and-ride lot in Pismo Beach. Soundwalls are also being considered as a noise abatement feature.

Summary of Potential Impacts from Alternatives

Potential Impact	Alternative 1	Alternative 1 variation	Alternative 2	No-Build Alternative	Soundwalls
Coastal Zone	Potentially inconsistent with policies related to visual quality and noise.	Same as for previous alternative.	Same as for previous alternative.	Existing is in compliance with all coastal plans.	Would be inconsistent with policies that protect coastal views.
Traffic and Transportation	Congestion and traffic speed would improve.	Same as for previous alternative.	Same as for previous alternative.	Southbound traffic congestion would continue to deteriorate.	No impact.
Visual/Aesthetics	Significant impacts from urbanization, increased hardscape, and various other modern freeway components, loss of vegetation.	Similar to Alternative 1.	Similar to Alternative 1, minus additional retaining wall. Also, shorter length with less median barrier.	No impact.	Southbound wall locations would block ocean views, create unexpected hardscape. Northbound wall location would have minimal impacts.
Cultural Resources	Potential impacts to 2 known resources.	Same as for previous alternative.	Same as for previous alternative.	No impact.	One wall location would impact a resource.
Hydrology and Floodplain	No impact.	No impact.	No impact.	No impact.	No impact.
Water Quality and Storm Water Runoff	Additional 5 acres of new impervious surface.	Same as for previous alternative.	Same as for previous alternative.	No impact.	No impact.
Air Quality	Improvement expected as a result of increased traffic speeds.	Same as for previous alternative.	Same as for previous alternative.	Potential increase in emissions with additional congestion.	No impact.
Noise	Levels would increase from 1 to 8 decibels; some locations exceed noise abatement criteria.	Same as for previous alternative.	Same as for previous alternative.	No impact.	Noise levels for residents adjacent to a soundwall would experience a reduction in noise levels.
Natural Communities	Permanent impacts to coastal scrub:	Same as for previous alternative.	No permanent impacts;	No impact.	No impact.

Potential Impact	Alternative 1	Alternative 1 variation	Alternative 2	No-Build Alternative	Soundwalls
	506 square feet; temporary impacts: 2.5 acres.		temporary impacts to coastal scrub: 2.5 acres.		
Wetlands and Other Waters	Other waters permanent impacts: 9 square feet; temporary impacts: 4,600 square feet.	Same as for previous alternative.	Same as for previous alternative.	No impact.	No impact.
Animal Species	Precautionary construction measures added for white-tailed kite and western pond turtle.	Same as for previous alternative.	Same as for previous alternative.	No impact.	No impact.
Threatened and Endangered Species	Protective construction measures added due to presence of California red-legged frog, steelhead, and tidewater goby.	Same as for previous alternative.	Same as for previous alternative.	No impact.	No impact.
Invasive Species	Control measures added for during and post construction.	Same as for previous alternative.	Same as for previous alternative.	No impact.	No impact.
Construction	Excessive noise; traffic impacts.	Same as for previous alternative.	Same as for previous alternative.	No impact.	Excessive noise; traffic impacts.
Cumulative Impacts	Contributes to the decline of visual quality and historical landscape.	Same as for previous alternative.	Same as for previous alternative.	No impact.	Two locations would contribute to decline of visual quality; one location would contribute to decline of historical landscape.

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Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) and the San Luis Obispo Council of Governments (Council of Governments) are proposing an operational improvement project to address traffic delays that occur during periods of high traffic volumes on the southbound lanes of US 101 through Shell Beach and Pismo Beach. The proposed project would widen the inside shoulder of the highway from the vicinity of San Luis Obispo Creek to the railroad overhead in Pismo Beach to serve as a travel lane strictly during periods of heavy traffic volumes. The project also proposes a new park-and-ride lot in Pismo Beach.

In December 2014, the Council of Governments adopted its *2014 US 101 Corridor Mobility Master Plan* (Corridor Plan) after substantial public engagement. The two most frequently referenced issues were the southbound truck lane merge near Spyglass Drive and the lack of bicycle connectivity between downtown Pismo Beach and Five Cities Drive. The Corridor Plan identified the project area as the most congested segment on the US 101 corridor in San Luis Obispo County. It also identified the need for better access to park-and-ride lots.

In January 2015, the Council of Governments and Caltrans entered into a cooperative agreement to study six alternatives that were created from combinations of features recommended in the Corridor Plan. The resultant project is being funded through the State Transportation Implementation Program, the federal Congestion Mitigation and Air Quality Improvement Program, and the Regional Surface Transportation Program for the year 2024.

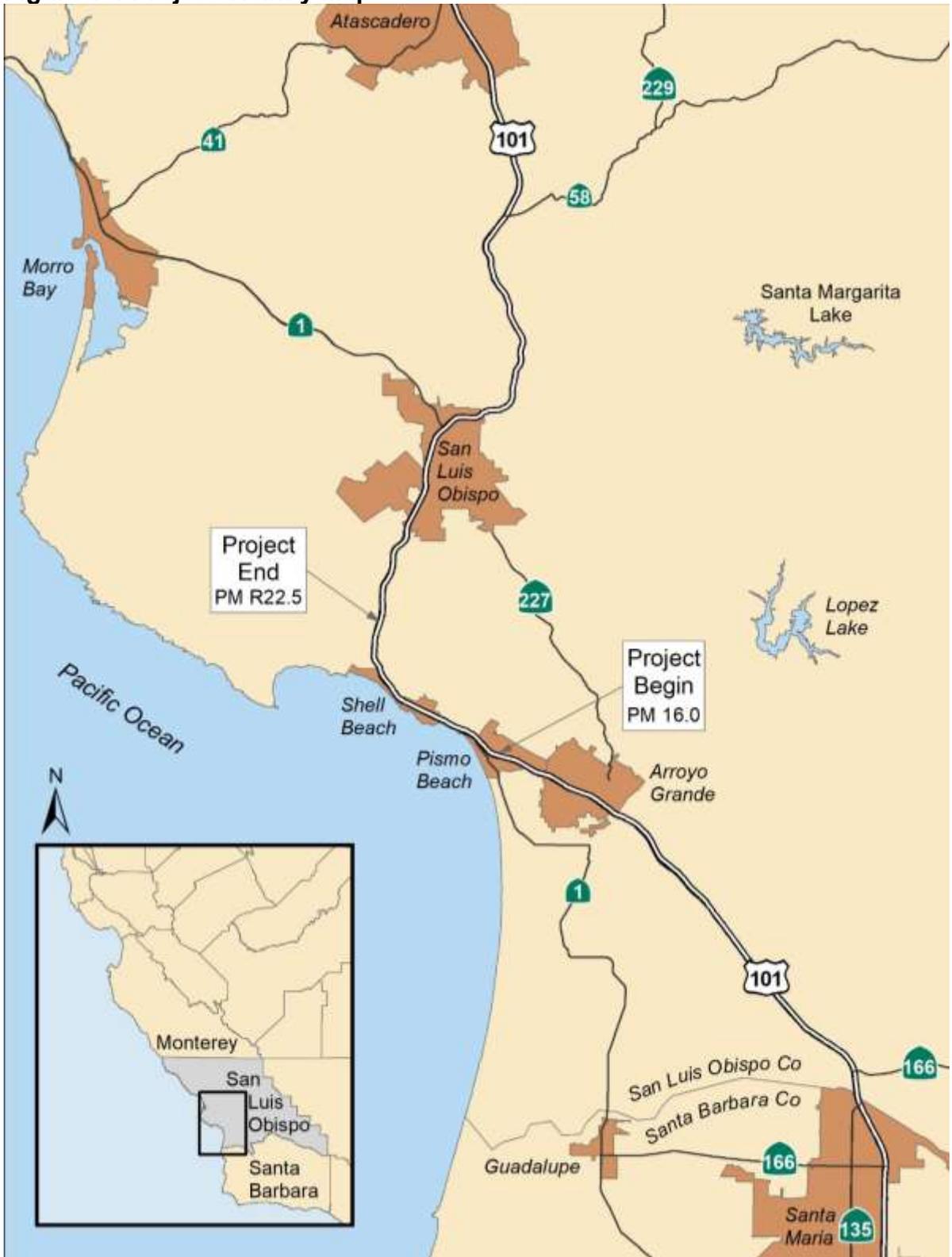
The California Vehicle Code prohibits general purpose travel on the shoulder of state highways. Therefore, the project is being proposed as a pilot project during its initial 7 years of operation. At the end of the 7-year evaluation period, Caltrans would pursue legislative approval to make the part-time travel lane a permanent feature. If approval is not granted, the part-time travel lane would likely be reverted to a full-time, 14-foot-wide shoulder.

1.2 Purpose and Need

1.2.1 Purpose

The purpose of the project is to reduce travel delays that diminish the efficient operation of US 101 through Shell Beach and Pismo Beach in the southbound direction during periods of heavy traffic volumes. See Figure 1-1.

Figure 1-1 Project Vicinity Map



1.2.2 Need

US 101 within the project limits cannot efficiently manage existing traffic volumes that accumulate when large numbers of drivers exit the City of San Luis Obispo within a short period of time. This typically happens during the evening work commute, on summer weekends, and when there are popular events in the communities to the south. The result is long lines of slow or stopped traffic from south of San Luis Obispo to Pismo Beach for the period of time it takes travelers to reach their destination at these southern locations.

Traffic volumes within the project limits increase steadily throughout the day until about 5:00 p.m., at which time they begin to drop off rapidly. Slow and variable traffic speeds, frequently caused by weaving movements, prevent traffic from flowing in an efficient and consistent manner. These variable speeds are exacerbated when traffic is heavy and changing lanes becomes more challenging. The truck-climbing lane merge point and the multiple onramps and off-ramps contribute to these weaving movements. The consequence of heavy flows at variable speeds is that the general speed of traffic slows substantially and backups occur, causing delays to the traveling public. The project has independent utility and logical termini.

1.3 Project Description

US 101 is the major coastal north–south route that links the Greater Los Angeles Area, the Central Coast, the San Francisco Bay Area, and the North Coast (Redwood Empire). For the southbound traveler, the views afforded upon reaching Shell Beach within the project limits would be the first coastal views since leaving San Francisco, over 240 miles to the north. This segment of US 101 was listed as eligible to be included in the State Scenic Highway System by a legislative action, but was never officially designated.

The existing facility is a four-lane divided freeway with two 12-foot-wide general travel lanes in both the northbound and southbound direction. The southbound lanes have an inside shoulder that varies from 5 feet in some locations to as much as 19 feet in others. (The standard width of the inside shoulder for this type of facility is 10 feet.) The outside shoulder width varies between 8 feet and the standard 10 feet. The northbound and southbound lanes are separated by an unpaved vegetated median of variable width that includes a mix of median barrier types: concrete barrier, single three-beam barrier, and double three-beam barrier. The difference in elevation between the northbound and southbound lanes can vary from a negligible amount to about 20 feet, with the northbound lanes generally being at a higher elevation. A 600-foot-long truck-climbing lane begins just south of the San Luis Obispo Creek bridge and ends about 700 feet prior to the Spyglass Drive off-ramp. See Figure 1-2 for the location of the proposed project.

Figure 1-2 Project Location Map



The proposed project would create a new southbound part-time travel lane as a 7-year pilot project on US 101 through Shell Beach and Pismo Beach, as well as add a park-and-ride lot at Mattie Road and Route 1 (Price Street). Throughout the project limits, the part-time travel lane would function as a 14-foot inside shoulder when not in use, and a 12-foot lane with 2-foot shoulder when open for travel. The lane would have a single entry point at the north end and a single exit at the south end; lane changing outside of these locations would not be allowed. The periods when the lane would be open for travel would likely be on a regular schedule to address daily afternoon congestion, as well as unique times when traffic is heavy due to specific local events. After 7 years of operation as a pilot project, Caltrans would pursue legislative approval to make the part-time travel lane a permanent feature. If approval is not granted, the part-time travel lane would likely be reverted to a 14-foot-wide full-time shoulder. As part of the project, Caltrans is also considering lengthening the existing truck-climbing lane or eliminating it altogether.

1.4 Project Alternatives

Under consideration are two build alternatives, one of which includes a variation on the truck-climbing lane, and the No-Build Alternative. The build alternatives are identical from the Spyglass Drive undercrossing to the Union Pacific railroad overhead. They differ mostly on their starting point at the northern end of the project limits and on the location of the part-time travel lane within the corridor up to the Spyglass Drive undercrossing.

1.4.1 Build Alternatives

Common Design Features of the Build Alternatives

All build alternatives include creating an additional general travel lane from the Spyglass Drive undercrossing to the Union Pacific railroad for use during peak traffic periods. The lane would be created by widening the inside (left) shoulder to 14 feet (except in the vicinity of the Pismo Rock), which would serve as a 12-foot general-purpose lane with 2-foot shoulder when open to traffic. To avoid impacts to the Rock, widening at this location would occur to the outside (right side), slightly realigning the roadway around the geologic feature. To accommodate this outside widening, an approximately 1,200-foot-long retaining wall would be constructed between the freeway and Price Street, varying in height from about 5 to 15 feet tall. The wall would be topped by 36-inch-tall concrete safety barrier.

All build alternatives would require widening four bridges within the project limits to accommodate the additional lane width and updating the inside bridge railing to the current standard: at Spyglass Drive (the Shell Beach undercrossing), at Mattie Road (the North Pismo separation), at the

Wadsworth Avenue undercrossing, and at Pismo Creek Bridge. The slopes under the bridges would be paved at the Shell Beach undercrossing and the Wadsworth undercrossing.

With all build alternatives, 42-inch-tall concrete median barrier would be constructed or reconstructed between the northbound and southbound lanes from about 0.3 mile north of Spyglass Drive to the end of the project limits. In addition, overhead lane-use control signals showing either a red X (“X”) for “CLOSED” or a green ↓ (“down arrow”) for “OPEN” would be installed at 2,300-foot-intervals along the length of the part-time lane, either behind the concrete barrier or integrated into it. Figure 1-3 shows a conceptual sketch of a sample lane-use control signal.

Figure 1-3 Sample of Lane-Control Signal



All build alternatives include a park-and-ride lot along Route 1 (Price Street) between Mattie Road and the terminus of the Price Street off-ramp. This area is already being used as an informal parking area. As a safety enhancement, the proposed project would also include at least three maintenance vehicle pull-out areas—paved areas off the roadway shoulder where maintenance vehicles can safely park—and extended gore paving at the ramps. The California Highway Patrol has also requested paved pull-outs with acceleration areas where they can monitor the part-time travel lane.

Unique Features of the Build Alternatives

Alternative 1

This alternative begins lane widening for the part-time travel lane on the inside shoulder about 0.3 mile north of the off-ramp for Spyglass Drive. This is also where the merge arrows for the truck-climbing lane currently begin. As the truck-climbing lane terminates, the part-time travel lane would begin; there would be no change to the truck-climbing lane. Because of the elevation difference between the northbound and southbound lanes, a new retaining wall would replace the existing vegetated slope in the median about 0.5 mile

north of Spyglass Drive, at about the point that the part-time travel lane would begin. The wall would be about 500 feet long and up to 15 feet tall.

Truck-climbing Lane Variation on Alternative 1

With this variation on Alternative 1, the truck-climbing lane would be extended about another 0.5 mile, ending just before the bridge at Spyglass Drive. This would create four lanes of southbound traffic along this portion. All other features described for Alternative 1 would remain the same.

Alternative 2

This alternative would shift the existing lanes such that the truck-climbing lane would be converted to a general-purpose lane and the inside (number 1) lane would become the part-time travel lane. Widening for the part-time travel lane on the inside shoulder would begin just south of the San Luis Obispo Creek Bridge but would quickly merge into the existing lane configuration. The existing three-lane configuration would be maintained up to where the truck-climbing lane currently begins to terminate. At this point, widening of the inside shoulder would begin and the part-time travel lane would shift to this newly constructed lane. This alternative would include a 42-inch-tall concrete median barrier beginning at the south end of San Luis Obispo Creek Bridge and continuing for about 0.3 mile.

Transportation Demand Management and Transportation System Management and Operations Alternatives

The proposed project is also a type of Transportation Demand Management and Transportation System Management and Operations alternative.

Transportation Demand Management is a collection of strategies aimed at maximizing traveler options. Providing travelers with travel choices—such as work location, route, time of travel, and mode of travel—can improve travel time reliability. The park-and-ride component of the proposed project is a Transportation Demand Management strategy.

Transportation System Management and Operations incorporates lower-cost strategies and technological advances to reduce impacts to the transportation system. The part-time travel lane is the main Transportation System Management and Operations component for the proposed project. Other components include installing closed circuit television to video monitor the real-time operations of the part-time travel lane and a vehicle detection system to monitor traffic flow and speed. A fiber optic infrastructure network will also be installed to allow fast communication of intelligent transportation system elements to and from the Transportation Management Center, where Caltrans and the California Highway Patrol monitor day-to-day traffic functions throughout the area.

In March 2020, the Council of Governments implemented the Freeway Service Patrol, a Transportation Demand Management component that is a joint project of the Council of Governments, Caltrans, and the California Highway Patrol. The service uses the forces of the California Highway Patrol and contracted towing companies to patrol US 101 from Los Osos Valley Road in San Luis Obispo to the North 4th Street interchange in Pismo Beach on a regular basis to keep traffic moving. The service, funded by the Council of Governments, helps locate and remove disabled vehicles or debris that are blocking traffic. The service would also be employed to check the part-time travel lane prior to its opening each day to ensure it was clear and fully operational.

1.4.2 No-Build (No-Action) Alternative

Taking no action at this time would perpetuate the existing traffic delays throughout this corridor. Congestion, drive times, and resulting air quality could worsen as the population increases, and backups during peak periods could extend farther into the city of San Luis Obispo, affecting local streets. Some drivers would likely detour to other routes, such as Route 227 or Orcutt Road, increasing traffic volumes on those routes. Implementation of Senate Bill 743 has seen a new emphasis on alternative methods of addressing traffic demand, therefore it is possible that no congestion-relief freeway project at this location would be funded in the future. The focus is turning more toward regional solutions addressed by the local governments through the *Regional Transportation Plan/Sustainable Communities Strategy* with expanded options for transit service, rideshare opportunities, and transportation choices, as well as incentives for travelers to use alternative transportation, although funding for these remains challenging. Furthermore, with the advent of COVID-19 shelter-at-home orders, traffic demand has been reduced due to many commuters having switched to working from home. With that framework now in place, it is possible that future commuting needs could be greatly reduced from previous projections.

1.5 Comparison of Alternatives

An extensive traffic study was conducted to evaluate various options for their effectiveness in reducing travel delays. A Pismo sub-area cut-out of the Council of Governments' Traffic Demand Management model was developed to forecast traffic demand. The sub-area Pismo model was developed based on 2018 land use data and validated to 2018 traffic counts. The most recent housing and employment projections for San Luis Obispo County were used as inputs to model future demand.

Several analysis techniques were used to provide the data used to quantify and/or monetize the benefits of each alternative. The performance measures consisted of factors including, but not limited to:

- average travel time
- 95th percentile travel time index
- average speed
- travel delay
- number of vehicle trips
- travel distance
- average vehicle occupancy
- average density by segment
- predicted number of collisions by type

These measures were used to compare and evaluate the operational and safety benefits of each alternative.

Traffic counts and speed data were collected in April 2018 on the southbound mainline and on all on-ramps and off-ramps within the project limits. The data was processed for the weekday (Wednesday and Thursday) and weekend (Friday and Saturday) peak period from 2:00 p.m. to 7:00 p.m. in 15-minute increments.

Opening year analysis assumed year 2026 conditions; design year was determined to be 2046. Travel demand modeling determined that a 4 percent increase in projected traffic demand would occur with all build alternatives due to traffic diverted from Route 227; therefore, the build alternatives reflect greater traffic volumes than the No-Build Alternative. According to the modeling, freeway operations with all the build alternatives performed better than with the No-Build Alternative. These improvements consist of travel delay reduction, buffer time reduction (a reduction in the additional time a motorist needs to ensure they arrive at their destination at the expected time), improved vehicular flow/speed, and collision reduction through the corridor.

Tables 1-1 through 1-4 show analysis results for expected travel times and speeds for all alternatives for a 6-mile southbound segment from the Avila Beach Drive off-ramp to the Five Cities Drive off-ramp. The information is broken down by opening year (2026) and design year (2046) as well as for weekday and weekend performance. Data on existing conditions is also provided for comparison purposes.

Table 1-1 Year 2026 Weekday Performance Measures

Alternative	Average Travel Time (minutes/vehicle)	Average Speed (miles/hour)	Buffer Time (minutes)	Average Level of Service
Existing	5.9	41.7	11	D
No-Build	6.5	37.4	12.4	E
1	4.8	64.1	9.1	C
1 variation	4.9	64.1	9.4	C
2	4.8	64.5	9.1	C

Table 1-2 Year 2026 Weekend Performance Measures

Alternative	Average Travel Time (minutes/vehicle)	Average Speed (miles/hour)	Buffer Time (minutes)	Average Level of Service
Existing	5.8	39.5	11.6	D
No-Build	6.2	36.9	12.4	E
1	4.6	63.9	9.2	C
1 variation	4.7	63.9	9.5	C
2	4.7	64.3	9.4	C

Table 1-3 Year 2046 Weekday Performance Measures

Alternative	Average Travel Time (minutes/vehicle)	Average Speed (miles/hour)	Buffer Time (minutes)	Average Level of Service
No-Build	7.1	32.4	13.5	E
1	4.8	63.4	9.2	C
1 variation	4.8	63.4	9.2	C
2	4.8	63.9	9.1	C

Table 1-4 Year 2046 Weekend Performance Measures

Alternative	Average Travel Time (minutes/vehicle)	Average Speed (miles/hour)	Buffer Time (minutes)	Average Level of Service
No-Build	6.5	33.7	13.1	E
1	4.6	62.1	9.3	C
1 variation	4.8	62.1	9.6	C
2	4.7	62.6	9.5	C

Under the No-Build condition, by 2026 motorists can expect severe bottlenecks within the project limits beginning around 2:30 p.m. in the vicinity of Spyglass Drive and the North Price Street off-ramp. Over the next hour, congestion would continue to build, creating backups on the southbound onramps and potentially creating gridlock at adjacent intersections. This can often lead to queue jumping, in which motorists use sequential off-ramps and on-ramps and/or frontage roads to bypass stopped traffic. The congested conditions are predicted to last until about 6:45 p.m.

By 2046, traffic backups within the project limits are predicted to begin by 2:00 p.m. and build continuously throughout the afternoon. Traffic volumes are expected to be so inflated that the freeway and ramps would no longer be able to carry them. Motorists would be forced to use alternative methods to avoid the congestion, which could mean leaving at a different time, taking another route, or cancelling the trip altogether.

Under Alternative 1, at opening year, no bottlenecks are predicted, but there would be some traffic slowing near the end of the existing truck-climbing lane and at the Dolliver Street off-ramp during the weekday between about 4:30 p.m. and 5:00 p.m. On the weekends, traffic slowing would potentially occur only at the end of the truck-climbing lane. The Alternative 1 truck-climbing lane variation would exhibit similar results, but would start about an hour

earlier in the day (though for about the same duration). Although this design would extend the truck-climbing lane beyond its current merge point, traffic is still predicted to slow at this location because of the uphill grade. This location also coincides with the first view of the ocean, possibly causing drivers to slow, which could be exacerbating the situation.

Under Alternative 2, effects on traffic would be similar to that expected with the Alternative 1 truck-climbing variation, with the addition of another brief period of slowing at the Dolliver Street off-ramp beginning around 2:45 p.m. on weekdays.

By year 2046, traffic is still predicted to move relatively smoothly through the project limits with all the build options, but the chance of a bottleneck near Dolliver Street becomes more likely, as does one at the end of the project limits, where Price Street joins US 101.

1.6 Alternatives Considered but Eliminated from Further Discussion

Numerous individual traffic management components were evaluated as part of the preliminary design process, either alone or in combination, for their contribution to improving traffic flow. Table 1-5 describes the components that either failed to show an operational improvement or otherwise were rejected.

Table 1-5 Rejected Design Options

Component	Reason for Rejection
Extend existing truck-climbing lane to exit directly into the Shell Beach Road off-ramp	This would create a “trap lane” and would maintain truck weaving for those not wanting to exit the freeway.
Add a third general-purpose full-time travel lane or a high-occupancy vehicle lane	Traffic demand for additional capacity occurs during only portions of the day; the existing configuration manages traffic at an acceptable level the rest of the time. This design meets the purpose and need of the project, but would have excessive cost and greater community and environmental impacts.
Reconfigure southbound ramps to add an on-ramp at Mattie Road, close the Dinosaur Caves Park on-ramp, and construct an auxiliary lane between the new Mattie Road on-ramp and existing Route 1/Price Street off-ramp	This arrangement would increase commute times.
End the part-time travel lane just prior to the Pismo Creek Bridge	This arrangement would increase commute times and create a bottleneck at the merge point.
End the part-time travel lane just past the Pismo Creek Bridge	This arrangement showed no improvement in traffic management over the proposed

Component	Reason for Rejection
	alternatives, but would require widening the Pismo railroad overhead, with subsequent added costs and impacts.
Allow continuous entering and exiting of the part-time travel lane	Most of the traffic using the southbound lanes in the afternoon is exiting the freeway south of Pismo Beach. Moving those vehicles to their own lane reduces the weaving maneuvers that cause traffic disturbances.
Build a reversing lane in the median	There is insufficient median width for a standard design. It would also adversely impact Pismo Rock.

1.7 Permits and Approvals Needed

Table 1-6 lists the permits, licenses, agreements, and certifications required for project construction.

Table 1-6 Permitting and Approving Agencies

Agency	Permit/Approval	Status
California Department of Fish and Wildlife	Section 1602 Streambed Alteration Agreement for construction within Pismo Creek	Acquired during final design of the project.
U.S. Army Corps of Engineers	Section 404 nationwide permit for construction within Pismo Creek	Acquired during final design of the project.
Central Coast Regional Water Quality Control Board	Section 401 Certification for construction within Pismo Creek	Acquired during final design of the project.
U.S. Fish and Wildlife Service	Section 7 formal consultation and Biological Opinion for the tidewater goby and goby critical habitat, and Programmatic Biological Opinion for the California red-legged frog	In process.
National Marine Fisheries Service	Section 7 formal consultation and Biological Opinion for the Central California Coast steelhead and steelhead critical habitat	In process.
California Transportation Commission	Funding approval	Acquired prior to advertising project for contract bids.
City of Pismo Beach	Coastal zone development permit	Acquired during final design of the project.
County of San Luis Obispo	Coastal zone development permit	Acquired during final design of the project.
California Coastal Commission	Coastal zone development permit	Acquired during final design of the project.

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

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

- Existing and future land use—The project occurs within the freeway corridor and would not affect land use. It is consistent with the US 101 Comprehensive Multimodal Corridor Plan, which is the umbrella plan for the US 101 corridor in San Luis Obispo County, as well as the Council of Governments' 2019 Regional Transportation Plan. The project is not consistent with all policies in the City of Pismo Beach Local Coastal Plan. This topic is discussed in section 2.1.1 *Coastal Zone*.
- Timberland and farmland—There is no timberland or agricultural land within the project limits.
- Environmental Justice—There are no impacts anticipated outside of the freeway corridor. No minority or low-income populations that would be adversely affected by the project have been identified. Therefore, this project is not subject to the provisions of Executive Order 12898.
- Parks and recreation—The project has no impact directly or indirectly on parks or recreational activities.
- Growth—The project uses an existing transportation corridor and does not provide for additional access to planned or existing communities.
- Community character and cohesion—The project expands into the median and therefore does not impact existing communities.
- Utilities and emergency services—No additional services or utilities would be required by the project.
- Traffic and transportation/pedestrian and bicycle facilities—The project is expected to have a beneficial impact on transportation by reducing delay. The freeway does not support pedestrian or bicycle traffic and therefore there would be no effect on these modes.
- Geology, soils, seismicity and topography—As a standard procedure, the freeway widening would be constructed on a compacted base of imported material. Based on site-specific testing, bridges would be constructed to withstand the maximum credible ground accelerations projected to occur during a seismic event.

- Paleontology—The two geologic formations within the project limits are shown as having a low to zero potential for encountering sensitive paleontological resources in the *Paleontological Sensitivity Mapping Project* published by Caltrans and California State University, Fresno in June 2000.
- Hazardous waste and materials—The project contains no hazardous waste. Construction activities could encounter lead paint, lead in the soil, and/or asbestos. These materials would be handled per standard construction specifications and taken to an appropriate facility.
- Air quality—The project is not located in a non-attainment or maintenance area for ozone, nitrogen dioxide, carbon monoxide, or small particulate (under 2.5 or 10 microns) per the Environmental Protection Agency's *Green Book* listing of non-attainment areas.

2.1 Human Environment

2.1.1 Coastal Zone

Regulatory Setting

This project has the potential to affect resources protected by the Coastal Zone Management Act of 1972. The Coastal Zone Management Act is the main federal law enacted to preserve and protect coastal resources. The act sets up a program under which coastal states are encouraged to develop coastal management programs. States with an approved coastal management plan are able to review federal permits and activities to determine if they are consistent with the state's management plan.

California has developed a coastal zone management plan and has enacted its own law, the California Coastal Act of 1976, to protect the coastline. The policies established by the California Coastal Act are similar to those for the Coastal Zone Management Act. They include the protection and expansion of public access and recreation; the protection, enhancement, and restoration of environmentally sensitive areas; the protection of agricultural lands; the protection of scenic beauty; and the protection of property and life from coastal hazards. The California Coastal Commission is responsible for implementation and oversight under the California Coastal Act.

Just as the federal Coastal Zone Management Act delegates power to coastal states to develop their own coastal management plans, the California Coastal Act delegates power to local governments to enact their own local coastal programs. The project is subject to the local coastal programs for San Luis Obispo County and the City of Pismo Beach, as well as being within the original jurisdiction of the Coastal Commission. The local coastal programs contain the ground rules for development and protection of coastal resources in their jurisdiction consistent with the California Coastal Act goals. A Federal Consistency Certification will be needed as well. The Federal Consistency Certification process will be initiated prior to the

final environmental document and will be completed during the NEPA process or during final design.

Affected Environment

The majority of the project lies within the coastal zone and would require a permit for construction from each of the jurisdictional agencies. The portion of the project alignment within the coastal zone is almost entirely within the limits of the City of Pismo Beach, except for the short northern segment near Avila Beach Drive. The California Coastal Commission has retained original jurisdiction in the area surrounding Pismo Creek. The project is therefore subject to the policies of the California Coastal Act and the local coastal programs of both the County of San Luis Obispo and the City of Pismo Beach.

The County of San Luis Obispo General Plan includes the Land Use Element and Local Coastal Program that was adopted by the County Board of Supervisors and certified by the California Coastal Commission in 1988 and was last updated in 2007. The Land Use Element contains a local coastal program policy document outlining coastal plan policies for the county. The proposed project is within the San Luis Bay Planning Area, which has a separate report describing land use policies and development standards for communities in the planning area. The San Luis Bay Plan was adopted and certified in 1988 with the County General Plan and was last updated in 2009.

The City of Pismo Beach General Plan and Local Coastal Program was adopted by the City Council in 1992 and certified by the California Coastal Commission in 1993; the Plan was last updated in April 2014. The City and County local coastal programs generally feature the same themes and principles to allow for coordinated planning efforts.

The following is a list of the policies from Chapter 3 of the California Coastal Act (Resource Planning and Management Policies), the County of San Luis Obispo's *Local Coastal Program* and *San Luis Bay Area Plan*, and the City of Pismo Beach's *General Plan and Local Coastal Program*. The relevant policies from each plan have been grouped together by subject. Policies for resources that would not be affected by the project, such as agricultural lands, have not been included.

Public Access and Circulation

California Coastal Act

- 30211—Development not to Interfere with Access
- 30252—Maintenance and Enhancement of Public Access

County of San Luis Obispo Local Coastal Program

Coastal Plan Policies, Public Works Chapter

- Policy 2—New or Expanded Public Works Facilities

Coastal Plan Policies, Shoreline Access Chapter

- Policy 8—Minimizing Conflicts with Adjacent Uses

City of Pismo Beach Local Coastal Program

- Principle P-1—Balanced Transportation
- Policy C-1—Street Classification Plan and Design Standards
- Policy C-2—Freeway US 101—6 Lanes
- Policy C-8—Highway System Plan and Traffic Improvements

Visual and Scenic Resources

California Coastal Act

- 30251—Scenic and Visual Qualities

County of San Luis Obispo Local Coastal Program

Coastal Plan Policies, Visual and Scenic Resources Chapter

- Policy 1—Protection of Visual and Scenic Resources
- Policy 5—Landform Alterations
- Policy 7—Preservation of Trees and Native Vegetation

San Luis Bay Area Plan

- Land Use, Rural Area Program 2—Viewshed Protection

City of Pismo Beach Local Coastal Program

- Principle P-6—The Big Three
- Principle P-7—Visual Quality is Important
- Policy D-10—Parking Lots and Large Asphalt Areas
- Policy D-13—Freeway Landscaping
- Policy D-14—Public Facilities
- Policy D-17—Native and Drought Tolerant Landscaping
- Policy D-1—View Corridor Protection
- Policy D-20—Special Landscape Features
- Policy D-23—US 101 Freeway
- Policy LU-Q-3—Development Considerations, Minimize Impact on Foothills
- Policy LU-Q-4d—Development Considerations, Vegetation

Archaeological and Paleontological Resources

California Coastal Act

- 30244—Archaeological or Paleontological Resources

County of San Luis Obispo Local Coastal Program

Coastal Plan Policies, Archaeology Chapter

- Policy 1—Protection of Archaeological Resources
- Policy 4—Preliminary Site Survey for Development within Archaeologically Sensitive Areas
- Policy 5—Mitigation Techniques for Preliminary Site Survey before Construction
- Policy 6—Archaeological Resources Discovered during Construction or through Other Activities

City of Pismo Beach General Plan and Local Coastal Program

- Policy CO-5—Protect Archaeological Resources
- Policy CO-6—Construction Suspension
- Policy LU-9—Chumash Cultural Resources Preservation
- Policy LU-Q-4b—Development Considerations, Archaeology

Hazards and Hazardous Waste

California Coastal Act

- 30232—Oil and Hazardous Substance Spills
- 30253 a, b—Minimization of Adverse Impacts

County of San Luis Obispo Local Coastal Program

Coastal Plan Policies, Hazards Chapter

- Policy 2—Erosion and Geologic Stability
- Policy 3—Review in Hazards Area

City of Pismo Beach Local Coastal Program

- Principle P-23—Protection of Life and Safety
- Policy S-1—Risk Identification
- Policy S-9—Restrictions on Development Within the 100-Year Flood Plain
- Policy S-11—Development Review in Hazardous Overlay Zone

Air Quality and Greenhouse Gas

California Coastal Act

- 30253 c, d—Minimization of Adverse Impacts: pollution; energy conservation

City of Pismo Beach Local Coastal Program

- Principle P-4—Clean Air—A Must
- Policy CO-4—Trip Reduction

Noise

City of Pismo Beach Local Coastal Program

- Principle P-20—Noise Levels
- Policy LU-Q-4c—Development Considerations, Noise

Water Quality and Erosion

California Coastal Act

- 30231—Biological Productivity; Water Quality

County of San Luis Obispo Local Coastal Program

Coastal Plan Policies, Coastal Watersheds Chapter:

- Policy 1—Preservation of Groundwater Basins
- Policy 8—Timing of Construction and Grading
- Policy 9—Techniques for Minimizing Sedimentation
- Policy 10—Drainage Provisions
- Policy 11—Preserving Groundwater Recharge

City of Pismo Beach Local Coastal Program

- Principle P-24—Maintain Unique Physiographic Characters
- Policy LU-Q-4a—Development Considerations, Water Runoff and Erosion

Environmentally Sensitive Habitat Areas; Biological Resources

California Coastal Act

- 30233—Diking, Filling or Dredging
- 30236—Water Supply and Flood Control
- 30240—Environmentally Sensitive Habitat Areas; Adjacent Developments

County of San Luis Obispo Local Coastal Program

Coastal Plan Policies, Environmentally Sensitive Habitats Chapter:

- Policy 1—Land Uses Within or Adjacent to Environmentally Sensitive Habitats
- Policy 3—Habitat Restoration
- Policy 7—Protection of Environmentally Sensitive Habitats
- Policy 13—Diking, Dredging or Filling of Wetlands
- Policy 16—Adjacent Development

- Policy 20—Coastal Streams and Riparian Vegetation
- Policy 21—Development in or Adjacent to a Coastal Stream
- Policy 25—Streambed Alteration
- Policy 26—Riparian Vegetation
- Policy 27—Stream Diversion Structures
- Policy 28—Buffer Zone for Riparian Habitat

City of Pismo Beach Local Coastal Program

- Principle P-2—Natural Resources—Key Foundation of the City
- Principle P-13—Natural Resource Preservation
- Policy CO-13—Oak Tree Protection
- Policy CO-14—Riparian Habitats
- Principle CO-21—Pismo Creek Protection
- Policy CO-28—Natural Drainage Channels
- Policy D-12—Development Considerations, Water Runoff and Erosion
- Policy LU-L2—Pismo Creek

Required Permits

County of San Luis Obispo Local Coastal Program

Coastal Plan Policies, Environmentally Sensitive Habitats Chapter:

- Policy 2—Permit Requirement
- Policy 22—Fish and Game Review of Streambed Alteration
- Policy 23—County Review of Coastal Stream Projects

Coastal Plan Policies, Public Works Chapter:

- Policy 7—Permit Requirements

Environmental Consequences

Caltrans would obtain permits for development within the coastal zone from the County of San Luis Obispo, the City of Pismo Beach, and the California Coastal Commission during final project design, unless a combined permit were agreed upon by one or more of the jurisdictional agencies. The permit process would include a public hearing and comment period; any permit issued could be appealed to the Coastal Commission. Potential inconsistencies with the local coastal plan policies could require a Local Coastal Plan amendment. The jurisdictional agencies would make a determination on consistency during the permitting process.

Public Access and Circulation

By improving traffic flow, the proposed project would improve coastal access to Pismo Beach and the surrounding coastal communities. The added freeway width from the part-time travel lane would accommodate future freeway widening. Widening through this segment is not currently planned, but the proposed project would improve the predicted level of service beyond the No-Build condition through the year 2046. The proposed park-and-ride lot would provide additional parking for the Pismo Preserve.

Visual and Scenic Resources

The proposed project would reduce the visual quality of US 101 through the project limits. Mitigation measures to reduce impacts have been incorporated, but they would not fully mitigate the anticipated changes to the visual environment. Therefore, the project could be found inconsistent with coastal policies related to visual and scenic resources. As discussed in section 2.1.2 *Visual/Aesthetics*, the project would further urbanize the corridor through various components, including the installation of new signing and signals, an increase in pavement and other hardscape, and a loss of mature vegetation. Soundwalls, which would reduce freeway noise but also block coastal views, are under consideration for the project. The US 101 corridor through the project limits is eligible for classification as a State Scenic Highway, but the degree of urbanization that has been introduced since obtaining that status has eliminated the potential for official listing. Thus, the project would not change the eligibility status of the highway.

Archaeological and Paleontological Resources

The project has been designed to avoid cultural resources where feasible, such as Pismo Rock, but the project is still expected to have an adverse impact on cultural resources. Research conducted to date and completion of National Historic Preservation Act Section 106 processes would address the policies noted above. A full discussion on this subject can be found in section 2.1.3, *Cultural Resources*.

Hazards and Hazardous Waste

Potential hazards for the project have been identified in the hazardous waste study, the Storm Water Data Report, and the Location Hydraulic Study. The project would be constructed using current design standards to minimize hazards from flooding, seismic events, or the release of hazardous substances. Widening the Pismo Creek Bridge would require adding structures within the 100-year flood zone, but this would not be a significant encroachment and would not affect water levels.

Air Quality and Greenhouse Gas

Vehicle miles traveled would increase between 7 and 10 percent for all the build options compared to the No-Build scenario, creating an overall increase in greenhouse gas emissions. The project would partially offset the increase in vehicle miles traveled through construction of a park-and-ride lot. See also section 3.3.4 *Greenhouse Gas Reduction Strategies*.

Noise

The project is expected to increase the exterior noise level for some residents near the freeway as a result of increased traffic speeds. Anticipated noise levels at these locations are expected to exceed the levels identified by the City of Pismo Beach, therefore the project could be found inconsistent with local policy. Soundwalls would mitigate these noise levels at some of the locations, but would not necessarily be included in the final project design. See section 2.2.3 *Noise* for more information.

Water Quality and Erosion

The project includes measures to treat storm water runoff and limit erosion; details would be included in the Storm Water Pollution Prevention Plan prepared prior to construction. See section 2.2.1 *Hydrology and Floodplain* and section 2.2.2 *Water Quality and Storm Water Runoff* for more information.

Environmentally Sensitive Habitat Areas; Biological Resources

Pismo Creek is an environmentally sensitive habitat area within the project limits that hosts newly established riparian vegetation planted as mitigation for the recent project to repair scour under the bridge. The creek bed has been designated as critical habitat for the tidewater goby and south-central California steelhead, and contains habitat for the California red-legged frog and western pond turtle. The project would result in minor permanent impacts to the creek channel as a result of sheet piling. All other creek impacts are temporary. See section 2.3, *Biological Environment* for more information.

Required Permits

See Table 1-6 *Permitting and Approving Agencies* for permits that would be acquired during project design.

Avoidance, Minimization, and/or Mitigation Measures

Measures that would avoid, minimize, or mitigate impacts as a result of the project are described in detail in Chapter 2 of this document. No specific measures have been included to address coastal policies, but the coastal development permits could be issued with conditions.

2.1.2 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 USC 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

Reference: Visual Impact Assessment, May 2020.

The region is part of a coastal plateau in the southern coastal area of San Luis Obispo County. The landform of the region is characterized by a narrow marine terrace bordered by the beach and Pacific Ocean to the west and the hills to the east. These landforms are viewed in context with one another within the area. The regional topography produces views for the highway traveler ranging from close-in views of the hillsides to the east, to wide open panoramas of the Pacific Ocean.

Pismo Beach sits along a narrow coastal plateau between low-lying hills and the Pacific Ocean. The inland hills are visible as they rise above the community to the northeast and define the horizon in that direction. The project through the US 101 corridor is generally well-landscaped, and within the project limits the Pacific Ocean can be seen in the distance from the elevated highway mainline. Throughout the freeway corridor, blue-water ocean views and the inland hillsides play an important role in establishing the visual character and quality of the area. Situated in the median between the Price/Dolliver southbound off-ramp and the North Pismo separation at Mattie Road is a large geographic landmark known locally as the Pismo Rock, seen in Figure 2-1.

Figure 2-1 Pismo Rock as Seen Looking Northeast from Price Street



The surrounding area is mostly developed, with commercial, residential, and recreational uses within sight of the project. Visible highway elements include concrete median barrier and metal safety barriers, signs, lighting, call boxes, and markers, as well as the vehicular traffic, at times heavy. Overhead utility poles and wires also contribute to the view along the corridor, mostly seen parallel to the highway on the frontage roads. In this section of US 101, development has a moderately high visual presence in the landscape. Throughout much of this section of the freeway, the scale and frequency of structures and other built amenities, though visible, do not dominate views of the Pacific Ocean when seen in the context of the overall landscape. In addition to buildings, existing vegetation also blocks some of the views of the Pacific Ocean throughout the project area.

Several residences sit on the hillside east of and above the project site. These hillsides and areas to the east of the highway are generally populated by sagebrush and coyote brush, with occasional eucalyptus trees, palm trees, and cypress trees. Residences are also located to the west and below the freeway, mixed with hotels and commercial developments. In these areas, mature ornamental landscaping is prevalent with palm trees seen along the skyline. Between the southbound outside lane and the local frontage road, there are low mounding shrubs, ornamental trees, and cypress trees.

Although US 101 through the project area is not an officially designated scenic highway, it is on the statutory list of highways eligible for scenic designation in the State Scenic Highway System. An official designation would require nomination by the local jurisdiction, but due to the substantial amount of urban development throughout the corridor, it no longer meets the criteria required to become officially designated. Nevertheless, the quality of the existing visual environment through the project area is still moderately high. The low hills meeting the marine terrace with a view to the Pacific Ocean create an attractive setting for the freeway. The project site contributes to the generally well-landscaped roadside of the freeway corridor and helps establish a vegetated character for the City of Pismo Beach and surrounding coastal communities.

For evaluation purposes, the project area was divided into two landscape units. These units are based on distinct zones that have certain common visual characteristics. The main unit for this project is the coastal unit, which runs from where US 101 passes over the Coast Range to the southern limits of the project. Ocean and coastal views are significant scenic elements within this unit, but it is also defined by its urban and semi-urban context through the commercial core and residential areas of Shell Beach and Pismo Beach. The second unit, or inland unit, is the segment between the northern end of the project limits and the Coastal Range pass. There are no coastal views within this unit, rather it is defined by rolling hills east and west of the freeway within a semi-rural context.

Environmental Consequences

Implementation of the project would result in substantial visual changes throughout much of the freeway corridor. The project includes numerous components that would impact the visual character of the area:

- additional lane paving
- additional gore paving
- additional vehicle pull-outs for service vehicles
- paved median and concrete median barrier at a new height
- a park-and-ride lot
- bridge widening at four locations and bridge slope paving
- additional signs and signals
- retaining walls
- loss of skyline trees and freeway landscaping

Each build alternative and variation includes additional paving, barriers, retaining walls, slope paving, and other hardscape elements. Collectively, these features would substantially increase the visual scale and the engineered, urban character of the project corridor. The visual appearance would be of a much larger-scale freeway facility. New lane striping and other lane markings, as well as the new signals and signing, would further draw attention to the uniqueness of the part-time travel lane and increase the visual clutter of the corridor.

To manage the part-time travel lane, median overhead lane-use control signals would be installed at approximately 2,300-foot intervals and would be visible to all motorists. (Alternative 1 and the truck-climbing variation would likely need 8 of these signal and pole systems, and 10 for Alternative 2. See Figure 1-3 for a representative example.) Signal poles would be 30 feet tall and would support the electronic signal panel, a closed-circuit television camera, and an “Hours of Operation” sign. Where visible, these signal pole systems, although somewhat narrow in profile, would add visual clutter and adversely affect the quality and character of the view. Additional roadside signs providing advanced notice of the part-time travel lane and the schedule of operation would contribute to the loss of visual character due to the number of signs and signals. Potential vegetation removal or pruning required for placement of roadside signs would further reduce visual quality.

The four existing bridge structures within the project limits would be widened to the inside to accommodate the new part-time travel lane. Current safety standards would require replacing the existing inside bridge rail with new, taller, and bulkier rail. This would result in each of these structures having bridge rails of a different size and shape on opposite sides of the same bridge. The visual effect would be an architectural inconsistency and aesthetic degradation of each bridge structure.

All build options would require a retaining wall between the freeway and Price Street (Route 1) where the lanes are being shifted to the outside to avoid impacts to Pismo Rock. This retaining wall would be approximately 1,200 feet long, varying in height from about 5 feet to about 15 feet. The 36-inch-high safety barrier that would sit atop the wall would further increase the apparent wall height as seen from Price Street. A second retaining wall in the freeway median would be required with Alternative 1, as well as the truck-climbing variation, in the vicinity of Beachcomber Drive, about 0.5 mile north of Spyglass Drive, where widening for the part-time travel lane begins. This wall would be about 500 feet long and about 15 feet tall at its highest level; it would replace a heavily vegetated slope that contains large shrubs and mature trees. When the part-time travel lane is open, there would be only a 2-foot shoulder between the travel lane and the wall, creating an even more imposing structure for motorists.

A dirt lot next to Price Street at the Mattie Road undercrossing, currently being used as an informal parking lot, would be transformed into a formal park-and-ride facility by creating a paved parking and pedestrian area. The lot could also include bike parking and bike boxes, shade trees for parking, vegetative swales to manage stormwater, and new landscaped areas. Since informal parking currently occupies the site, the proposed changes would not introduce a new use. However, the other undefined site amenities such as lighting, shade trees, and other elements have the potential to affect views from US 101 to the ocean, and to affect views from Shell Beach Road toward the inland hills.

Some degree of existing freeway landscaping is found throughout much of the project's length. At certain locations, particularly in the median, the vegetation includes mature and skyline trees and dense shrubs. Along other sections of the freeway corridor, the planting is sparse and at times has a weedy appearance. This, however, still adds to the vegetative character of the corridor as well as reduces views of the freeway from the community. In areas where the existing planting is larger and well-established, the combination of more paving, new walls and barrier, and plant removal would affect the vegetated character and increase the visual scale of the freeway facility. With each of the alternatives and variations, the proposed project would reduce the vegetative character of the corridor, though in some areas removing existing planting could potentially open up views to the coast. The project would include new landscaping, but for safety reasons only wider areas or locations behind safety barrier would accommodate trees or large shrubs. At some of the currently weedy locations, new planting would have the potential to create a more unified look.

Impacts to visual quality were assessed in terms of the visual resource change that would occur as a result of the project. Three characteristics were used to rate the existing visual quality of the project area to compare it to the expected conditions post-construction: vividness, intactness, and unity. Vividness is the visual power or memorability of the landscape components as they combine in striking and distinctive visual patterns. Intactness is the visual integrity of the landscape and its freedom from non-typical encroaching elements. If all the various elements of a

landscape seem to “belong” together, there will be a high level of intactness. Unity is the visual harmony of the landscape considered as a whole. Unity represents the degree to which potentially diverse visual elements maintain a coherent visual pattern.

Evaluations were conducted from the perspective of two viewer groups: those with views *from* the freeway and those with views *of* the freeway. The group with views from the freeway would be entirely of individuals using motorized transportation at freeway speeds. In general, highway users in motor vehicles will perceive the area as a cumulative sequence of views and may not focus on specific roadway features. In contrast, those with views of the freeway would be experiencing more sustained views from a stationary location or a slower method of travel.

Seven observer viewpoints were considered during the evaluation: 5 from the coastal unit and 2 from the inland unit. Both inland unit observer viewpoints were from US 101; the observer viewpoints within the coastal unit were a combination of views to and from the freeway. These viewpoints are shown in the following photos, first from the existing viewpoint and then from how the same view might look if the project were constructed. It should be noted that the photo simulations are representative images only and not exact views of how the project would appear if constructed. They are included to give a general idea of how the project components might appear in relation to the surrounding landscape.

Observer Viewpoints 2 and 4 are from two of the three locations where a soundwall is being considered. Soundwalls are not a main component of the proposed project; they do not address the purpose of or the need for the project, but rather are secondary features that are being considered to address the adverse noise impacts that are expected to occur as a result of the project. Therefore, they are discussed at the end of this section.

Observer Viewpoint 1—From US 101 near Pismo Rock, looking southbound

Figure 2-2 Existing View



The existing view from US 101 in this area is considered high in visual quality due to several factors. The proximity and visual dominance of Pismo Rock substantially increases the memorability of the view. Views of the Pacific Ocean and distant coastline extending to Point Sal also add to the memorability of the scene. The scale and type of development along the ocean side of the highway help establish a “beach town” character and contribute to a relatively high degree of both visual intactness and unity.

Figure 2-3 Built View, All Alternatives



At this location, US 101 would be widened to the outside, requiring a retaining wall and concrete barrier along Price Street. A new concrete barrier would also be built along the base of Pismo Rock at the edge of the inside shoulder. The added freeway pavement in this area would reduce visual quality and the vividness rating by creating a more urban character in the immediate vicinity of the scenic Pismo Rock. The concrete barrier lining both sides of the freeway would further affect the visual connection to the coastal setting. Visual access to the beach community and ocean would be partially reduced, having a negative result to both visual unity and intactness.

Observer Viewpoint 3—From northbound US 101 north of Spyglass Drive, looking toward Shell Beach

Figure 2-4 Existing View



The high-quality views along the section of US 101 represented by Observer Viewpoint 3 are the result of sweeping ocean and coastal vistas of San Luis Bay and Avila Beach, combined with views of Ontario Ridge and inland hillsides. These visual characteristics combine for a high vividness rating. Roadside development is somewhat less visually dominant through this area, which adds to the higher intactness and unity determinations.

Figure 2-5 Built View, All Alternatives



This image is representative of the proposed project from the northbound lanes. Throughout most of the project limits, the existing 32-inch-high metal median barrier would be replaced with taller, 42-inch concrete barrier. The existing ground below the barrier would likely be raised to meet current cross-slope safety standards, resulting in a cumulative increase of top-of-barrier height of at least 10 inches over what currently exists and reducing views of the Pacific Ocean, San Luis Bay, Avila Beach, and the coastline. Accordingly, the overall memorability of the scene would be reduced, though the existing views of the distant hills would remain largely intact.

Lane-control signals, as seen in the photo simulation, would be installed in the median every 2,300 feet at minimum throughout the project limits. Where visible, these signals, though somewhat narrow in profile, would add visual clutter and reduce the intactness and unity rating of the viewshed.

In this area, the Alternative 1 variation proposes to extend the truck-climbing lane. From northbound US 101, views of the coast and/or of the extended truck-climbing lane would depend on the height of the viewer's vehicle and the lane being travelled. Viewers in taller vehicles travelling in the inside lane would have minimal view reduction, but would see the added pavement of the southbound extended truck-climbing lane. Alternatively, those in shorter vehicles or those travelling in the outside lane would experience a greater loss of coastal views, but also not readily see the southbound truck-climbing lane. From southbound US 101, the closer proximity of the extended truck-climbing lane would cause a decrease in the visual unity and intactness ratings for the Alternative 1 truck-climbing lane variation.

Observer Viewpoint 5—From Mattie Road near Valencia Drive, looking northwest

Figure 2-6 Existing View



This view is from the hills above the freeway. The generally elevated position of Mattie Road provides for scenic vistas of the Pacific Ocean, the coastline from Pecho Hill to Point Sal, and the beach communities below. Although US 101 is a visually detracting element in the mid-ground, the overall visual quality and character are highly rated. Accordingly, the memorability of the vista is high. Along certain sections of Mattie Road, the elevation dips and ocean views are less available, and either vegetation and/or existing development are more dominant. Views to the east are mostly defined by the adjacent hillsides, although residential and some commercial development blocks lower portions of the slopes. The intactness and unity of the views from Mattie Road are considered above average as they offer a panoramic view of the coastal beachside community.

Figure 2-7 Built View, All Alternatives



At this location, the project would add the part-time travel lane in the southbound direction and replace the existing concrete median barrier with a new, taller one. The 30-foot-tall lane control signals and camera poles would be seen in the median at between 7 and 10 locations along the freeway. If a soundwall were constructed at this location, this image shows how it could appear from this vantage point.

Generally, because of the lower elevation of US 101, the project elements would be below the main line-of-sight of viewpoints along Mattie Road. The new part-time travel lane, the median barrier, and the soundwall, were it constructed, would appear somewhat more urban than the existing condition. Although the control signals and camera poles would be relatively narrow in visual profile and not block a substantial percentage of the vista, their presence would contribute to an increase of visual clutter and reduction of vividness, unity, intactness, and character.

Observer Viewpoint 6—From US 101 south of Avila Beach Drive, looking southbound

Figure 2-8 Existing View



The visual quality along this section of US 101 is based mostly on the topography rising from both sides of the freeway, the generally sparse development, and its transition to the scenic panorama of the Pacific Ocean and the coastline as it opens up to the south. This sequential viewing experience creates a highly memorable and vivid quality. The visual character of both the natural coastal landscape combined with beach community in the distance allows for a fairly high degree of visual harmony, intactness and unity.

For Alternative 1 and the truck-climbing lane variation, the proposed part-time travel lane would not begin until a point south of this Observer Viewpoint, therefore the viewpoint after construction would be the same as existing.

Figure 2-9 Built View, Alternative 2



As seen from this Observer Viewpoint, the changes resulting from construction of Alternative 2 would include the part-time lane, replacement of the existing metal median barrier with taller concrete barrier, and added lane control signals. Alternative 2 would not add any outside barriers or wall at this location, and would leave the scenic vistas of the ocean, coastline, hillsides and community relatively intact. The additional pavement and concrete median barrier would create a more urbanized appearance, and the 30-foot-tall lane control signal and camera pole would increase visual clutter. The electronic nature of the signal would draw attention to the apparatus and its detracting character. As a result, the vividness, intactness and unity of the view would be somewhat diminished.

Observer Viewpoint 7—From US 101 south of San Luis Obispo Creek Bridge, looking southbound

Figure 2-10 Existing View



As seen from Observer Viewpoint 7, the view is dominated by the landform of the ridgeline and hills on each side of the highway. The natural patterns of native vegetation on the surrounding hills and along San Luis Obispo Creek add to the relatively high visual quality, intactness, and unity determinations. Although this type of landscape is somewhat typical of the inland landscape assessment unit, the memorability of this view is increased by the proximity of the dramatic landforms to the highway.

Similarly to Observer Viewpoint 6, for Alternative 1 and the truck-climbing lane variation, the proposed part-time travel lane would not begin until a point south of this Observer Viewpoint, therefore the viewpoint after construction would be the same as existing.

Figure 2-11 Built View, Alternative 2



As seen from Observer Viewpoint 7, Alternative 2 would begin transitioning to the part-time travel lane just south of the bridge. The existing metal median barrier would be replaced with taller concrete barrier, and lane control signals would be added. Other than the lane control signal and camera, this alternative would leave the views of the surrounding hills and vegetation relatively intact. The most noticeable aspects of the project would be the additional pavement in the distance, the concrete median barrier, which would create a more urbanized appearance, and the 30-foot-tall lane control signal and camera pole, which would increase visual clutter. The elevation of the surrounding topography would reduce the extent to which the signal would silhouette above the sky as seen from the highway. As seen from Observer Viewpoint 7, Alternate 2 would result in a minor reduction of the vividness, intactness and unity ratings.

The following two observer viewpoints show how a soundwall could impact the visual quality of the surrounding area, both from the freeway and from the local roads.

Soundwalls

Soundwalls are being considered to mitigate noise impacts from the project at three locations. (See section 2.2.3 *Noise* for more information.) Preliminary design shows the soundwalls would likely be between 8 and 12 feet tall and constructed of masonry block. Landscaping or other methods would be used to deter graffiti.

Soundwalls that were constructed with the project would not only affect the visual character of the area, but two of the walls would also block high-quality scenic

views. Soundwall 6 (south of Wadsworth Avenue) would not reduce scenic views beyond what is currently blocked by existing landscaping and intervening development. (It should be noted that the many high-quality ocean and coastal views currently available throughout the project limits would not be affected by the project, and in certain areas quality views are already limited by existing vegetation, development, or both.) However, Soundwalls 2 and 3 (both south of Spyglass Drive) would cause a direct obstruction of views to the Pacific Ocean, the coastline, and the Shell Beach community as seen from US 101. These two soundwalls, approximately 1,400 feet apart, would block quality coastal views along an approximately one-half mile of US 101. The estimated duration of view blockage would be approximately 30 seconds, travelling at the posted speed limit. For maintenance and potential vandalism reasons, Caltrans District 5 does not allow see-through materials for walls of these heights. As seen from Shell Beach Road and adjacent parts of the community, Soundwalls 2 and 3 would provide a benefit in terms of reducing visibility of the freeway, but they would at the same time contribute to a collective increase in urbanized visual character.

The following observer viewpoints show simulations of how the soundwalls might appear in relation to the surrounding landscape. Aesthetic treatments, such as color and/or texture shown in the photo simulations, are generic representations of possible aesthetic treatments. Actual aesthetic treatments would be determined during the design phase of the project with input from the public and local agency representatives.

Observer Viewpoint 2—From US 101 south of Spyglass Drive, looking southbound
Figure 2-12 Existing View



This view represents one of the locations where a soundwall is being considered to mitigate noise impacts from the project. The visual quality along US 101 as represented by Observer Viewpoint 2 is moderately high. The vividness rating is due mostly to the views of the Pacific Ocean, the coastline as it sweeps around to the

south to the Oceano Dunes and Point Sal, and because of the inland hillsides rising from the east. The visual unity and intactness ratings are largely positive, though some of the residential development inland from the highway tends to detract from the hillside views and beach community aesthetic character.

Figure 2-13 Built View, All Alternatives



If it were constructed, an 8-foot-tall soundwall would be placed along the edge of the southbound freeway shoulder, possibly fronted by a concrete safety barrier. Existing vegetation between US 101 and Shell Beach Road would be removed to accommodate the part-time travel lane, and the existing concrete barrier in the median would be replaced with a taller style.

The most noticeable visual change would be the complete loss of ocean views and reduction of community character because of the new soundwall. The existing vividness or memorability rating would be substantially lowered. The visual unity and intactness provided by views of the Shell Beach community would be reduced. The inland hills would become the more positive contributor to visual quality, though the type of residential development visible in the mid-ground would moderate that visual benefit.

Observer Viewpoint 4—From Shell Beach Road near Terrace Avenue, looking southeast

Figure 2-14 Existing View



This view from Shell Beach Road is defined mostly by a combination of community elements such as businesses, residences and the frontage road in the foreground, along with the scenic hills rising in the east. From many of the vantage points along Shell Beach Road and other local streets, views of US 101 are somewhat filtered by intervening roadside landscaping. The memorability of this view is considered moderate since it is not particularly unique for the area. The unity and intactness qualities are also in the moderate range because of the variety of competing developed and natural visual elements.

Figure 2-15 Built View, All Alternatives



In this location, a 10-foot-tall soundwall is being considered for construction along the edge of the southbound US 101 outside shoulder. Existing vegetation between US 101 and Shell Beach Road would be removed to construct the wall and rebuild the associated slope.

As seen from this local roadway, the soundwall would block views of the highway and most associated traffic, but would still allow views of the upper portions of the inland hillsides. The loss of existing vegetation would have an adverse effect on the visual character, including unity and intactness, although replacement landscaping would recreate the vegetated appearance over time. Replacement landscaping as shown in the photo-simulation is expected to take approximately 5 to 7 years to achieve this state of growth.

The main overall visual effect of the project would be an increased urban character. The inherent visual change associated with an increase in visual scale and additional hardscape would be unavoidable and noticeable. For some casual observers and people travelling through the area, the proposed scale of the facility would not be unexpected in the visual context of this freeway environment. Overall, however, viewer sensitivity and response to change is expected to be high, evidenced largely by the many local coastal planning policies regarding visual character and scenic view protection.

Avoidance, Minimization, and/or Mitigation Measures

The following measures would reduce the project's potential visual impact as seen from US 101 and the surrounding area; some or all could be included in the project.

Although implementation of these measures would reduce potential impacts, substantial adverse visual impacts would be unavoidable.

Mitigation measures related to the loss of visual quality, character and the scenic vista:

- Retaining walls, concrete median barrier, bridge rail, slope paving, contrast surface treatment, and concrete weed control should include aesthetic treatment such as color and/or texture appropriate for the setting. The specific types of aesthetic treatment should be determined with input from the City of Pismo Beach and the County of San Luis Obispo, per jurisdictional areas.
- Where bridge rail replacement is required on only one side of a structure, the existing rail on the opposite side of the bridge should also be replaced to match the new rail.
- Open-style bridge railing should be used on all bridge rail replacements. Modifications to existing bridge structures should reflect the visual character of the existing structures in terms of materials, color, style, and the existing human scale of the area.
- All new or replaced median barrier and median guardrail should be placed at the lowest elevation allowable by Caltrans cross-slope safety and drainage standards. If the ground supporting the existing median barrier or guardrail is a higher elevation than the lowest elevation allowable, the ground should be lowered if other environmental resources would not be adversely affected.
- All new, existing, and remaining metal guardrail posts throughout the project limits should be darkened by staining.
- All existing vegetation within the project limits should be protected to the greatest extent possible. Vegetation to be preserved should be delineated by exclusionary fencing and other methods as appropriate.
- All mature trees between proposed soundwalls and frontage roads should be protected. Slope redesign, tree-wells, slope-warping, and/or other techniques should be used to preserve the trees.
- The project should include new and replacement landscaping to the greatest extent possible for the purpose of reducing the urbanizing effect of increased paving, walls and other built project features, as well as for strictly aesthetic attributes.
- New planting should include a combination of trees, shrubs, and ground covers as appropriate.
- New planting should be native or horticulturally appropriate non-native varieties.
- Trees and shrubs should be planted from the largest container size horticulturally appropriate, in order to shorten the amount of time required until they provide substantial visual benefit.

- New planting should not be placed such that it would block views of the Pacific Ocean, the coastline, or the inland hills.
- Existing chain link right-of-way fencing to be replaced adjacent to Shell Beach Road through Shell Beach should match the new ornamental metal fence installed as part of recent Shell Beach Road Improvement project.
- The park-and-ride lot should include landscaping that reduces the visibility of parked vehicles as seen from US 101.
- Drainage structures visible from public areas should be designed to visually blend in with the setting to the extent possible.
- Roadside panel signs, such as those giving advanced “Begin” and “End” notice of the part-time travel lane and the schedule of operation, should be placed so that no tree or large shrub removal or substantial pruning is required.
- Lane use control signals installed north of Avila Beach Drive should be painted or otherwise colored to visually recede into the setting. Coloring should include poles, arms, cabinets and all attached equipment and connectors (except camera lens and glass covering)

Mitigation measures related to increased light and glare:

- All new and replaced lights and signals should include cut-off shields or other features to limit light trespass beyond the US 101 right-of-way.
- Park-and-ride lot lighting if required should include cut-off shields or other features to limit light trespass beyond the limits of the park-and-ride facility.

Mitigation measures related to soundwalls:

If soundwalls are included in the final project, the following measures should be applied to reduce the visual impact:

- Soundwalls should include aesthetic treatment such as color and/or texture appropriate for the setting.
- Landscaping and irrigation should be installed and maintained on all disturbed areas between the soundwall and the adjacent state right-of-way.
- Soundwalls 2 and 3, which are located at the edge of the freeway, should include cored holes at appropriate intervals to allow for vines to be planted on the back side of the walls so they can migrate through the holes to the front sides.

2.1.3 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 pre-historic and historic), regardless of significance. Under federal and state laws,

cultural resources that meet certain criteria of significance are referred to by various terms including “historic properties,” “historic sites,” “historical resources,” and “tribal cultural resources.” Laws and regulations dealing with cultural resources include the following.

The National Historic Preservation Act (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 (National Register). Section 106 of the 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 (Advisory Council) the opportunity to comment on those undertakings, following regulations issued by the Advisory Council (36 Code of Federal Regulations 800). On January 1, 2014, the First Amended Section 106 Programmatic Agreement (among the Federal Highway Administration, the Advisory Council, the State Historic Preservation Officer (Preservation Officer), and Caltrans went into effect for Caltrans projects, both state and local, with Federal Highway Administration involvement. The Programmatic Agreement implements the Advisory Council’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 (California Register) and outlined the necessary criteria for a cultural resource to be considered eligible for listing in the California Register and, therefore, a historical resource. Historical resources are defined in Public Resources Code Section 5020.1(j). In 2014, Assembly Bill 52 added the term “tribal cultural resources” to CEQA, and Assembly Bill 52 is commonly referenced instead of CEQA when discussing the process to identify tribal cultural resources (as well as identifying measures to avoid, preserve, or mitigate effects to them). Defined in Public Resources Code Section 21074(a), a tribal cultural resource is a California Register or local register eligible site, feature, place, cultural landscape, or object that 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 listing criteria. It further requires Caltrans to inventory state-owned structures in its rights-of-way. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the Preservation Officer before altering, transferring, relocating, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the

National Register or are registered or eligible for registration as California Historical Landmarks. Procedures for compliance with Public Resources Code Section 5024 are outlined in a Memorandum of Understanding between Caltrans and the Preservation Officer, effective January 1, 2015. For most federal-aid projects on the state highway system, compliance with the Section 106 Programmatic Agreement will satisfy the requirements of Public Resources Code Section 5024.

Affected Environment

Resource: Historical Properties Survey Report, May 2020.

Methodology

Record searches were performed at the Central Coast Information Center at the University of California, Santa Barbara in 2017 and 2018. Caltrans conducted Assembly Bill 52 consultation in 2017 and contacted the Native American Heritage Commission to search the Sacred Lands File. Archaeological surveys for much of the study area had already been conducted for prior projects, therefore only small, previously unsurveyed sections of the study area were investigated, targeting locations with recorded archaeological sites. The areas surrounding recorded resources along the study area, but outside the Caltrans right-of-way, were also inspected.

Findings

Phase 1 and Extended Phase 1/Phase 2 investigations identified nine previously recorded cultural resources (CA-SLO-801, CA-SLO-1128, CA-SLO-839, CA-SLO-884, CA-SLO-768, CA-SLO-99, CA-SLO-80/H, CA-SLO-832, CA-SLO-1003/1420) and one new cultural resource (AE-3406-01) that are within or extend within the Caltrans right-of-way within the project limits. Of these resources, five (CA-SLO-80/H, CA-SLO-801, CA-SLO-832, CA-SLO-1003/1420, and AE-3406-01) have been recommended or determined eligible for either the National Register or the California Register under criterion D (likely to yield information important to history or prehistory).

CA-SLO-801 is a large, complex, prehistoric shell midden and cemetery dating between 8,000 and 150 years before present. It was first recorded in 1977 and, at that time, portions of the site were under up to 15 feet of imported fill from US 101 construction. To date, it has undergone 46 archaeological investigations. During the early 1980s, Robert Gibson conducted an in-depth analysis of the materials collected during testing and found that the site was continuously occupied between 2,000 and 400 years ago. Based on the presence of human remains and the presence of abundant intact shell midden deposits, Gibson recommended CA-SLO-801 as a significant resource for the study of California prehistory. Overall, the site represents multiple occupations spanning 8,000 years and contains numerous house features, thermal features, and abundant data important to prehistory. Also, numerous burials highlight the cultural importance of CA-SLO-801 to the local Chumash as an ancient cemetery. While various authors found that the site contains significant materials under CEQA and the site should be considered

eligible under criterion D (for its potential to contain important information about our past), it had not been formally evaluated for the National Register or the California Register.

Construction of US 101, along with other development, has impacted portions of CA-SLO-801. Landform modification within the area is obvious in the form of a series of terraces created for the northbound and southbound lanes of US 101. It is likely that terracing occurred during highway construction in the late 1940s and into the 1960s. However, given the presence of cultural materials on the surface, noted during a recent field visit, there is high potential for pockets of intact buried site deposits within the study area. Caltrans consulted with the State Historic Preservation Officer for concurrence on the site's eligibility for the National Register under criteria A and D. The Preservation Officer concurred that the site was eligible under criterion D, but did not concur that it was eligible under criterion A (i.e., it makes a contribution to the major pattern of American history.)

CA-SLO-1128 was recorded in 1985 as a small marine shell scatter that included one isolated chert flake. Review of previous studies found that no formal testing effort has taken place and the site has not been evaluated for listing in the National Register or California Register. No cultural materials were observed on the surface or within rodent burrows during recent surveys, although visibility was poor due to ground cover. Backhoe trenching performed in 2003 by Clay Singer revealed layers of archaeological deposits. The deposits were highly disturbed down to about 6 feet, after which the intact deposits extended to unknown depth. Without systematic excavations, it is not possible to make an assessment of the potential for cultural resources within the study area, but given the proximity of the deposit at CA-SLO-801 and the lack of development in the vicinity, there is moderate potential for buried site deposits associated with CA-SLO-1128 within the study area.

CA-SLO-839 was recorded in 1978 as a chert debitage (lithic debris and discards from toolmaking) and shell fragment scatter. The site is defined as a seasonal habitation area with prehistoric artifacts consisting of marine shell fragments, stone tools, debitage, and fire-altered rock. The site might also contain historic-related materials, as a structure of unknown antiquity or function once stood within the boundaries. In 2009, trenching revealed intact subsurface cultural deposits below 3 feet of fill material, but studies also noted that the parcel had been disturbed, and recent fill layers suggested grading activities on the property. It was determined that, with the current level of information, the site could not be recommended eligible for the National Register/California Register. Recent construction, however, uncovered Native American burials, suggesting that CA-SLO-839 contains important archaeological deposits and therefore should continue to be considered eligible for the California Register. The site, however, has not been formally assessed for eligibility for inclusion in the National Register.

CA-SLO-884 was recorded in 1979 as a prehistoric habitation site containing flaked stone and shell. This site, along with two other nearby resources (CA-SLO-768 and CA-SLO -839) could be part of a larger habitation complex. In 1988, two marine

shell samples from the site were sent to Washington State University for radiocarbon dating. The results returned a date of 7,250 years before present for one and 8,010 years before present for the other. The area has been highly modified by residential and commercial development, as well as construction of the US 101 on-ramps and off-ramps. Deposits at the site have been described as significant, but the site has not been formally evaluated for inclusion in the National Register or California Register.

CA-SLO-768 was recorded in 1976 as a sparse yet deep and highly disturbed deposit of marine shell and flaked stone. It might be associated with CA-SLO-839 and CA-SLO-884. While the site covers a relatively large section of the coastal terrace, little archaeological information is on file regarding this resource. No record, beyond the site record, is present for this site, therefore it has not been tested or formally evaluated for listing in the National Register/California Register. Overall, these three sites represent an area that appears to contain a higher density of prehistoric sites. Given this density and construction of US 101 using fill rather than excavation, there is a moderate potential for buried materials associated with CA-SLO-768 to be present in the study area.

CA-SLO-99 was recorded in 1950 as a small coastal shell midden (prehistoric trash site) with at least one bedrock mortar. In 1980, a site reconnaissance revealed evidence of a habitation area with dietary remains, burned rock, flaked stone, and bedrock mortars and consequently was noted as significant and important to archaeologists, Native Americans, and the general public. Another site survey in 1980 revealed prehistoric site material mixed with historical and modern refuse, along with evidence of historic-era plowing and other disturbance within the site boundaries. Still later excavations found the site to be a small material resource for activities related to milling, shellfish processing, and fishing from the late Middle Period through the Late Period (950 years ago to the time of European settlement.) While several studies have covered CA-SLO-99 and documented “significant” deposits, it has not been formally evaluated for listing in the National Register or California Register. Based on the landform and modern development near CA-SLO-99, there is a low potential for cultural materials within the study area.

CA-SLO-80/H is a large shell midden with prehistoric cultural materials dating from the Early Archaic to the Late Period (10,000 years ago up to European settlement). Portions of the midden deposits are mixed due to decades of highway development and maintenance, ranching and agricultural activity, and other uses. Excavation in 1969 produced a broad range of cultural materials, including lithic debitage and flaked stone tools, pitted and battered stone, bone tools, shell beads, fishhooks, and debris from food preparation. Human remains were reported and, although their context was not documented, excavations in 1999 did reveal an intact human burial. Analysis in 2012 of the material from 1969 indicated the deposit had sustained substantial disturbance, making it impossible to clearly determine the timeline or cultural components; however, two shell beads from the burial indicate it is from the Late Period (700 years ago up to European settlement).

All previous investigations have concluded that CA-SLO-80/H is a significant resource that has potential to yield a substantial amount of important information about local and regional prehistory and history. The site represents as much as 10,000 years of local prehistory and, despite previous disturbance, intact midden deposits are present. Also, the site holds considerable importance for local Native Americans. CA-SLO-80/H has been evaluated as eligible for listing in the National Register under criterion D.

CA-SLO-832 and CA-SLO-1003/1420 make up a large prehistoric habitation complex that is bisected by US 101, creating two separate archaeological sites. (Unlike other portions of the study area, highway construction in this area cut down into the natural grade rather than using large amounts of fill to create an elevated roadbed.) CA-SLO-832 was formally recorded in 1976 as a large prehistoric shell midden with occupation episodes dating between 9,800 and 1,000 years before present. The site was disturbed during construction in 1953 without any formal archaeological investigations, but the contractor did note the presence of human remains during grading. It was identified as a significant site in the late 1970s after abundant archaeological resources—consisting of shell, lithic material, animal bone, ground stone, and human remains—were encountered during grading. In 1982, a winter solstice marker was discovered and confirmed as the only identified solstice marker in San Luis Obispo County. CA-SLO-1003/1420 was first identified in 1983 and given the trinomial CA-SLO-1003; CA-SLO-1420 was not identified until 1986. In 1998, the two sites were combined into CA-SLO-1003/1420.

Excavation was conducted in 2001 to produce preliminary conclusions about the contents and integrity of these two sites. Artifacts recovered included Early Archaic (10,000 to 5,500 years ago) projectile points; shell bead detritus; bone adornments; lithic tools; cores; debitage; milling slabs and other ground stone; and abundant fish and mammal bone. As a result, both CA-SLO-832 and CA-SLO-1003/1420 have been determined eligible for the National Register under criterion D. While disturbances from highway construction are obvious, previous studies have documented that intact deposits associated with the two sites are present in the study area. Overall, these archaeological resources represent an important site complex on both sides of US 101. Therefore, portions of the study area within CA-SLO-839 and CA-SLO-1003/1420 have a high potential for intact archaeological deposits, including midden materials and human remains.

AE-3406-01 is a new site discovered during archaeological testing for the proposed project. The top layer had been disturbed by past construction activity and landscaping, but below appeared to be an intact cultural midden. Testing produced abundant marine shell, shell beads, small mammal and other vertebrate bones, one obsidian projectile point, flaked stone tools, and toolmaking debris. Use wear indicates the tools were used for daily activities such as processing and scraping bone and wood. Fire-altered rock was also found, which is an indicator of cultural activity. Radiocarbon data suggest that the intact portions of the site are between 880 and 535 years old, although one projectile point appeared to be substantially older. The findings demonstrate that although the project area has undergone

extensive landform modification associated with road and highway construction, intact cultural deposits remain that could provide important information about the prehistoric habitation along the Pismo terrace. Caltrans concluded that the tested portion of AE-3406-01 is eligible for the National Register under criterion D for its ability to answer regional and local research questions; the State Historic Preservation Officer concurred with this finding.

The following lists the eligibility status of the known archaeological sites within the project limits:

CA-SLO-801:	National Register; California Register
CA-SLO-1128:	unevaluated
CA-SLO-839:	California Register
CA-SLO-884:	unevaluated
CA-SLO-768:	unevaluated
CA-SLO-99:	unevaluated
CA-SLO-80/H:	National Register; California Register
CA-SLO-832:	National Register; California Register
CA-SLO-1003/1420:	National Register; California Register
AE-3406-01:	National Register; California Register

Seven historic-period structures within the area of potential effect were also evaluated for eligibility for either the National Register or California Register; none were determined eligible.

Environmental Consequences

The main components of the project have the potential of impacting two recorded archaeological sites eligible for the National Register, and where intact human burials have been recorded. The fiber optic line proposed to be buried in the median is present on all build alternatives and would cross the recorded edge of CA-SLO-801; however, because of the shallow placement, it is not expected that excavation for the line would encounter intact soil.

Widening for the part-time travel lane as well as other project components for all the build alternatives would bisect a wide segment of CA-SLO-80/H; it is likely that construction excavation would occur only in disturbed soil, but site disturbance is possible. In addition, one of the locations where a soundwall could be constructed lies within the known boundaries of AE-3406-01. Because the footing for a soundwall would require substantial excavation, construction would likely have severe impacts on this site that could affect its eligibility status for the National Register in the future.

In accordance with the Section 106 process of the National Historic Preservation Act, Caltrans would pursue concurrence from the State Historic Preservation Officer on a Finding of Adverse Effect. A Treatment Plan would be prepared and presented to the Native American community for comment, and ultimately a Memorandum of Agreement would be prepared. Concurrence on both the Treatment Plan and

Memorandum of Agreement by the State Historic Preservation Officer would complete the Section 106 process.

If prehistoric or historic-period archaeological resources are discovered during any ground-disturbing activities, the contractor will immediately cease all work activities within 50 feet of the discovery and notify the Caltrans Project Manager. A Caltrans Professionally Qualified Staff Archaeologist will evaluate the significance of the discovery prior to resuming any activities that could impact the resource. If the archaeologist determines that the find embodies the significant qualities of the project site or offers previously unidentified data potential, the area of concern as determined by the Caltrans Archaeologist will be avoided or a data recovery plan will be implemented. Any required testing or data recovery and/or curation will be fully funded by Caltrans and completed by Caltrans prior to construction being resumed in the affected area. Work will not resume until authorization is received from Caltrans.

If potential human remains are discovered, Caltrans will comply with Section 15064.5 (e) (1) of the CEQA Guidelines and Public Resources Code Section 7050.5. All work activities will immediately cease in the area (within approximately 50 feet) of the discovery. A Caltrans Professionally Qualified Staff Archaeologist will inspect the remains and confirm that they are human, and if so will immediately call the county coroner in accordance with Public Resources Code Section 5097.98 and Health and Safety Code Section 7050.5. If the coroner determines the remains are Native American, the coroner will contact the Native American Heritage Commission. As provided in Public Resources Code Section 5097.98, the Native American Heritage Commission will identify the person or persons believed to be most likely descended from the deceased Native American. The most likely descendent, in consultation with Caltrans and other tribal representatives, makes recommendations for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98.

Section 4(f) of the Department of Transportation Act of 1966 provides protection for historic properties. It has been determined that none of the historic built environment properties within the project limits would be affected by the project and none of the archaeological properties within the project vicinity meet the definition of a Section 4(f) resource. See Appendix A, *Resources Evaluated Relative to the Requirements of Section 4(f)—No Use Determination*, for more information.

Avoidance, Minimization, and/or Mitigation Measures

If avoidance of historic properties is not feasible and the project therefore results in an Adverse Effect, treatment measures would be necessary to address the effects of the project on the deposits eligible for the National Register or the California Register. Treatment measures typically include data recovery excavations with full analysis and interpretations based on a research design. However, due to the nature of the freeway project, archaeological excavations prior to construction in many areas may not be feasible due to safety and access issues. Given the breadth

of this project, which covers most of the Pismo terrace, additional treatment could include ethnographic studies, compilation of previous archaeological data, and/or oral history interviews from modern descendant communities.

While numerous individual cultural resources are recorded along the US 101 corridor, it is clear that these sites represent a prehistoric landscape that was occupied for 10,000 years. Compiling and summarizing this information would help treat effects on this larger cultural landscape by providing a clear chronology of prehistoric habitation and would allow for a better understanding of the importance of this region during California's prehistory. In addition, mitigation measures should include a form of public outreach. Public interpretive materials would include, but not be limited to, an exhibit or sign approved by Caltrans, the County of San Luis Obispo and the City of Pismo Beach with input from and consultation with local Native Americans to be placed in an easily accessible location, on a website, or a static exhibit suitable for display at The History Center, San Luis Obispo Public Library, and/or other appropriate public location within the City of Pismo Beach.

Construction

Caltrans would design and implement a Worker Education Program that would be provided to all project personnel who could encounter or alter historical resources or unique archaeological properties, including construction supervisors and field personnel. No construction worker will be involved in field operations without having participated in the Worker Education Program. The Worker Education Program would include, at a minimum:

1. A review of archaeology, history, prehistory and Native American cultures associated with historical resources in the project vicinity.
2. A review of applicable state and local ordinances, laws and regulations pertaining to historic preservation.
3. A discussion of site procedures to be followed in the event that unanticipated cultural resources are discovered during implementation of the project.
4. A statement by the construction company or applicable employer agreeing to abide by the Worker Education Program, Caltrans, City of Pismo and County of San Luis Obispo policies and other applicable laws and regulations.

The Worker Education Program may be conducted in concert with other environmental or safety awareness and education programs for the project, provided that the program elements pertaining to cultural resources are provided by a qualified instructor meeting applicable professional qualifications standards.

Based on discussions with tribal representatives, fully funded by Caltrans, and subject to concurrence of the Most Likely Descendant, the following treatments of human remains will be considered (in order of preference):

1. Remains will be left in place if possible through project redesign;

2. Remains will be disinterred and reburied on the project site in a location not subject to further disturbance;
3. Remains will be disinterred and reburied in a location provided by Caltrans and/or the County of San Luis Obispo.
4. Any disinterment of human remains will be carried out with due care and respect, according to archaeological procedures. In situ Native American remains may be documented with drawings, measurements, and other non-destructive methods, but will not be photographed or subject to destructive analysis without prior approval of the Most Likely Descendant.

2.2 Physical Environment

2.2.1 Hydrology and Floodplain

Regulatory Setting

Executive Order 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. The Federal Highway Administration requirements for compliance are outlined in 23 Code of Federal Regulations 650 Subpart A.

To comply, the following must be analyzed:

- Practicability of alternatives to any longitudinal encroachments.
- Risks of the action.
- Impacts on natural and beneficial floodplain values.
- Support of incompatible floodplain development.
- Measures to minimize floodplain impacts and to preserve/restore any beneficial floodplain values affected by the project.

The base floodplain is defined as “the area subject to flooding by the flood or tide having a one percent chance of being exceeded in any given year.” An encroachment is defined as “an action within the limits of the base floodplain.”

Affected Environment

Resource: Location Hydraulics Study, February 2020.

The project is located within the Estero Bay Hydrological Unit. Pismo Creek originates in the Santa Lucia Range, and its floodplain stretches from Edna Valley north of Route 227 down Price Canyon to the Pacific Ocean. The upper reaches consist of three creeks—East and West Corral de Piedra and Canada Verde—which converge to create Pismo Creek. A floodway is designated on the Federal Emergency Management Act Flood Insurance Rate Map to the north of US 101 and

runs approximately 0.85 mile upstream. The Pismo Creek floodplain widens downstream of US 101, where it joins the Meadow Creek floodplain.

Environmental Consequences

The project would widen the southbound Pismo Creek Bridge toward the median by 8 feet. The existing structure is supported by 3 bents, each with 2 3.5-foot-diameter columns. Three new 4-foot-diameter columns would be added in line to each bent to support the additional bridge width. This would create a localized increase in water surface elevation under the bridges, but the elevations up and downstream would not be affected.

A sheet pile is proposed at the east bank of the channel. The top of the sheet pile would be level with the bottom of the slope and would not impact the existing creek cross-section.

Avoidance, Minimization, and/or Mitigation Measures

No measures have been proposed.

2.2.2 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 United States (U.S.) from any point source unlawful unless the discharge complies with a National Pollutant Discharge Elimination System (Pollutant Discharge) 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 Pollutant Discharge 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 (Regional Water 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.

- 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 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. Environmental Protection Agency in conjunction with the U.S. Army Corps of Engineers and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative that would have fewer adverse effects. The guidelines state that the U.S. Army Corps of Engineers may not issue a permit if there is a least-environmentally damaging practicable alternative to the proposed discharge that would have lesser effects on waters of the U.S. and not have any other significant adverse environmental consequences. According to the guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order.

The guidelines also restrict permitting activities that violate water quality or toxic effluent standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause “significant degradation” to waters of the U.S. In addition, every permit from the U.S. Army Corps of Engineers, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 Code of Federal Regulations 320.4. A discussion of the least environmentally damaging practicable alternative determination, if any, for the document is included in section 2.3.2 *Wetlands and Other Waters*.

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., such as groundwater and surface waters otherwise 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 (State Water Board) and Regional Water 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 Board Basin Plan. In California, Regional Water 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 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 (water discharge permits), the Clean Water Act requires the establishment of Total Maximum Daily Loads (maximum daily loads). Maximum daily loads 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 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, maximum daily loads, and Pollutant Discharge permits. Regional Water 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

Section 402(p) of the Clean Water Act requires the issuance of National Pollutant Discharge Elimination System (Pollutant Discharge) Program permits for five categories of storm water discharges, including Municipal Separate Storm Sewer Systems. A municipal separate storm sewer systems 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 Board has identified Caltrans as an owner/operator of an municipal

separate storm sewer systems under federal regulations. The Caltrans municipal separate storm sewer systems permit covers all Caltrans rights-of-way, properties, facilities, and activities in the state. The State Water Board or the Regional Water Board issues Pollutant Discharge permits for five years, and permit requirements remain active until a new permit has been adopted.

The Caltrans Municipal Separate Storm Sewer Systems 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. The Caltrans storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices, to the maximum extent practicable, and other measures as the State Water Board determines to be necessary to meet the water quality standards.

To comply with the permit, Caltrans developed the Statewide Storm Water Management Plan 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

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). The permit regulates storm water discharges from construction sites that result in a Disturbed Soil Area of one 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 one acre must comply with the provisions of the General Construction Permit. Construction activity that

results in soil disturbances of less than one acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the Regional Water Board. Operators of regulated construction sites are required to develop Storm Water Pollution Prevention Plans; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The Construction General Permit separates projects into Risk Levels 1, 2, and 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory 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 the Caltrans Statewide Storm Water Management Plan and Standard Specifications, a Water Pollution Control Program is necessary for projects with a disturbed soil area of less than one 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 comply with state water quality standards. The most common federal permits triggering 401 Certification are Clean Water Act Section 404 permits issued by the Army Corps of Engineers. The 401 permit certifications are obtained from the appropriate Regional Water Board, dependent on the project location, and are required before the Army Corps of Engineers issues a 404 permit.

In some cases, the Regional Water Board may have specific concerns with discharges associated with a project. As a result, the Regional Water Board may issue a set of requirements known as water discharge permits 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. Water discharge permits can be issued to address both permanent and temporary discharges of a project.

Affected Environment

Resources: Water Quality Assessment Report, March 2020; Natural Environment Study, May 2020.

Pismo Beach and the project area are situated within the Coast Ranges Geomorphic Province, along a narrow coastal plateau between the low-lying hills of the San Luis Range and the Pacific Ocean. Pismo Creek originates in the Coast Range foothills approximately 9 miles northeast of the project area. Runoff from various small drainages in the foothills of Edna Valley feed into West Corral de Piedra Creek and East Corral de Piedra Creek, which are tributaries that reach their

confluence with Pismo Creek about 4 miles upstream from the project location. During times of extreme rainfall and runoff, Pismo Creek reaches the Pacific Ocean approximately 0.8 mile downstream of the project area. However, during most of the year, the surface flow ends at a sand barrier on Pismo beach and the sub-surface flow travels under the sand to make a confluence with the Pacific Ocean.

The project is divided into two Hydrologic Sub-areas: 1) Point Buchon Hydrologic area and San Luis Obispo Creek Hydrologic Sub-Area (HSA) within the Estero Bay Unit (HSA Number 310.24) and 2) Point Buchon Hydrologic area and Pismo Hydrologic Sub-Area (HSA) within the Estero Bay Unit (HSA Number 310.26). The receiving water bodies for this project are Pismo Creek, San Luis Obispo Creek, and several unnamed drainages that cross the highway, all of which flow to the Pacific Ocean. Both San Luis Obispo Creek and Pismo Creek are on the 2014/2016 303(d) list for sediment.

Environmental Consequences

The disturbed soil area for this project is estimated to be 13.5 acres, which include areas to construct and stage equipment for construction. The net new impervious surface area as a result of the project was calculated at about 5 acres; the project would also replace about 4 acres of existing impervious surface.

Highway storm water runoff has the potential to affect receiving water quality. The nature of these impacts depends on the uses and flow rate or volume of the receiving water, rainfall characteristics, and highway characteristics. Heavy metals associated with vehicle tire and brake wear, oil and grease, and exhaust emissions are the main pollutants associated with transportation corridors. There are no existing treatment best management practices along US 101 within the project limits to treat roadway runoff; therefore, the water quality of the receiving water bodies would still be affected by highway runoff as a result of this project. The project would increase impervious areas and therefore potentially increase the volume and velocity of storm water flow to downstream receiving water bodies. In addition, pollutant loading could also be increased.

Construction Impacts

Short-term surface water quality impacts may result from implementation of the project; no groundwater impacts are expected. Potential surface water quality impacts may include an increase in sediments, turbidity and total dissolved solids and/or toxicity due to chemical substances originating from construction activities.

Avoidance, Minimization, and/or Mitigation Measures

The project would be designed to avoid water resources to the maximum extent practicable, promote infiltration of storm water runoff, maximize the treatment of storm water runoff, and reduce erosion by matching post-project runoff rates to pre-project rates.

Design Pollution Prevention best management practices to reduce permanent water quality impacts could include:

- Limiting work areas to protect as much existing vegetation as possible.
- Reducing impervious surfaces as much as possible.
- Reducing soil disturbance to only areas required for construction of this project.
- Incorporating retaining walls to reduce slope length.
- Including slope rounding to reduce overall slope steepness.
- Reconstructing drainage systems to use open vegetated conveyances wherever feasible.
- Where drainage systems transition from hard to soft systems, incorporating velocity dissipation scour protection.
- Including an aggressive permanent erosion control design, including compost and native plant seed mix to allow slopes to revegetate faster and reduce long-term impacts from erosion.
- Replacing planting where vegetation was removed.
- Incorporating best management practices into the design and operation.
- Preserving existing vegetation outside of the active work area.

A Storm Water Pollution Prevention Plan would be prepared for the project. The following are selected best management practices that could be included in the project:

Temporary Soil Stabilization

- Minimize active disturbed soil areas during the rainy season using scheduling techniques.
- Preserve existing vegetation to the maximum extent feasible.
- Implement temporary protective cover/erosion control on all non-active disturbed soil areas and soil stockpiles.
- Control erosive forces of storm water runoff with effective storm flow management such as temporary concentrated flow conveyance devices, earthen dikes, drainage swales, lined ditches, outlet protection/velocity dissipation devices, and slope drains as determined feasible.

Temporary Sediment Controls

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

- To further help prevent sediment discharge stabilized construction site entrances, temporary drainage inlet protection, and street sweeping and vacuuming will be necessary.
- Implement appropriate wind erosion controls year-round.

Temporary Water Quality Controls

- Use pre-disturbed areas, and select appropriately sized equipment for the job.
- Time construction within and near the creek during the dry season.
- When working near streams, implement erosion and sediment controls to keep sediment out of stream channel.
- Minimize disturbance by selecting the narrowest crossing location; limiting the number of equipment trips across a stream during construction; and minimizing the number and size of work areas (equipment staging areas and spoil storage areas).
- Isolate equipment staging and spoil storage areas away from the stream channel using appropriate storm water control barriers. Provide stabilized access to the stream when in-stream work is required.

Streambank Sediment Control and Clear Water Diversion

- Install temporary large sediment barriers to control sediment. Temporary large sediment barriers should be installed only where sediment-laden water can pond, thus allowing the sediment to settle out.
- Install fiber rolls along slope contour above the high-water level to intercept runoff, to reduce flow velocity, and to release the runoff as sheet flow and provide removal of sediment from the runoff. In a stream environment, fiber rolls should be used in conjunction with other sediment control methods.
- Use a gravel bag berm or barrier to intercept and slow the flow of sediment-laden sheet flow runoff.

2.2.3 Noise

Regulatory Setting

The California Environmental Quality Act and the National Environmental Policy Act of 1969 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 CEQA and NEPA.

California Environmental Quality Act

CEQA requires a strictly baseline-versus-build analysis to assess whether a proposed project will have a noise impact. If a project is determined to have a significant noise impact under CEQA, then CEQA 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 NEPA/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 CEQA.

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 (NAC) 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 criteria for residences (67 A-weighted decibels) is lower than the noise abatement criteria for commercial areas (72 A-weighted decibels).

Table 2-1 lists the noise abatement criteria for use in the NEPA/23 CFR 772 analysis.

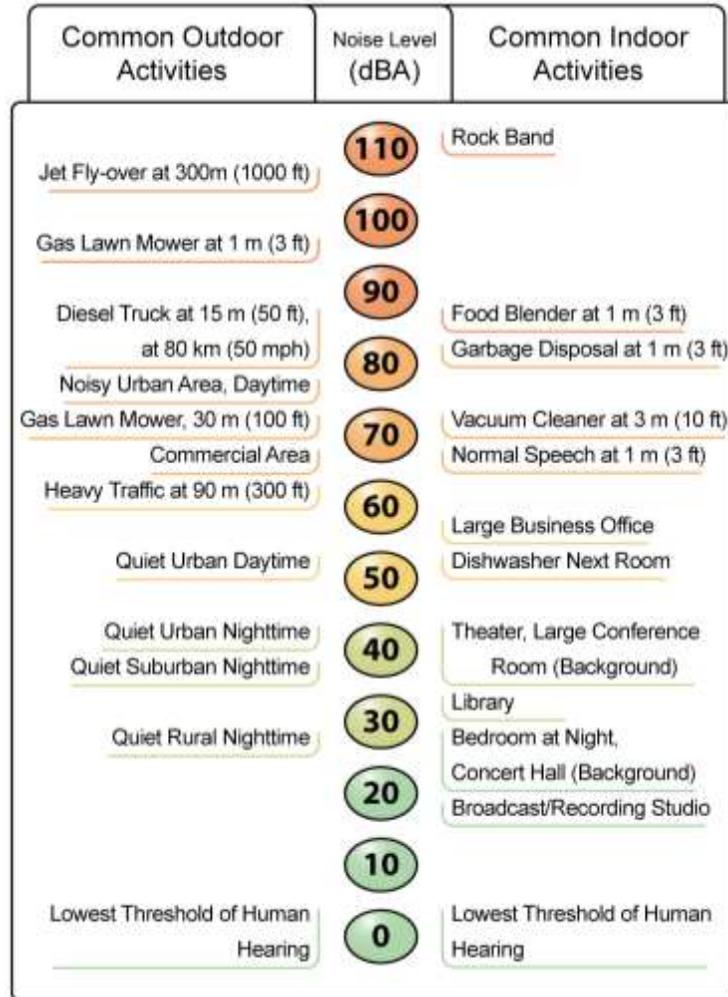
Table 2-1 Noise Abatement Criteria

Activity Category	NAC, 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	67 (Exterior)	Residential.
C	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 through D or F.
F	No Noise Abatement Criteria—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.

Activity Category	NAC, Hourly A-Weighted Noise Level, Leq(h)	Description of Activity Category
G	No Noise Abatement Criteria—reporting only	Undeveloped lands that are not permitted.

According to the 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 A-weighted decibels 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 A-weighted decibel of the noise abatement criteria. Figure 2-16 lists 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 2-16 Noise Levels of Common Activities



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 and approved to move forward at the time of final design are incorporated into the project plans and specifications. This document discusses noise abatement measures that could be incorporated in the project.

The 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 decibels 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 decibels 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

Resources: Noise Study Report, February 2020; Noise Abatement Decision Report, February 2020.

The project is classified as a Type 1 by the Federal Highway Administration, as it is federally funded and would increase the number of through-lanes. Freeway traffic is the main source of noise in the project vicinity and can be excessive relative to the surrounding activities. However, the high traffic volumes that occur in the southbound direction during peak hours cause congestion and lower speeds; lower speeds create a quieter environment than a freeway with traffic at the posted speed. Outside of the peak period, when traffic speeds are higher, noise levels exceed the noise abatement criteria at many locations.

As described in Table 2-2, land uses identified in the project area are:

- Activity Category B: residences
- Activity Category C: outdoor park/sports, recreation, churches, day care center, schools
- Activity Category D: churches, day care center, schools
- Activity Category E: restaurants, hotels/motels

For the purposes of the noise study, noise measurements were taken during peak hours between June and August 2016 and simultaneous traffic counts were conducted during the measurement period. The purpose of this task was to calibrate the noise modeling software to make accurate predictions for existing

peak-period conditions as well as future Build and No-Build scenarios. For the existing peak-period noise model input, actual peak-period traffic speeds were obtained from the count station in Pismo Beach and averaged to 30 miles per hour in the southbound direction and full speed in the northbound. Adjusting for future traffic volumes, future No-Build condition noise levels were based on 27 miles per hour southbound. Traffic noise was evaluated for three scenarios: existing (2016), design year (2046) No-Build condition, and design year (2046) for the Alternative 1 truck-climbing lane alternative. (This alternative is the “maximum” build condition, as it includes the most design features and will have the largest impact on the noise environment.)

The noise impact from a project is determined by comparing predicted future noise levels with the built project to existing noise levels, as well as to the noise abatement criteria for the applicable land use activity category. The noise abatement criteria are based on interference with speech communication; they are a compromise between noise levels that are desirable and those that are achievable, and they are not design goals. Although all developed land uses were evaluated in the analysis, noise abatement is considered only for areas of frequent human use that would benefit from a lowered noise level. Therefore, the analysis focused on receptor locations with defined outdoor activity areas, such as residential backyards and common-use areas at multi-family residences or outdoor recreation areas. Proximity to the freeway was also considered, as receptors closer to the freeway are more likely to be impacted. All measurements on the northbound side of the freeway were taken at residential receptor locations except for one, taken at the Pismo Beach Sports Complex; on the southbound side, the measurements were taken at receptor locations representing a variety of activity categories. Table 2-2 describes the noise abatement criteria as decibel levels for the activity categories.

The portion of the project where widening for the part-time travel lane would occur was divided into four segments, grouped by similar traffic volumes within each segment. (Noise measurements and modeling were also conducted at four residential locations outside of these segments, where noise levels could still be affected by the project due to increased speeds.)

Segment 1

Located in Shell Beach, this segment extends from the Shell Beach Drive undercrossing at Spyglass Drive to about 2,700 feet northward (across from Beachcomber Drive). Land uses in this segment are mostly residential, but also include tennis courts. Four residential receptor locations were analyzed within this segment. There are no receptors on the northbound side of the freeway within this segment.

Segment 2

This segment extends from Spyglass Drive to the North Pismo separation at Mattie Road; it is a mix of commercial/retail, residential, and recreational uses. It includes

Shell Beach Elementary School. A total of 33 receptor locations were analyzed from both sides of the freeway within this segment, including the elementary school and two businesses with outdoor seating areas. The remainder of the receptor locations were residential.

Segment 3

This segment extends from the vicinity of the Dolliver Street off-ramp to Pismo Creek, including the Pismo Beach Sport Complex on the northbound side. Within this segment is a mix of commercial/retail, residential, and recreational uses. A total of 21 receptor locations were analyzed from both sides of the freeway within this segment, including three businesses with outdoor seating areas. The remainder of the receptor locations were residential.

Segment 4

This segment is on the southbound side of the freeway only and contains the area from Pismo Creek to the project's southern limits. Two receptor locations were analyzed: one from the mobile home park and the other from the RV park.

Environmental Consequences

As a result of reduced congestion and the resulting increase in traffic speeds, noise levels within the project limits are expected to increase with the project. Increased traffic volumes would also increase noise over time, but this is not expected to be a major contributor to the overall noise level. (Traffic noise increases by 3 decibels for every doubling of traffic volumes. Projected traffic volumes are expected to increase by 10 percent by 2046.)

Using predicted traffic volumes, traffic speeds, and travel lane locations, the expected noise level at each receptor location was calculated for the No-Build and for the Alternative 1 truck-climbing lane variation in the year 2046. These levels were then compared to the noise abatement criteria for the applicable activity category.

The noise study modeling indicates that the project would not result in a substantial increase in noise (considered to be 12 decibels or higher) at any of the measured receptor locations. Regardless, some receptor locations within the project limits are predicted to approach or exceed the noise abatement criteria of 67 decibels, so noise abatement measures must be considered.

Further analysis was done to determine the efficacy of soundwalls at strategic locations within the project limits; 13 locations were identified where noise levels could be reduced by 7 or more decibels by a soundwall. Six of these locations were on the southbound side of the freeway where 12 receptor locations were identified as approaching or exceeding the noise abatement criteria; seven were on the northbound side where 15 receptor locations were identified as approaching or exceeding the noise abatement criteria. Of the 13 wall locations evaluated, only

three met all the necessary criteria to be carried forward as reasonable and feasible noise abatement measures. These are shown in Table 2-2 and Figure 2-17.

Segment 1

These receptor locations in Shell Beach, as well as those northward of segment 1, would experience a 3-decibel to 4-decibel increase in the noise levels with the Build condition, which is barely detectable to the human ear, however that increase would cause two residential receptor locations within segment 1 to reach levels that exceed the applicable noise abatement criteria. Within this segment, one soundwall was evaluated but it did not pass the reasonableness criteria due to the low numbers of receptors that would benefit.

Segment 2

These receptor locations would experience noise level increases in the range of 4 to 8 decibels with the built condition. Of the locations analyzed, six would approach or exceed the applicable noise abatement criteria: four residences on the northbound side and two residences and one outdoor seating area on the southbound side. Within this segment, three soundwalls were evaluated in the southbound direction and four in the northbound. Two of the southbound walls were found to be both reasonable and feasible and therefore are being evaluated further for inclusion in the final project design. The other five walls did not meet the reasonableness criteria due to the low numbers of receptors that would benefit.

Segment 3

Locations in the southbound direction would experience noise level increases in the range of 3 to 8 decibels with the Build condition. Of the locations analyzed, two residences would approach or exceed the applicable noise abatement criteria. The northbound side would experience a maximum increase in noise levels of only 3 decibels but, because the noise levels in that area are already high, three of the residential receptor locations would approach or exceed the applicable noise abatement criteria. Within this segment, one soundwall was evaluated in the southbound direction and three in the northbound. One of the northbound walls was found to be both reasonable and feasible and therefore is being evaluated further for inclusion in the final project design. The other three walls did not meet the reasonableness criteria due to the low numbers of receptors that would benefit.

Segment 4

These receptor locations are expected to experience a 3-decibel to 5-decibel increase in noise levels with the Build condition, but would remain below the applicable noise abatement criteria, therefore no abatement measures were considered.

Figure 2-17 Potential Soundwall Locations

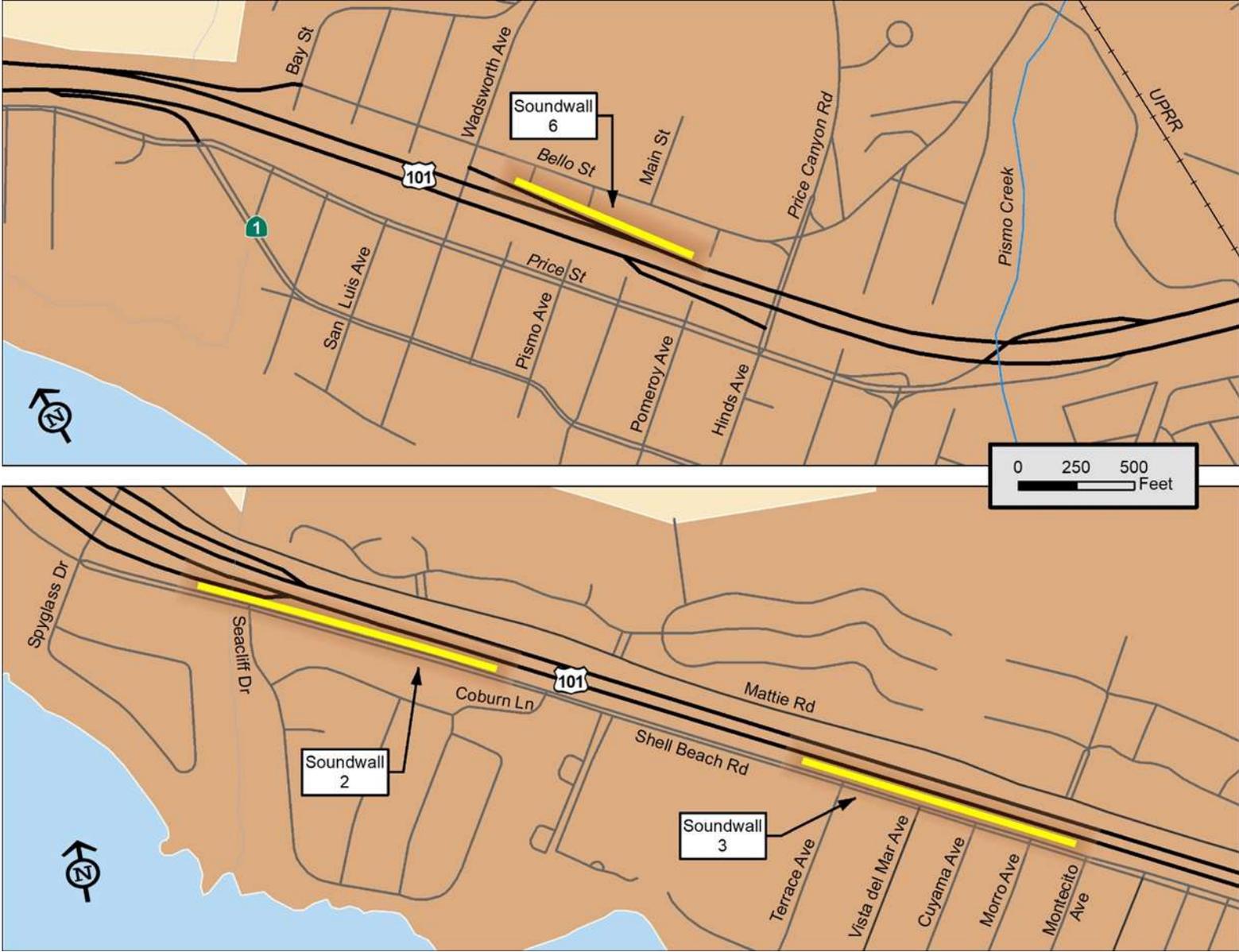


Table 2-2 Soundwalls as Noise Abatement

Soundwall	Location	Height (feet)	Length (feet)	Noise Reduction (decibels)	Benefitted Receptors
SB-2	Segment 2	8	1300	7	46
SB-3	Segment 2	10	1200	8	52
NB-6	Segment 3	12	800	7	25

Locations Evaluated but Rejected for Noise Abatement

Although all locations within the project limits that would experience a substantial increase in noise or that would reach levels that approached noise abatement criteria were evaluated for noise abatement measures, the measures considered (soundwalls) did not meet the reasonableness criteria at many of these locations. As a result, these locations could experience noise impacts as an unavoidable consequence of the project. These areas that could experience noise impacts but that would not receive any abatement measures are described below.

Segment 1

The southbound direction contains residential properties that would not experience a substantial increase in noise levels, but nonetheless the increase is expected to cause an exceedance of the applicable noise abatement criteria.

Segment 2

The southbound direction contains residential and commercial/retail properties, but there would be no exceedances of the applicable noise abatement criteria. The northbound direction contains residences that would experience noise levels that exceed the applicable noise abatement criteria.

Segment 3

The southbound direction contains residential properties and commercial/retail properties, while the northbound direction contains all residential locations. Some of these locations on both sides of the freeway would experience noise levels that exceed the applicable noise abatement criteria.

Segment 4

This segment would not experience noise impacts as a result of the project, and there would be no exceedances of applicable noise abatement criteria.

Secondary Impacts

Though mitigating the noise impacts that would result from the project at some locations, the inclusion of soundwalls in the final project would have substantial impacts on the visual quality of the region and on cultural resources. The project would add a considerable amount of additional urbanizing features through the

wider freeway lanes, higher median barrier, retaining walls, and the lane-use signals and signs that would contribute to a decrease in the visual quality. Soundwalls would further this degradation by creating another built feature along the corridor. More substantially, walls built on the southbound side would block the ocean views for which the area is known. (See section 2.1.2 *Visual/Aesthetics* for more information, and in particular the discussion on soundwalls.) In addition, one of the wall locations under consideration is sited on an archaeological resource. Construction of the wall would likely have severe impacts to the site. (See section 2.1.3 *Cultural Resources*.) The wall location on the northbound side of the freeway would require removing a substantial amount of heavy vegetation, including mature eucalyptus trees, but otherwise would have minimal adverse impacts.

Construction Noise

During construction of the project, noise from construction activities would add to ambient noise levels in the vicinity and may at times dominate the environment in the area of construction. Caltrans standard specifications restrict construction noise to 86 A-weighted decibels L_{max} (the maximum acceptable noise level that can be transmitted from the site when measuring the hourly average using a system in which the decibel values of sounds at low frequencies are reduced) at 50 feet from job site activities from 9:00 p.m. to 6:00 a.m., however the local noise ordinance could be more restrictive. Construction equipment used for road construction typically operates between about 70 and 90 decibels at 50 feet. Most residences along the corridor are at least 120 feet from where construction would be taking place. Based on the formula that noise produced by construction equipment would be reduced at a rate of 6 decibels per doubling of the distance, noise levels at the residences nearest to construction activity could be expected to range between a maximum of 78 and 84 decibels, which is consistent with a noisy, urban, daytime environment. Bridge widening could periodically be louder during certain activities.

Avoidance, Minimization, and/or Abatement Measures

Federal noise abatement measures are restricted to: noise barriers; traffic management measures including, but not limited to, prohibition of certain vehicle types, time-use restrictions for certain vehicle types, modified speed limits, and exclusive lane designations; acquisition of a buffer zone; and/or noise insulation. (Noise insulation applies to only specific types of particularly noise-sensitive activities.)

The project could incorporate pavement that reduces some traffic noise, but this is only a temporary measure as the noise-reducing characteristic decreases over time. Solid concrete safety barrier on the outside shoulders would also decrease the noise from tire rotation somewhat, but is not proposed for this project. It also would not address noise from loud engines, truck brakes, or horns.

Soundwalls have been evaluated and could fully mitigate impacts from noise for adjacent residences, but many residents would still experience elevated noise levels as a result of the project. Final recommendations on any federal abatement measure is determined during the public involvement processes and the project's final design.

Limiting construction to daylight hours would eliminate most construction noise concerns. If this cannot be achieved, surrounding residents will be notified in advance of the construction schedule. Notification will include information on upcoming construction activities that are likely to disrupt normal nighttime activities. In addition, noise metering will be conducted and checked regularly to assure activities remain within allowable levels. If necessary, temporary sound barriers could be constructed.

2.3 Biological Environment

2.3.1 Natural Communities

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed in section 2.3.4 *Threatened and Endangered Species*. Wetlands and other waters are discussed in section 2.3.2.

Affected Environment

Resource: Natural Environment Study, May 2020.

The land next to the highway is dominated by disturbed, ruderal roadside vegetation with large patches of ice plant or other ornamental species. Patches of coastal scrub exist on the north side of the highway in the vicinity of Mattie Road, extending into the median near the southbound Highway 1 off-ramp, as well as between Pismo Creek and the railroad. In these regions, the coastal scrub consists of coyote bush, poison oak, California sagebrush, and sticky monkeyflower. There is oak woodland at the northern end of the project near San Luis Obispo Creek, populated mostly by coast live oak trees, with a poorly developed understory. Individual mature trees are scattered throughout the project limits, particularly in the median, where most of the project disturbance would occur. The trees within the project limits are considered more of a scenic resource than a biological one, and therefore are covered in section 2.1.2 *Visual/Aesthetics*.

Riparian habitat in the form of arroyo willows occurs at San Luis Creek but would not be affected by the project. The vegetative community along Pismo Creek within the project limits is heavily altered and disturbed; arroyo willow habitat was recently established on the west bank of the creek as part of the

mitigation plan for the recently completed project to repair scour under the bridge, but would likely be disturbed during construction. Both sides of the channel support mainly ornamental landscaping and/or exotic weedy species, including spider gum and silk oak. Chilean fig is also abundant in patches along the bank slopes. A small patch of native arroyo willow with an understory of California blackberry occurs along the eastern bank downstream from the bridges. No aquatic vegetation was found growing in the channel within the biological study area, though patches of broadleaf cattail and other emergent species occur within the channel upstream and downstream.

Within the project area, Pismo Creek supports unvegetated open water stream habitat that is often cloudy with visible algal growth, but nonetheless is suitable for fish and other aquatic species. More discussion on Pismo Creek can be found in section 2.3.2 *Wetlands and Other Waters*.

Environmental Consequences

Alternative 1 and the truck-climbing lane variation would have the greatest impacts to coastal scrub habitat with 506 square feet of permanent impacts. Alternative 2 would have no impacts on coastal scrub. All build alternatives would temporarily impact about 2.5 acres during construction, which could be restored after construction.

No permanent impacts to arroyo willow riparian habitat are expected with any of the build alternatives, but all would temporarily impact about 3,000 square feet near Pismo Creek. These areas would also be restored after construction completion.

Avoidance, Minimization, and/or Mitigation Measures

Prior to construction, in accordance with CEQA, Caltrans would prepare a Mitigation and Monitoring Plan to track and record actions taken to counter impacts to vegetation and natural habitats. The Mitigation and Monitoring Plan would be modified as necessary to address permit conditions or other changes.

Standard Plans include measures to address hazardous materials spills during construction and erosion control. In addition, the following minimization measures are recommended for inclusion in the Mitigation and Monitoring Plan:

1. Prior to any ground-disturbing activities, fencing will be installed around environmentally sensitive areas and around the dripline of trees to be protected within project limits. These areas will be noted on design plans.
2. Disturbed areas of coastal scrub would be replanted with appropriate native species after construction has completed. Arroyo willows would be replanted at a 3 to 1 ratio.
3. During construction, Caltrans will ensure that the spread or introduction of invasive exotic plant species will be avoided to the maximum extent possible. When practicable, invasive exotic plants in the project site will be removed

and properly disposed of. All vegetation removed from the construction site will be taken to a certified landfill to prevent the spread of invasive species. If soil from weedy areas must be removed off-site, the top 6 inches containing the seed layer in areas with weedy species will be disposed of at a certified landfill.

2.3.2 Wetlands and Other Waters

Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (33 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, Clean Water Act jurisdiction extends beyond the ordinary high water mark to the limits of the adjacent wetlands.

To classify wetlands for the purposes of the Clean Water Act, a three-parameter approach is used that includes the presence of: hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils formed during saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the Clean Water Act.

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 the 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 Part 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 that would have fewer adverse effects. The Guidelines state that the U.S. Army Corps of Engineers may not issue a permit if there is a "least-environmentally-damaging practicable alternative" to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

The Executive Order for the Protection of Wetlands (Executive Order 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, Executive Order 11990 states that a federal agency, such as the Federal Highway Administration and/or Caltrans, as assigned, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: (1) that there is no practicable alternative to the construction and (2) the proposed project includes all practicable measures to minimize harm. A Wetlands Only Practicable Alternative Finding must be made.

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

The Regional Water 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 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 section 2.2.2 *Water Quality and Storm Water Runoff* for more details.

Affected Environment

Resource: Natural Environment Study, May 2020.

Pismo Creek is considered “other waters of the U.S.” under the Clean Water Act and is defined as the area at or below the ordinary high water mark. Although there is riparian habitat upstream and downstream of the project location, the active channel within the project area is unvegetated and normally flows all year during non-drought periods. The entire creek bed is within the jurisdiction of the California Department of Fish and Wildlife; the active creek channel falls within the jurisdictions of the U.S. Army Corps of Engineers and the Central Coast Regional Water Quality Control Board. A jurisdictional determination from the U.S. Army Corps of Engineers is anticipated during the design phase and would be required before it issued a Section 404 permit.

The creek supports habitat for the south-central California coast steelhead and tidewater goby, as well as other native species such as the western pond turtle and California red-legged frog.

Environmental Consequences

No new piers would be placed within the Pismo Creek channel, but reconstruction of the slope paving would involve placing sheet piling within the creek, creating approximately 9 square feet of permanent impacts. Use of cofferdams would be required during construction, creating about 8,300 square feet of temporary impacts. The creek channel is within the jurisdictions of the California Department of Fish and Wildlife, the Regional Water Quality Control Board, and the Army Corps of Engineers.

Other construction activities would cause an additional 4,600 square feet of temporary impacts to Pismo Creek within the jurisdictions of the California Department of Fish and Wildlife and the Regional Water Quality Control Board.

Avoidance, Minimization, and/or Mitigation Measures

In addition to standard provisions that require actions to control hazardous waste and pollutants, erosion, and the spread of invasive species during construction, the following minimization measures are recommended for inclusion in the Mitigation and Monitoring Plan under CEQA:

1. Prior to any ground-disturbing activities, fencing will be installed around jurisdictional waters, environmentally sensitive habitat areas, and the dripline of trees to be protected within project limits. Caltrans-defined environmentally sensitive areas will be noted on design plans and delineated in the field prior to the start of construction activities.
2. Construction activities in jurisdictional waters will be timed to occur between June 1 and October 31 in any given year, or as otherwise directed by the regulatory agencies, when the surface water is likely to have a low flow rate

or at seasonal minimum. Deviations from this work window will be made only with permission from the relevant regulatory agencies.

3. During construction, cleaning and refueling equipment and vehicles will occur only within a designated staging area at least 100 feet from other waters and other aquatic areas. The staging areas will conform to best management practices applicable to attaining zero discharge of stormwater runoff. Equipment and vehicles will be checked and maintained by the contractor daily to ensure proper operation and avoid potential leaks or spills.
4. Stream contours will be restored as close as possible to their original condition.
5. To mitigate for impacts to federal jurisdictional other waters, enhancement plantings are anticipated to be proposed onsite and in-kind. A Caltrans biologist and landscape architect will develop planting specifications to assure survival of planted vegetation. The Pismo Creek corridor is thick with non-native trees and shrubs and could benefit from replacing exotics with native species such as arroyo willow. Impacts to native arroyo willow trees that are larger than 6 inches in diameter at breast height would be offset by replacement planting within the project limits using a 3 to 1 ratio for each arroyo willow tree removed.

2.3.3 Animal Species

Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service, the National Oceanic and Atmospheric Administration's National Marine Fisheries Service, and the California Department of Fish and Wildlife are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with animals not listed or proposed for listing under the federal or state Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in section 2.3.4 *Threatened and Endangered Species*. All other special-status animal species are discussed here, including the California Department of Fish and Wildlife fully protected species and species of special concern, and the U.S. Wildlife Service or National Marine Fisheries Service candidate species.

Federal laws and regulations relevant to wildlife include the following:

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

State laws and regulations relevant to wildlife include the following:

- California Environmental Quality Act

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

Affected Environment

Resource: Natural Environment Study, May 2020.

White-tailed Kite and Other Nesting Birds

The white-tailed kite is a raptor protected under the Migratory Bird Treaty Act and is fully protected under the California Endangered Species Act. This protection is conveyed on those animals that are rare or face possible extinction; no impacts to the species are permitted. The kite is a year-long resident ranging throughout the valley and coastal lowlands in California and, most commonly, near agricultural areas. Nesting and roosting occur in dense, broad-leafed deciduous groves of trees. Breeding occurs from February to October, peaking from May to August. No white-tailed nesting habitat occurs within the project area, and only marginal foraging habitat is present. However, white-tailed kite have been seen on the coast at Pismo Beach and therefore could be in the project vicinity during foraging activities or while flying to and from nesting sites.

White-tailed kite was not seen during surveys, and no nesting habitat occurs within the biological survey area, but several individuals were recorded nearby in 2019. Numerous other bird species, both native and non-native, were seen in the project vicinity and could be nesting within the project limits in trees, shrubs, and under the bridges. American cliff swallow mud nests were found under the US 101 southbound bridge over Pismo Creek.

Western Pond Turtle

The western pond turtle is considered a species of special concern by the California Department of Fish and Wildlife. These turtles live where water persists year-round in ponds along foothill streams or in broad washes near the coast. They favor ponds with surfaces such as vegetation mats or floating logs on which they can bask. They are mostly aquatic, leaving the water mainly to reproduce, during summer dormancy, and possibly during the winter. In warmer areas, such as within the project area, pond turtles may be active all year.

The species was not observed during surveys, but suitable aquatic habitat is within the biological study area. During construction of another project in the area—the Pismo Scour Repair Project—a single adult western pond turtle was relocated during dewatering activities. There are other occurrence records for the western pond turtle in Pismo Creek and within ponds located in the watershed.

Environmental Consequences

White-tailed Kite and Other Nesting Birds

Project impacts to the white-tailed kite must be fully avoided. In the absence of the kite, however, vegetation removal could impact active bird nests and any eggs or young residing in nests, while construction activities too near active nests could affect nest success.

Western Pond Turtle

If western pond turtles are present onsite, construction activities could result in injury to or death of a western pond turtle during diversion/dewatering. The potential need to capture and relocate this species would subject individuals to stresses that could result in adverse effects. Erosion and sedimentation could also occur, which would directly or indirectly affect water quality. The potential for these impacts is anticipated to be low due to the limited area of impact associated with the project.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures are recommended for inclusion in the Mitigation and Monitoring Plan under CEQA.

White-tailed Kite and Other Nesting Birds

The following measures apply to all birds protected by the Migratory Bird Treaty Act and California Fish and Game Code. These measures are expected to allow avoidance of all impacts to nesting birds.

1. Tree removal will be scheduled to occur from September 2 to January 31, outside of the typical nesting bird season, to avoid potential impacts to nesting birds. If construction activities are proposed to occur within 100 feet of potential habitat during the nesting season (February 1 to August 31), a nesting bird survey will be conducted by a biologist determined qualified by Caltrans no more than two weeks (14 days) prior to construction. If an active nest is found, Caltrans will determine an appropriate buffer based on the habits and needs of the species. The buffer area will be avoided until a qualified biologist has determined that juveniles have fledged and are no longer dependent upon the nest.
2. Active bird nests will not be disturbed and eggs or young of birds covered by the Migratory Bird Treaty Act and California Fish and Game Code will not be killed, destroyed, injured, or harassed at any time. Readily visible exclusion zones where nests must be avoided will be established by a qualified biologist using fencing. It is recommended that bird nests be excluded from the existing bridge. Nesting bird exclusion methods may include: installing exclusion netting; removing/knocking down nests before they contain eggs; or other methods approved by California Department of Fish and Wildlife. The proper time for installing bird exclusion netting is outside of the typical nesting season.

3. Trees to be removed will be noted on design plans. Prior to any ground-disturbing activities, fencing will be installed around the dripline of trees to be protected within project limits.

Western Pond Turtle

Prior to construction, a biologist determined qualified by Caltrans will survey the biological study area and, if present, capture and relocate any western pond turtles to suitable habitat upstream. If western pond turtles or other special concern aquatic species are observed during construction, they will likewise be relocated to suitable upstream habitat by a qualified biologist.

2.3.4 Threatened and Endangered Species

Regulatory Setting

The main federal law protecting threatened and endangered species is the Federal Endangered Species Act (Federal 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 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 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 Act), California Fish and Game Code Section 2050, et seq. The California 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 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 Act allows for take incidental to otherwise lawful development projects; for these actions, an incidental take permit is issued by the California Department of Fish and Wildlife. For species listed under both the Federal Act and the California Act

requiring a Biological Opinion under Section 7 of the Federal Act, the the California Department of Fish and Wildlife may also authorize impacts to the California 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 U.S., 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

Resource: Natural Environment Study, May 2020.

California Red-legged Frog

The California red-legged frog is federally threatened and a California species of special concern. These frogs breed in permanent or temporary freshwater bodies that will hold water through July, though they require permanent water for hydration. They will move between aquatic sites to breed, forage, or escape drying conditions. Their overland movements can extend more than 2 miles, often in straight lines and without regard to habitat type.

No protocol surveys were conducted for the California red-legged frog, and the species was not seen during recent field surveys. There is no federally designated critical habitat for the California red-legged frog within the project area. The species is not expected to occur within the area of disturbance, but it was seen in a Pismo Creek tributary in 2005. For this reason, its presence during construction cannot be completely ruled out, and presence has been inferred.

Steelhead

Steelhead trout are the anadromous (ocean-going) form of rainbow trout and are federally threatened and a California species of special concern. Adults spawn and juveniles rear in freshwater. The juveniles then either remain in freshwater or migrate to the ocean to mature, subsequently returning to freshwater as adults to reproduce.

Pismo Creek provides migration habitat for adult and juvenile south-central California coast steelhead and is designated critical habitat. In 2019, individuals were relocated from the project area prior to construction on the bridge piers. Because of the critical habitat designation and the recent presence of these fish,

it has been inferred that the project area could contain adult and juvenile steelhead at the time of construction.

Tidewater Goby

The tidewater goby is federally endangered and a California species of special concern. This fish resides in coastal lagoons and the lower reaches of freshwater creeks flowing into coastal lagoons. Pismo Creek is designated critical habitat for this species; in 2019, individuals were relocated from the project area prior to construction on the bridge piers. Because of the critical habitat designation and the recent presence of these fish, it has been inferred that the project area could contain the tidewater goby at the time of construction.

Federally designated critical habitat for tidewater goby occurs in the western portion of the biological study area at Pismo Creek; the creek bed supports the construction of burrows for reproduction.

Environmental Consequences

California Red-legged Frog

If frogs were present on the project site, construction could result in the injury or mortality of individuals present in aquatic areas or those residing in small mammal burrows within upland habitat. It is possible that frogs would need to be captured and relocated if found within an area needing to be dewatered. Frog habitat would be impacted during construction, but has no specific protection other than as discussed in section 2.3.3 *Wetlands and Other Waters*.

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

Steelhead

The addition of sheet pile within the riverine habitat (the active channel, below the ordinary high water mark) would result in permanent impacts and could also temporarily alter aquatic habitat quality. However, this activity would be implemented when steelhead are not likely to be present in the project area. Vegetation removal to allow access to piers could somewhat affect shading and microhabitat temperature characteristics along the edges of the river and could alter the stability of the banks. These effects, however, also would be temporary. Vegetation proposed for removal consists of younger plants that would be replaced by native riparian plantings in a relatively short timeframe.

Diversion, dewatering, and construction in aquatic areas used by migrating steelhead could result in direct impacts to the species through injury or mortality as steelhead stranded in residual wet areas are captured, handled, and relocated. The activities could also impact the structure of the streambed substrate, causing erosion and sedimentation, which could directly or indirectly affect water quality for steelhead. These impacts would likely be temporary and

rectified once the pre-construction stream flow conditions are restored. In total, the project would result in approximately 3.4 acres of temporary impacts to steelhead critical habitat along about 1,500 linear feet of the channel.

The Federal Act Section 7 effects determination is that the proposed project may affect, and is likely to adversely affect, the south-central California coast steelhead. The proposed project may affect, and is likely to adversely affect, steelhead critical habitat.

Tidewater Goby

Tidewater goby within Pismo Creek would be subject to the same impacts during construction as described for steelhead. Approximately 2,750 square feet of federally designated tidewater goby critical habitat would be temporarily impacted by turbidity during sheet pile installation locally and downstream of the bridges, but there would be no permanent impacts to tidewater goby habitat as a result of the project.

The Federal Act Section 7 effects determination is that the proposed project may affect, and is likely to adversely affect, tidewater goby. The proposed project may affect, and is likely to adversely affect, tidewater goby critical habitat.

Avoidance, Minimization, and/or Mitigation Measures

The following avoidance and minimization measures are recommended for inclusion in the Mitigation and Monitoring Plan under CEQA.

California Red-legged Frog

Caltrans anticipates the project will qualify for Federal Act incidental take coverage under the *Programmatic Biological Opinion for Projects Funded or Approved under the Federal Highway Administration's Federal Aid Program*. While all the measures in the California red-legged frog programmatic biological opinion will be adhered to, the following measures are the ones most applicable to this project:

1. Only U.S. Wildlife Service-approved biologists will participate in activities associated with the capture, handling, and monitoring of California red-legged frogs.
2. Ground disturbance will not begin until written approval is received from the U.S. Wildlife Service that the biologist is qualified to conduct the work.
3. A U.S. Wildlife Service-approved biologist will survey the project area no more than 48 hours before the onset of work activities. If any life stage of the California red-legged frog is found and these individuals are likely to be killed or injured by work activities, the approved biologist will be allowed sufficient time to move them from the site before work begins. The U.S. Wildlife Service-approved biologist will relocate the California red-legged frogs the shortest distance possible to a location that contains suitable habitat and will

not be affected by the activities associated with the project. The relocation site will be in the same drainage to the extent practicable. Caltrans will coordinate with the U.S. Wildlife Service on the relocation site prior to the capture of any California red-legged frogs.

4. Before any activities begin on a project, a U.S. Wildlife Service-approved biologist will conduct a training session for all construction personnel. At a minimum, the training will include a description of the California red-legged frog and its habitat, the specific measures that are being implemented to conserve California red-legged frog for the current project, and the boundaries within which the project may be accomplished. Brochures, books, and briefings may be used in the training session, provided that a qualified person is on hand to answer any questions.
5. A U.S. Wildlife Service-approved biologist will be present at the work site until all California red-legged frogs have been removed, workers have been instructed, and disturbance of the habitat has been completed. After this time, Caltrans will designate a person to monitor onsite compliance with all minimization measures. The U.S. Wildlife Service-approved biologist will ensure that this monitor receives the training outlined in measure 4 above and in the identification of California red-legged frogs. If the monitor or the U.S. Wildlife Service-approved biologist recommends that work be stopped because California red-legged frogs would be affected in a manner not anticipated by Caltrans and U.S. Wildlife Service during review of the proposed action, he or she will notify the resident engineer immediately. The resident engineer will resolve the situation by requiring that all actions that are causing these effects be halted. When work is stopped, the U.S. Wildlife Service will be notified as soon as possible.
6. During project activities, all trash that may attract predators or scavengers will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.
7. All refueling, maintenance and staging of equipment and vehicles will occur at least 60 feet from the riparian habitat or water bodies and not in a location from where a spill would drain directly toward aquatic habitat. The monitor will ensure contamination of habitat does not occur during such operations. Prior to the onset of work, Caltrans will ensure that a plan is in place for prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.
8. Habitat contours will be returned to a natural configuration at the end of the project activities. This measure will be implemented in all areas disturbed by activities associated with the project, unless U.S. Wildlife Service and Caltrans determine that it is not feasible or modification of original contours would benefit the California red-legged frog.

9. Caltrans will attempt to schedule work for times of the year when impacts to the California red-legged frog would be minimal. For example, work that would affect large pools that may support breeding would be avoided, to the maximum degree practicable, during the breeding season (November through May). Isolated pools that are important to maintain California red-legged frogs through the driest portions of the year would be avoided, to the maximum degree practicable, during the late summer and early fall. Habitat assessments, surveys, and technical assistance between Caltrans and the U.S. Wildlife Service during project planning will be used to assist in scheduling work activities to avoid sensitive habitats during key times of year.
10. To control sedimentation during and after project completion, Caltrans will implement best management practices outlined in any authorizations or permits issued under the authorities of the Clean Water Act received for the project. If best management practices are ineffective, Caltrans will attempt to remedy the situation immediately, in coordination with the U.S. Wildlife Service.
11. If a work site is to be temporarily dewatered by pumping, intakes will be completely screened with wire mesh not larger than 0.094 inch (2.38 mm) to prevent California red-legged frogs, tadpoles, and other aquatic organisms from entering the pump system. Water will be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. Upon completion of construction activities, any diversions or barriers to flow will be removed in a manner that would allow flow to resume with the least disturbance to the substrate. Alteration of the streambed will be minimized to the maximum extent possible; any imported material will be removed from the streambed upon completion of the project.
12. Unless approved by the U.S. Wildlife Service, water will not be impounded in a manner that may attract California red-legged frogs.
13. A U.S. Wildlife Service-approved biologist will permanently remove any individuals of exotic species, such as bullfrogs, signal and red swamp crayfish, centrarchid fishes (crappies, black bass, bluegills), and catfish from the project area, to the maximum extent possible. The U.S. Wildlife Service-approved biologist will be responsible for ensuring his or her activities are in compliance with the California Fish and Game Code.
14. To ensure that diseases are not conveyed between work sites by the U.S. Wildlife Service-approved biologist, the fieldwork code of practice developed by the Declining Amphibian Task Force will be followed at all times.
15. Project sites will be revegetated with an assemblage of native riparian, wetland, and upland vegetation suitable for the area. Locally collected plant materials will be used to the extent practicable. Invasive, exotic plants will be controlled to the maximum extent practicable. This measure will be implemented in all areas disturbed by activities associated with the project,

unless the U.S. Wildlife Service and Caltrans determine that it is not feasible or practical.

16. Upon completion of the project, Caltrans will ensure that a Project Completion Report is completed and provided to the U.S. Wildlife Service, following the template provided with the *Programmatic Biological Opinion*. Caltrans will include recommended modifications of the protective measures if alternative measures would facilitate compliance with the provisions of this consultation.

Steelhead

In addition to the previously proposed measures, the following measures will serve to further avoid or minimize impacts to steelhead:

17. Prior to initiation of stream diversion/dewatering, a qualified biologist will conduct an informal worker environmental training program including a description of steelhead, its legal/protected status, proximity to the project site, avoidance/minimization measures to be implemented during the project, and the implications of violating Federal Act and permit conditions.
18. During in-stream work, a National Fisheries-approved biologist will be retained with experience in steelhead biology and ecology, aquatic habitats, biological monitoring (including diversion/dewatering), and capturing, handling, and relocating fish species. During in-stream work, the biological monitor(s) will continuously monitor placement and removal of any required stream diversions to capture stranded steelhead and other native fish species and relocate them to suitable habitat as appropriate. The biologist(s) will capture steelhead stranded as a result of diversion/dewatering and relocate steelhead to suitable in-stream habitat immediately downstream of the work area. The biologist will note the number of steelhead observed in the affected area, the number of steelhead relocated, and the date and time of the collection and relocation.
19. During in-stream work, if pumps are incorporated to assist in temporarily dewatering the site, intakes will be completely screened with no larger than 0.094 inch (2.38 mm) wire mesh to prevent steelhead and other sensitive aquatic species from entering the pump system. Pumps will release the additional water to a settling basin, allowing the suspended sediment to settle out prior to re-entering the stream(s) outside of the isolated area. The form and function of all pumps used during the dewatering activities will be checked daily, at a minimum, by a qualified biological monitor to ensure a dry work environment and minimize adverse effects to aquatic species and habitats.
20. The biological monitor will monitor erosion and sediment controls to identify and correct any conditions that could adversely affect steelhead or steelhead habitat. The biological monitor will be granted the authority to halt work activity as necessary and to recommend measures to avoid/minimize adverse effects to steelhead and steelhead habitat.

21. Dewatering will be limited to the low-flow period between June 1 and October 31, thus avoiding adult steelhead spawning migration and peak smolt emigration.
22. Caltrans will provide National Fisheries a written summary of work performed (including biological survey and monitoring results), best management practices implemented and supporting photographs. Furthermore, the documentation describing listed species surveys and relocation efforts will include name(s) of the Caltrans-approved biologist(s), location and description of area surveyed, time and date of survey, all survey methods used, a list and tally of all sensitive animal species observed during the survey, a description of the instructions/recommendations given to the applicant during the project, and a detailed discussion of capture and relocation efforts.

Tidewater Goby

In addition to the previously proposed measures, the following measures will serve to further avoid or minimize impacts to the tidewater goby:

23. Prior to initiation of stream diversion/dewatering, a qualified biologist will conduct an informal worker environmental training program, including a description of the tidewater goby, its legal/protected status, proximity to the project site, avoidance/minimization measures to be implemented during the project, and the implications of violating Federal Act and permit conditions.
24. Dewatering will be limited to the low-flow period between June 1 and October 31, thus avoiding storm events that may compromise the cofferdams and water diversion.
25. A U.S. Wildlife Service-approved biologist(s) will install 0.125-inch (3.18 mm) block nets outside of the diversion. The nets will be installed on the first day of work and monitored thereafter for the duration of the work.
26. Once the block nets are secured, the U.S. Wildlife Service-approved biologist will remove as many tidewater gobies as feasible between the block nets using a 0.125-inch (3.18 mm) seine and dip nets, and relocate tidewater gobies to suitable habitat downstream of the proposed project site.
27. All tidewater goby relocation methods will use a clean bucket partially filled with creek water that was collected within or adjacent to the capture site. Water in the bucket will be maintained at the same temperature as water at the capture site and not contain turbidity greater than current conditions in the creek. Captured tidewater gobies will be placed in the bucket, immediately relocated to suitable habitat downstream, and released. Should the relocation of tidewater gobies require more than 10 minutes from capture to release, the bucket containing tidewater gobies must be placed in the creek to keep the water from heating and harming tidewater gobies contained in the bucket.

28. Once as many tidewater gobies are removed from the block net enclosure as is feasible, the cofferdams may be installed within the block net enclosure.
29. Before dewatering occurs, any pumps being used will be fitted with intake screens no larger than 0.094-inch (2.38 mm) wire mesh to prevent tidewater gobies and other sensitive aquatic species from entering the pump system. Pumps will release the additional water to a settling basin, allowing the suspended sediment to settle out prior to re-entering the creek outside of the isolated area.
30. Because tidewater gobies often reside on the bottom, the pump intake will be floated near the water surface as long as possible to prevent tidewater gobies from being entrapped on the screen. This can be accomplished with a weight on the intake nozzle (to keep it below the water surface), and a float attached to the hose just above the intake nozzle, that keeps the intake nozzle from going all the way to the bottom. As dewatering proceeds, the U.S. Wildlife Service-approved biologist will remove by hand, dip net, or seine all tidewater gobies found and relocate them to suitable habitat downstream of the proposed project site.
31. A U.S. Wildlife Service-approved biologist will remain onsite and observe for tidewater gobies and turbidity levels within the work areas during all creek dewatering activities, and will capture and relocate tidewater gobies to suitable habitat (downstream) as necessary.
32. Caltrans will provide the U.S. Wildlife Service a written summary of work performed (including biological survey and monitoring results), best management practices implemented and supporting photographs. Furthermore, the documentation describing listed species surveys and relocation efforts will include the name of the U.S. Wildlife Service-approved biologist, location and description of area surveyed, time and date of survey, all survey methods used, a list and tally of all sensitive animal species observed during the survey, a description of the instructions or recommendations given to the applicant during the project, and a detailed discussion of capture and relocation efforts.

2.3.5 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

Resource: Natural Environment Study, May 2020.

A total of 39 invasive plant species as identified by the California Invasive Plant Council Inventory were found within the biological study area. Nine exotic plant species with an invasiveness rating of “high” were observed in the project area: red brome, cheatgrass, Australian pine, pampas grass, perennial veldt grass, fennel, French broom, English ivy, and lantana. Seventeen plant species with an invasiveness rating of “moderate” and 13 species with an invasiveness rating of “limited” were also observed. The distribution of these invasive plant species is mainly within the Caltrans right-of-way.

Environmental Consequences

Ground disturbance and other construction activities could spread or introduce invasive species within the project limits.

Avoidance, Minimization, and/or Mitigation Measures

The minimization measures identified under section 2.3.1 *Natural Communities* would address issues from invasive plant species.

2.4 Construction Impacts

This section contains information related to construction activities that have not been previously addressed.

Affected Environment

Traffic

During bridge widening at the Shell Beach undercrossing, Spyglass Drive under the bridge would need to be closed to vehicular traffic for up to 24 hours while falsework is constructed and again when the falsework is removed. Traffic would likely be detoured to Mattie Road and Shell Beach Road. The North Pismo separation at Mattie Road would also need to be similarly closed for falsework construction and removal. Traffic would likely be detoured to the Spyglass Drive or Hinds Avenue overcrossing. Pedestrian access would likely still be available during these closures.

Environmental Consequences

Traffic

Traffic detours during temporary road closures would require out-of-direction travel for those individuals who would have used the closed section to cross the freeway. The greatest impact would be to those wishing to visit the Pismo Preserve. For drivers intending to travel south from the preserve, detouring

westward to the Shell Beach undercrossing would require a 4-mile diversion. Construction activities could also delay emergency vehicles if they had to detour.

Avoidance, Minimization, and/or Mitigation Measures

Traffic

Advance notice of road closures would be provided to the public and emergency service providers.

2.5 Cumulative Impacts

Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of the proposed project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor but collectively substantial impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

The California Environmental Quality Act (CEQA) Guidelines Section 15130 describes when a cumulative impact analysis is necessary and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts under CEQA can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts under the National Environmental Policy Act can be found in 40 Code of Federal Regulations Section 1508.7.

Affected Environment

Caltrans has identified eight resources that may be undergoing a change due to cumulative impacts of development or are in poor health within the project area. The resources, their associated study areas, and a brief description of the historic and current health of the resources are described below.

Visual Resources

The resource study area identified for visual resources for this project is defined as the Avila, Shell Beach, and Pismo Beach visual corridor of US 101. This includes ocean and hill viewsheds, as well as the San Luis Creek valley. See section 2.1.2 *Visual/Aesthetics* for a detailed description.

Cultural Resources

The resource study area identified for cultural resources is the region encompassing the coastal terraces spanning Avila Beach, Shell Beach, Pismo Beach, and Arroyo Grande in San Luis Obispo County. The area used for analyzing cumulative impacts to archaeological resources is defined based not only on geography, but also by time and shared history. This region contains an interrelated set of archaeological sites connected both ethnographically and temporally. The conditions of cultural resources in this region vary depending on natural and cultural influences, which can impact the integrity of a resource or group of resources.

The most obvious impact to cultural resources in the area is a result of human activities. Human settlement, urbanization, population growth, recreational areas, agriculture, ranching, commercial development and infrastructure are some of the main contributors to cumulative effects on historical resources. After World War 2, the area experienced a rise in tourism, large scale agricultural enterprises, and highway improvements. The communities of Avila Beach, Pismo Beach, Shell Beach and Arroyo Grande have grown exponentially as a result and continue to grow today.

Natural factors affecting cultural resources in the resource study area are erosion, sedimentation, soil deflation and sea level rise. The influence of these effects can be exacerbated by human activities such as increased erosion caused by road construction or agricultural practices.

The Archaeological Survey Report found that 43 archaeological sites exist within the resource study area. Virtually every resource has been affected by one or more of the factors mentioned above, resulting in an overall reduction in archaeological deposits and Northern Chumash sacred sites in the resource study area.

Water Quality

The resource study area identified for water quality impacts is the Pismo Creek watershed. Early water quality impacts in the area were a result of Spanish settlers in the 1800s who mostly relied on agriculture and ranching for their economy. Ranching is the main contributor for several pollutants that are listed constituents in Section 303(d) of the Clean Water Act. Other water quality impairments are listed as unknown origin.

Modern development in the resource study area has altered the health of Pismo Creek. The upper reaches of the Pismo Creek watershed are mostly agricultural land uses such as row crops, vineyards, and ranches. The urban center of the City of Pismo Beach is next to the Pismo Creek Estuary. Other land uses that contribute to water quality impacts in the resource study area include a regional landfill, oil extraction, and a wastewater treatment plant. A reduction in vegetation from urbanization and agricultural land uses contributes to an expansion of impervious surfaces in the area and therefore an increase in erosion and stormwater runoff. Increased stormwater runoff results from the surrounding impervious surfaces contributing to incrementally increased creek flows and causes pollution into the creek. Some of these pollutants are listed constituents regulated in Section 303(d) of the Clean Water Act.

Pismo Creek Habitat

This habitat area is typically identified by the creek channel and includes areas where wet soils, water, and water-loving vegetation are present. (For this analysis, wetlands were not included because there are none present within the project limits.) Riparian habitat is typically characterized by its proximity to other waters of the U.S. and wetlands and includes vegetative habitat of varying types. This resource was identified for inclusion in the cumulative impact analysis due to its sensitive nature and poor health. The resource study area identified for jurisdictional areas is the Pismo Creek watershed.

Historically, riparian and aquatic habitats have been in decline. In California, approximately 90 percent of historic riparian resources have been lost to alternative land uses. According to mapping data from the National Wetlands Inventory, approximately 915 acres of various wetlands and/or riverine habitat have been mapped along the Pismo Creek watershed. It is likely that additional wetlands and/or riparian habitat were present along the watershed prior to the construction of US 101, the Union Pacific Railroad, and the existing Pismo Creek Bridge. Riparian and aquatic habitats are degraded resources within this area due to the reduction in riparian canopy, increased sediment loads, and water runoff from agricultural practices. Current threats to these habitats within the resource study area result from the reduction of riparian vegetation, unsustainable agricultural practices, increased impervious surfaces within the watershed, continued urbanization, and oil development. Regulatory agencies have sought to offset the loss of wetlands and riparian habitat with restoration and revegetation requirements for projects within their respective jurisdictions.

Western Pond Turtle

The resource study area identified for western pond turtle cumulative impacts analysis is the Pismo Creek watershed. Pismo Creek supports habitat for the western pond turtle, and individuals have been found within the creek and within ponds in the watershed. See section 2.3.3 *Animal Species* for more information.

California Red-legged Frog

The resource study area identified for cumulative impacts to the California red-legged frog is Pismo Creek and adjacent uplands within 2 miles of Pismo Creek due to the ability of the species to travel over land for about 2 miles regardless of vegetation type. California red-legged frogs face threats such as habitat fragmentation, land conversion for agricultural uses, and the increased development of impervious surfaces.

This resource was identified for inclusion in the cumulative impact analysis due to the likelihood that California red-legged frogs have been substantially impacted over time. California red-legged frog population data from Pismo Creek and surrounding areas is not available from existing literature, but California red-legged frogs face threats such as habitat fragmentation, land conversion for agricultural uses, and the increased development of impervious surfaces. See section 2.3.4 *Threatened and Endangered Species* for more information.

Steelhead and Steelhead Critical Habitat

The resource study area identified for steelhead and steelhead critical habitat cumulative impacts is the Pismo Creek watershed. Historically, steelhead ranged from Alaska southward to the California-Mexico border and were the only abundant salmonid species that occurred naturally within the coast ranges of Southern California. With the increase of the human population in Southern California in the 20th century and the associated land and water development within the coastal drainages (mainly dams and water diversions), steelhead numbers quickly declined, resulting in extinguished populations in many watersheds and sporadic and remnant populations in the remaining watersheds. As a result, the south-central California steelhead was listed as federally endangered under the Federal Endangered Species Act in 1997, with designation of critical habitat in 2005. As a result, according to a 2011 status review, there is little new evidence to suggest that the status of the south-central California coast steelhead unit has changed appreciably since 2005. New information available on anadromous runs since the 2005 review remains limited and does not appear to suggest a change in extinction risk. See section 2.3.4 *Threatened and Endangered Species* for more information on this species.

Tidewater Goby and Tidewater Goby Critical Habitat

The resource study area identified for the tidewater goby and tidewater goby critical habitat cumulative impacts analysis is the Pismo Creek watershed.

Tidewater gobies have been collected during surveys along Pismo Creek since 1977; no other pertinent population data for the tidewater goby within the research study area was available, but critical habitat for the tidewater goby was first designated in 2008, then again in 2013 due to continued uncertainty for species success. Along the coast of California, critical habitat for the tidewater goby currently remains stable but faces threats from ongoing and future impacts

similar to those for steelhead, such as reduced riparian canopy, elevated sediment loads, and runoff carrying sediment and pesticides from agricultural practices. Habitat within the Pismo Creek watershed has suffered degradation from land development, stream channelization, sedimentation, and invasion by exotic frog species.

Table 2-3 lists the projects and resources potentially contributing to cumulative impacts in the resource study areas identified for this analysis. Impact areas were not listed if the project does not reside in the resource study area for the impact or if the project does not potentially impact that resource.

Table 2-3 Projects Potentially Contributing to Cumulative Impacts

Project	Location	Description	Resources Potentially Impacted in Identified Resource Study Areas
Pismo Capital Maintenance Improvement	Between Garcia Way and the South 101/1 Separation in Pismo Beach	Americans with Disabilities Act elements and complete street elements on Highway 1	None
Avila Interchange Improvement	US 101 at Avila Beach Drive	Roundabout interchange improvements and park-and-ride lot	Cultural resources, visual resources
Pismo Scour Project	Southbound on-ramp to US 101 from Price Street in the City of Pismo Beach	Improvements to the banks of Pismo Creek and piers of Pismo Creek Bridge to protect the bridge against erosion and scour	Jurisdictional areas, California red-legged frog, western pond turtle, steelhead and steelhead critical habitat, tidewater goby and tidewater goby critical habitat, visual resources, water quality
The Beachwalk Inn/Vespera on Ocean	147 Stimson and 150 Hinds in Pismo Beach	128-room hotel with pool, courtyard, deck, and underground parking	Cultural resources, visual resources, water quality
Northeast Grover Beach Mixed-Use Development Plan	North Oak Park Boulevard in Grover Beach	New development with 2 hotels and 7 single-family dwelling units.	Cultural resources, visual resources, water quality
Spanish Springs	East of Pismo Beach off Price Canyon Road	Large housing development	Cultural resources, jurisdictional areas, California red-legged frog, western pond turtle, steelhead and steelhead critical habitat, tidewater goby and tidewater goby critical habitat, visual resources, water quality
Pismo Preserve	Pismo Preserve Conservation	Construct two parking areas, restroom, picnic	Cultural resources, visual resources, water quality

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Project	Location	Description	Resources Potentially Impacted in Identified Resource Study Areas
	area east of Pismo Beach	facilities, and multi-use trails	
Tide Overview Inn	2121 Price Street in Pismo Beach	Demolish existing and development new hotel	Visual resources
Central Coast Blue Water Treatment Facility	Oceano and Grover beach area	Construction of an advanced treatment facility	Cultural resources, water quality
Bello Bridge Replacement	East of Ocean View Avenue, on Bello Street in City of Pismo	Replace bridge over Pismo Creek	Cultural resources, jurisdictional areas, California red-legged frog, western pond turtle, steelhead and steelhead critical habitat, tidewater goby and tidewater goby critical habitat, visual resources, water quality
Pismo Ranch Development	Near Price Canyon Road and City of Pismo Beach	Construct 310 single-family homes, 60 multi-family units, a 175-room hotel and 12,000 square feet of restaurant and retail space	Cultural resources, jurisdictional areas, California red-legged frog, western pond turtle, steelhead and steelhead critical habitat, tidewater goby and tidewater goby critical habitat, visual resources, water quality
Shore Cliff Lodge	2555 Price Street in Pismo Beach	Stabilization of the bluffs seaward of the Shore Cliff lodge that are subject to continuing erosion	Cultural resources
Avila Beach Golf Resort Expansion	Avila Beach golf course area	Proposal to expand operations by adding hotel rooms and cottages to the property	Cultural resources
The Cottages Hotel	Near the intersection of Avila Beach Drive and Ana Bay Drive in Avila Beach	Proposal to construct 50 cottage-style rentals and a lodge	Cultural resources
Shell Beach Road Streetscape	Downtown Shell Beach between Cliff Avenue and Terrace Avenue in City of Pismo Beach	Reconstruct the roadway, add multi-use path, and bring sidewalks into Americans with Disabilities Act compliance	Cultural resources, visual resources
Price Street Bluff Projection Project	2651 Price Street between Mattie Road/US	Emergency construction of a new drilled pier bluff wall along an approximately 90-foot	Cultural resources, visual resources, water quality

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Project	Location	Description	Resources Potentially Impacted in Identified Resource Study Areas
	101 underpass and Cliff Avenue	section of undermined coastal bluff	
Gas Station	Five Cities Drive and 4th Street	Construct new gas station	Visual resources
Vacation Rental	140 Addie Street in City of Pismo	Vacation rental unit construction	Jurisdictional areas, California red-legged frog, western pond turtle, steelhead and steelhead critical habitat, tidewater goby and tidewater goby critical habitat, visual resources
Hotel	2655 Shell Beach Road in City of Pismo Beach	Construction of two-story, 37-room hotel	Visual resources, water quality
Grover Beach Lodge and Conference Center	West Grand Avenue in City of Grover Beach	Construct 150-room hotel with conference center, restaurant, and other additions	Water quality
Orchard Senior Living	Near Orchard Road and US 101 in City of Arroyo Grande	Construct residential care facility	Cultural resources
Lopez Bridge Seismic Retrofit	Lopez Drive in San Luis Obispo County near Arroyo Grande	Seismically retrofit the existing Lopez Drive Bridge	Cultural resources
Arroyo Grande Property Holdings	Northeast side of Los Berros Road, near US 101 and the City of Arroyo Grande	Construct a high-density polyethylene-lined agricultural reservoir within the existing El Campo Ranch	Cultural resources
Brisco-Halcyon Road Interchange Modifications	On US 101 in the City of Arroyo Grande	Modifications and improvements to the US 101 interchanges at Brisco-Halcyon Road, Grand Avenue, and/or Camino Mercado	Cultural resources
Bridge Street Bridge Rehabilitation	Bridge Street, City of Arroyo Grande near US 101	Rehabilitate and address structural deficiencies associated with the Bridge Street Bridge over Arroyo Grande Creek	Cultural resources
Cherry Avenue Pipe Bridge Maintenance	Cherry Avenue, City of Arroyo Grande	Removal of existing paint and debris from the bridge, followed by replacing anti-corrosion coatings on the bridge	Cultural resources

Project	Location	Description	Resources Potentially Impacted in Identified Resource Study Areas
East Cherry Avenue Specific Plan	East Cherry Avenue, City of Arroyo Grande	Specific plan with mixed use and residential uses for future development	Cultural resources
Village at Pacific West	Off Oak Park Boulevard in City of Pismo Beach	Recent construction of 37 single-family homes, 36 multi-family units, including low-income units, 110 hotel rooms and a restaurant	Cultural resources, visual resources

Environmental Consequences

Twenty-nine recent, current, or proposed future projects, including the project considered in this environmental document, are located in one or more of the resource study areas. These projects have been identified as potentially contributing to cumulative impacts on the eight resources in this analysis. The potential environmental consequences of these projects are described below.

Visual Resources

Fifteen other current and reasonably foreseeable projects were identified as having an effect on the visual environment in the resource study area. Visual impacts could include loss of scenic vistas, degradation of visual quality and community character, and increased light and glare. Although the degree of visual change would vary, from low noticeability to substantial, each of these developments would contribute to the overall perception that the region and highway corridor are undergoing a change to a more urban visual environment, causing a cumulative decrease in visual quality.

When seen in the visual context of these other recent and proposed projects, the proposed Pismo Congestion Relief Pilot Project would contribute to cumulative impacts on visual resources in the resource study area. The proposed project contributes to an increase in the urban character and reduction in visual quality along the US 101 corridor through Pismo Beach and a portion of Avila Valley. The noticeability of this visual change would be substantially increased by the scale of this project, including soundwalls, extensive specialized signals, signs, vegetation removal, and other elements. The mitigation measures discussed in section 2.1.2 *Visual/Aesthetics* of this document will reduce adverse visual impacts, but substantial residual cumulative impacts would remain. Although the visual impacts from the individual projects in the resource study area are mitigable, cumulative impacts for the proposed Pismo Congestion Relief Pilot Project for visual resources are considered significant and unavoidable.

Cultural Resources

Twenty-one other recent, current, and future proposed projects in the resource study area have been identified as contributing to the cumulative impact on cultural resources. Some of these projects include housing developments, hotel developments, road improvements, and the Pismo Preserve recreational area. The Pismo Preserve is a recent construction project that included two parking areas, restroom, picnic facilities, and multi-use trails in the Pismo Preserve Conservation area and impacted four archaeological resources. All these projects have the potential to impact archaeological resources and add to the cumulative impact on the Chumash resources in this study area. These projects, combined with the general development of this coastal plateau over the decades as the beach communities have expanded, have resulted in a cumulative impact to cultural resources important to the Northern Chumash.

Adverse impacts from these individual projects would be avoided or minimized through the application of specific federal and state regulations, as well as county and city policies, actions, and development standards. These regulations, policies, and standards require avoidance of significant historical resources whenever feasible; if avoidance is not feasible, appropriate mitigation measures would be applied. These actions reduce the number and severity of impacts to historical resources, but an overall loss to the Northern Chumash resource base within this resource study area has occurred and will continue to occur. The projects will cumulatively reduce and degrade the number of these non-renewable resources, thereby contributing to an overall loss of integrity of the resource baseline. Due to adverse impacts that cannot be fully mitigated, the proposed Pismo Congestion Relief Pilot Project would have a significant contribution to cumulative impacts on cultural resources.

Water Quality

Multiple recent, reasonably foreseeable, and current projects within the resource study area for water quality have been identified as contributing to a cumulative impact to this resource. Pismo Creek suffers from poor water quality due to urban development both up and downstream from US 101. Upstream from US 101, a reservoir, agricultural operations, oil production facilities, sewage treatment, and groundwater pumping all affect the downstream flow and quality of water that travels through the project area. Occasional sewage spills from the sewage plant and other water quality issues have impacted water and aquatic life, particularly as a result of high storm flows. Heavy metals such as selenium, iron, and zinc were found to be above Basic Plan Standards at a sampling site upstream of the oilfield during wet and dry sampling events in 2009. The current development projects would increase the area of impervious surface, thereby increasing stormwater runoff volumes and velocities, as well as pollutant loading.

Development can substantially reduce impacts to water quality by implementing avoidance, minimization, and mitigation measures like bio-filtration and

detention basins and incorporating stormwater best management practices. Recently, the Pismo Scour Project reduced turbidity and erosion by repairing the failed creek banks. However unregulated activities and historic development prior to the enactment of regulations have created a cumulative adverse impact to water quality within the region. The proposed Pismo Congestion Relief Pilot Project would not make a significant contribution to adverse cumulative impacts to water quality because the project's impacts to storm water would be fully mitigated.

Pismo Creek Habitat

Projects constructed on or over Pismo Creek can result in temporary and/or permanent impacts to riparian, wetland, and aquatic habitat. Although these impacts are typically required to be mitigated, inadequate or failed mitigation efforts as well as unregulated activities have caused a decrease in these habitat resources over time, causing a cumulative adverse impact. The Pismo Scour Project impacted creek habitat with the addition of concrete and metal structures within the creek channel. The Bello Bridge Replacement Project will replace a bridge over Pismo Creek on Bello Street in the City of Pismo. These projects, among others, have caused or are likely to cause impacts to Pismo Creek that contribute to cumulative impacts to creek habitat.

The Pismo Congestion Relief Pilot Project would have temporary impacts to riparian and aquatic habitat, but these impacts would be fully mitigated. Therefore, the proposed project would not contribute to the cumulative impact on the habitat within Pismo Creek.

Western Pond Turtle

Western pond turtles were once widely distributed in Central California, but populations have declined and continue to decline over most of their range. Habitat destruction is attributed to be the major cause of this population decline. Over 90 percent of the wetland habitat within the historic range of the western pond turtle in California has been eliminated due to agricultural development, flood control, water diversion projects and urbanization. Consequently, there has been a cumulative adverse impact to this species.

The proposed project would cause temporary and permanent impacts to western pond turtle habitat and could directly impact the animal if it is found onsite during construction. Avoidance measures would reduce the likelihood of direct impacts; permanent impacts to habitat are small relative to the available habitat in the resource study area. Therefore, the contribution to cumulative impacts to the western pond turtle is not considered significant.

California Red-legged Frog

Given the historical context and the likelihood that the California red-legged frog population has been substantially impacted over time, it is assumed that this resource has been subjected to cumulative adverse impacts.

The Pismo Congestion Relief Pilot Project would cause permanent and temporary impacts to California red-legged frog habitat and could directly impact the animal if it is found onsite during construction. Avoidance measures would reduce the likelihood of direct impacts. Furthermore, the impacts to California red-legged frog habitat would be relatively small, and compensatory mitigation would offset impacts. Therefore, the contribution to cumulative impacts to the California red-legged frog is not considered significant.

Steelhead and Steelhead Critical Habitat

Though historically there has been an adverse cumulative impact to steelhead and steelhead critical habitat, the population of the south-central California coast steelhead appears to currently be relatively stable. Nonetheless, present-day risks and limiting factors for this population segment continue, including increasing sedimentation; decreasing spawning gravel quality and quantity; fish passage barriers and numerous minor habitat blockages throughout the region; decreased water quality; dewatering and habitat degradation in the form of agricultural and urban development on floodplains and riparian areas; and artificial breaching of estuaries during periods when they are normally closed off from the ocean by a sandbar. Upstream from the ocean about 4.5 miles, a concrete ford crossing Pismo Creek acts as a barrier to upstream movement of juvenile steelhead and a possible impediment to upstream adult movement at lower stream flows. The county bridge crossing of West Corral de Piedra Creek at Righetti Road creates a partial barrier due to an existing steep concrete apron across the stream. Adult steelhead are likely able to pass this partial barrier when water depths are deep enough, but fish passage overall is limited significantly. In addition, canopy cover (required for good quality habitat) in Pismo Creek averaged 59 percent, which is low compared to other local watersheds.

The Pismo Congestion Relief Pilot Project would cause permanent and temporary impacts to steelhead critical habitat and could directly impact the animal if it is found onsite during construction. Avoidance measures would reduce the likelihood of direct impacts. There are 13.7 miles of south-central California coast steelhead critical habitat designated along Pismo Creek; permanent impacts to habitat as a result of the project would be small relative to the available habitat in the resource study area, and minimization measures have been included. Therefore, the contribution to cumulative impacts to steelhead and steelhead critical habitat would not be considered significant.

Tidewater Goby and Tidewater Goby Critical Habitat

Given the historical context and the likelihood that the tidewater goby population has been substantially impacted over time, this resource has been subjected to cumulative impacts.

The available tidewater goby habitat in Pismo Creek encompasses about 18 acres. This is considered small, but contains an abundant population density

and a regular species presence. The Pismo Congestion Relief Pilot Project would cause temporary impacts to tidewater goby critical habitat and could directly impact the animal if it is found onsite during construction. Avoidance measures would reduce the likelihood of direct impacts. Temporary impacts to habitat as a result of the project would be small relative to the available habitat in the resource study area and minimization measures have been included. Therefore, the contribution to cumulative impacts to tidewater goby and tidewater goby critical habitat would not be considered significant.

Avoidance, Minimization, and/or Mitigation Measures

In addition to the measures identified in sections 2.1.2, 2.1.3, 2.2.2, 2.3.2, 2.3.3, and 2.3.4 to avoid, minimize, and mitigate this project's potential impacts, the following is a list of potential measures that could be implemented by agencies with jurisdiction over the resources identified in this study to minimize potential cumulative impacts.

Visual Resources

- San Luis Obispo County and the City of Pismo Beach could require placement of existing utilities that degrade ocean views to be moved underground wherever possible in this corridor.
- The City of Pismo Beach could put a moratorium on any further construction that would block ocean views.

Cultural Resources

- Preparation of regional cultural resources overviews and research designs and synthetic analysis and interpretation of cultural resources in regional perspective. This could include ethnographic studies, compilation of previous archaeological data, and oral history interviews from modern descendant communities. Compiling and summarizing this information would help treat effects to this larger cultural landscape by providing a clear chronology of prehistoric habitation and allow for a better understanding of the importance of this region during California's prehistory.
- Continued efforts at public outreach to keep the public informed and aware of the historical relevance of the area and its importance to the Northern Chumash tribe.
- Local land use plans could add more restrictions to avoid impacts to Northern Chumash archaeological sites.

Water Quality

- In the Pismo Creek Watershed Management Plan (2009) developed by the Pismo Creek/Edna Area Steering Committee, several water quality issues were identified with recommendations to improve water quality in the Pismo Creek watershed. It is recommended for agencies to consider these strategies to improve the health of the watershed:

- Identify areas where sediment is entering the creek by inventorying the road system and then plan to modify structures or initiate Best Management Practices to control erosion and reduce sedimentation.
- Provide off-stream sources of water for livestock or fencing livestock to avoid the creek could reduce bacteria entering the creek and improve water quality.
- Implement plan to monitor water quality for selenium and biostimulatory risk. Studies indicate that selenium, iron and zinc are above Basin Plan standards, but additional monitoring should be conducted to assess levels.
- Promote use of low impact development, redevelopment and retrofits to reduce sources of runoff.
- The State of California Water Quality Control Plan for the Central Coastal Basin recommends Best Management Practices to improve water quality by property owners. It is recommended for agencies to encourage property owners to use these practices:
 - Preventing discharge by use of recycling used motor oil, fertilizer management, street cleaning, and revegetation.
 - Treatment controls such as use of infiltration facilities, oil/water separators, and constructed wetlands to remove pollutants before they reach surface or groundwater.

Aquatic Species and Pismo Creek Habitat

- Protect stream flow from diversions by finding ways to work effectively with the reservoir operator to ensure minimum flow requirements are instituted. It would be imperative to assure that the flow be dedicated to the stream as opposed to other downstream riparian users.
- It is recommended that a program be directed to remove Arundo, Himalayan blackberry, and the other non-native vegetation within the Pismo Creek watershed.
- It is recommended that, where possible, tall, sprawling native trees that are used in more arid conditions be planted along the banks of Pismo Creek in the area from Route 227 to the bridge on Righetti Road.
- Conduct water quality testing to identify the substance causing the turbidity in lower Pismo Creek.
- Remove impediments for fish along Pismo Creek, particularly the concrete blockage. Regulatory agencies could encourage the concrete be removed and the crossing replaced with a railroad flatcar bridge or other structure that accommodates fish passage.

Chapter 3 California Environmental Quality Act Evaluation

3.1 Determining Significance Under CEQA

The proposed project is a joint project by Caltrans and the Federal Highway Administration and is subject to state and federal environmental review requirements. Project documentation, therefore, has been prepared in compliance with both the 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 December 23, 2016, 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.

3.2 CEQA Environmental Checklist

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

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

3.2.1 Aesthetics

CEQA Significance Determinations for Aesthetics

Except as provided in Public Resources Code Section 21099, would the project:

a) Have a substantial adverse effect on a scenic vista?

Significant and Unavoidable Impact—The project would add a substantial amount of hardscape within the coastal viewshed, remove skyline trees, and in some locations the new median barrier could briefly block ocean views for some travelers. If soundwalls were constructed, they would create long segments of blocked views for all travelers.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact—This question is not applicable; the section of US 101 within the project area is not an officially designated State Scenic Highway.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Significant and Unavoidable Impact—Aesthetic treatments may reduce adverse impacts to community character, but because of the inherent visual changes associated with the increased scale and urban appearance of the corridor, substantial impacts to visual quality and character would still occur.

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

Less than Significant with Mitigation Incorporated—All build alternatives would result in additional light and glare along the highway from the lane use control signals, but this change would represent a relatively small increase compared to the existing nighttime environment. (See section 2.1.2 *Visual/Aesthetics* for more information.)

3.2.2 Agriculture and Forest Resources

CEQA Significance Determinations for Agriculture and Forest Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact—There is no farmland within the project's area of impact.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact—The project does not impede on land that is agriculturally zoned or within 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))?

No Impact—There is no forest land or timberland as described within the project limits.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact—There is no forest land as described within the project limits.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No Impact—There is no agricultural land or forest land as described within the project's area of impact.

3.2.3 Air Quality

CEQA Significance Determinations for Air Quality

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.

Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

No Impact—Caltrans' Standard Specification 14-9.02 (Caltrans, 2015) requires compliance with all applicable air quality laws and regulations including local and air district ordinances and rules. The applicable State Implementation Plan for San Luis Obispo County is the 2001 Clean Air Plan. The proposed project is included in the San Luis Obispo Council of Governments 2019 Regional Transportation Plan and programmed in the 2018 Regional Transportation Improvement Program, which are both consistent with the 2001 Clean Air 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?

No Impact—The project area is not in a non-attainment region under any applicable federal or state ambient air quality standard.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact—There are parks and schools within 500 feet of the project limits, which is the zone of greatest concern near roadways. Standard specifications are applied to all projects to control air-borne dust and pollutants during construction. The completed project would move some traffic away from the elementary school but closer to the pre-school; the project area is more than 700 feet from the middle school.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Significant and Unavoidable Impact—The project does not cause or contribute to any new localized sources of odors, but it would result in a substantial increase in carbon dioxide emissions. (See section 3.3.3 *Project Analysis*.) Construction emissions could be unpleasant at times but would not be excessive or affect large numbers of people at any given time.

3.2.4 Biological Resources

CEQA Significance Determinations for Biological Resources

Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less than Significant Impact—Several protected species are present or could be present and temporarily impacted by the project during construction: white-tailed kite and other birds, western pond turtle, California red-legged frog, steelhead, and tidewater goby. Measures have been included in the project to minimize disturbance and return disturbed area to its pre-construction condition.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less than Significant Impact—Riparian habitat would be disturbed at Pismo Creek during construction. This is area that was newly planted as mitigation for a recent project to improve scoured areas under the bridge and would be replanted after construction.

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?

No Impact—There are no state or federal wetlands within the project limits.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less than Significant Impact—Construction activities would restrict the movement of any steelhead, tidewater goby, or other aquatic species that were in the vicinity of Pismo Creek Bridge. Resident species would be relocated prior to any disturbance and provisions made to restrict any re-entry into the construction area. This would be a temporary impact; full access would be re-established once construction was completed.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact—Most of the project is subject to the local coastal policies of the City of Pismo Beach and the County of San Luis Obispo. Regarding biological resources, the project is consistent with these policies.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact—There is no such plan active within the project area.

3.2.5 Cultural Resources

CEQA Significance Determinations for Cultural Resources

Would the project:

a) Cause a substantial adverse change in the significance of a *historical* resource pursuant to Section 15064.5?

Significant and Unavoidable Impact—The project would impact a small portion of two known large archaeological sites that are eligible for the National Register. Because excavation would be relatively shallow and mostly in disturbed soil, impacts to these sites are expected to be minimal. Recovery measures have been included as mitigation. One of the soundwalls, if con-

structed, would severely impact a third site, also eligible; depending on the extent of the impact, the site could be adversely affected to the degree that it would no longer be eligible for the National Register. Impacts to this site could be avoided if the soundwall were not built.

b) Cause a substantial adverse change in the significance of an *archaeological* resource pursuant to Section 15064.5?

Significant and Unavoidable Impact—See response to a) above.

c) Disturb any human remains, including those interred outside of dedicated cemeteries?

Significant and Unavoidable Impact—The project would impact two sites where human remains have been found, so the potential exists that remains could be found during construction. This is not expected, however, because disturbance is not expected to reach intact deposit. As a standard construction practice, measures have been included to address the appropriate and respectful disposition of any unexpected discovery.

3.2.6 Energy

CEQA Significance Determinations for Energy

Would the project:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

No Impact—The project would have a beneficial impact on energy use by improving traffic flow and speeds, which improve fuel efficiency. The project design has been limited to include only those components directly impacted during construction.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact—The project is in compliance with all local plans related to energy consumption.

3.2.7 Geology and Soils

CEQA Significance Determinations for Geology and Soils

Would the project:

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

No Impact—This refers to surface faulting (ground displacement) at a site from an earthquake. Pismo Creek Bridge is not situated within an Earthquake Fault Zone (Alquist-Priolo) as identified by the California Geologic Survey, nor is it located within 1,000 feet of a mapped fault that is of Holocene-Latest Pleistocene age or younger (active within the last 15,000 years). By these definitions, Caltrans considers the bridge site to be free from surface fault rupture potential from known active faulting.

ii) Strong seismic ground shaking?

No Impact—High seismic ground accelerations are the amount (strength and duration) of ground shaking that a site could be subjected to from a local or regional earthquake. Pismo Creek Bridge is in an area that could be subject to high seismic ground accelerations, but site-specific testing would provide data for appropriate design specifications.

iii) Seismic-related ground failure, including liquefaction?

Less than Significant Impact—There is a potential for liquefaction at Pismo Creek Bridge due to the high groundwater levels and layers of loose sandy alluvial materials underlying the site and vicinity. Caltrans has performed a site-specific liquefaction and seismically induced settlement analysis to provide project designers with the necessary specifications to design the bridge supports to seismic standards.

iv) Landslides?

No Impact—The likelihood of landslides at this location is low due to the topography and sparse availability of wildfire fuel.

b) Result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact—The project would increase the impervious surface area within the project limits by more than 8 acres, which would increase the volume and rate of stormwater flows and thereby increase the risk of erosion, sedimentation, and scour. The project includes erosion control measures per Caltrans' standard specifications and best management practices to treat a minimum of 9 acres of impervious surface.

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-site or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less than Significant Impact—According to past geologic boring information at Pismo Creek Bridge, there is a layer of medium dense sand and gravel at the toe of the west bank that could be subject to liquefaction, which could cause lateral movement of the west bank. Evaluation results also show the Pismo Creek Bridge site is susceptible to lateral spreading. The potential for seismically induced settlements or instability of the embankment fill and bridge supports site would be evaluated in the Preliminary Foundation Report prepared during project design and the design modified accordingly.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

No Impact—The road surface is built on base material that prevents impacts from unstable soil beneath it.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact—The project does not include the use of septic tanks or disposal systems.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No Impact—The project has been designed to avoid the geologic feature known locally as the Pismo Rock.

3.2.8 Greenhouse Gas Emissions

CEQA Significance Determinations for Greenhouse Gas Emissions

Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than Significant with Mitigation Incorporated—The proposed project would cause higher levels of carbon dioxide emissions than if the project were not constructed. Considering that carbon dioxide accounts for more than 80 percent of total greenhouse gas emissions, the emissions that would result from the project could be considered a significant impact on an individual basis, but certainly contributes to a cumulative significant impact as part of the overall transportation industry. However, carbon dioxide emissions are expected to decrease substantially within the next 20 years as a result of cleaner vehicles and enhanced regulations, resulting in substantially lower carbon dioxide emission rates than are seen today. By implementing

available reduction measures and adhering to regulations, the long-term impact from the project would be considered less than significant.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

No Impact—The project complies with all applicable plans, policies, and regulations as regards greenhouse gas emissions. The project is included in the San Luis Obispo Council of Governments (Council of Governments) 2019 Regional Transportation Plan/Sustainable Communities Strategy and 2020 Regional Transportation Improvement Plan. The park-and-ride lot is consistent with the Council of Governments' Community 2050 Regional Blueprint's goal of improving multi-modal connectivity, as well as the City of Pismo Beach Climate Action Plan's goals of encouraging transportation demand management incentives and reducing congestion.

3.2.9 Hazards and Hazardous Materials

CEQA Significance Determinations for Hazards and Hazardous Materials

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less Than Significant Impact—The final project would improve the reliability of the highway and thereby reduce potential hazards to the public from the transport of materials. Testing indicates that soil within the top few inches within the project limits contains hazardous levels of aurally deposited lead. Because of the depth and volume of excavation required for construction, the concentration of lead in the excavated soil would not be considered hazardous. Standard dust control measures would prevent substantial amounts of dirt becoming airborne during construction.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

No Impact—Safety requirement and standards would be incorporated into the project design, thereby minimizing the chance of accidents due to traffic collisions.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact—Construction could occur within one-quarter mile of Shell Beach Elementary School, Judkins Middle School, and Happy Time Co-op

Preschool. Due to the age of the highway, concentrations of aerially deposited lead could be found in the soil and/or asbestos found on the bridges. The soil and bridges would be tested prior to construction for these materials. If found in excess of regulatory limits, the materials would be handled according to all applicable regulations. Caltrans Standard Specifications include measures for handling these substances on all projects as applicable.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact—There are no hazardous materials sites within the project limits.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

No Impact—The project is not located within an airport land use plan or within two miles of a public airport.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact—By improving highway operations, the project would be improving any emergency plan that requires highway use.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

No Impact—The project would reduce the vegetative fuel within the median, which would, to a small degree, reduce the propagation of wildfire.

3.2.10 Hydrology and Water Quality

CEQA Significance Determinations for Hydrology and Water Quality

Would the project:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less Than Significant Impact—Potential surface water quality impacts may include: an increase in sediments, turbidity and total dissolved solids; and toxicity due to chemical substances originating from construction activities. By incorporating proper and accepted engineering practices and best management practices, the project would not produce significant impacts to water quality during construction.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

No Impact—There are no water recharge facilities at or downstream of the project location.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i) Result in substantial erosion or siltation on-site or off-site;

Less than Significant Impact—The project would increase impervious surfaces within the project limits by about 5 acres, which would increase the volume and rate of stormwater flows and thereby increase the risk of erosion, sedimentation, and scour. However, the project design would incorporate permanent storm water treatment best management practices to treat a minimum of 9 acres of impervious surface. The project would also repair damaged slope paving that is currently suffering from erosion, and all disturbed areas would be treated with erosion control or be replanted to prevent runoff that otherwise could cause siltation.

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-site or off-site;

Less than Significant Impact—The project would increase impervious surfaces within the project limits by about 5 acres, but this increase is spread out along 4 miles of roadway where the part-time travel lane is proposed. The small increase to each drainage system is insignificant and is not substantial enough to cause flooding.

iii) Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;

No Impact—The project does not contribute runoff water that would exceed the capacity of existing drainage facilities. The project would increase impervious surfaces within the project limits by about 5 acres, which would increase the volume and rate of storm water flows. However, the project design would incorporate permanent storm water treatment best management practices to treat a minimum of 9 acres of impervious surface, therefore the project would not create substantial additional polluted runoff.

iv) Impede or redirect flood flows?

No Impact—The project does not impede flood flows and does not divert any existing drainage systems that would cause redirected flood flows.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

No Impact—No pollutants would be present as part of the roadway prism or bridge structures.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

No Impact—Pismo Creek and the portion of the project south of the creek are within the Santa Maria River Valley—Santa Maria subunit 3-012.01 groundwater basin. Per the Central Coast Regional Water Quality Control Board's Central Coast Basin Plan, the general water quality objectives for all groundwater in the Central Coast area include tastes, odors, and radioactivity. A Storm Water Pollution Prevention Plan would be prepared for this project that would include water quality protection measures for construction. No long-term or temporary impacts are anticipated with respect to groundwater.

3.2.11 Land Use and Planning

CEQA Significance Determinations for Land Use and Planning

Would the project:

a) Physically divide an established community?

No Impact—The project would not encroach upon or divide any residences or businesses.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact—The significant and potentially significant effects associated with the project are not related to land use plans, policies, or regulations.

3.2.12 Mineral Resources

CEQA Significance Determinations for Mineral Resources

Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact—The project area is not a source of any known mineral resource.

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact—There is no mineral resource recovery site located near the project limits.

3.2.13 Noise

CEQA Significance Determinations for Noise

Would the project result in:

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Significant and Unavoidable Impact—Traffic noise as a result of the project is expected to be in excess of Caltrans and local standards. See section 2.2.3 *Noise* for more discussion on this subject.

b) Generation of excessive groundborne vibration or groundborne noise levels?

Less than Significant Impact—Trucks moving at higher speeds can cause groundborne vibrations, but these would be expected in the vicinity of a freeway.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact—Oceano County Airport is 2.5 miles from the project location.

3.2.14 Population and Housing

CEQA Significance Determinations for Population and Housing

Would the project:

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact—The project would support higher traffic volumes that could result from the anticipated future population growth in the region, but there are no components that would induce growth.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact—The project would not impact housing.

3.2.15 Public Services

CEQA Significance Determinations for Public Services

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire protection?

No Impact—The project would not induce the need for any new or altered fire protection services.

Police protection?

No Impact—The project would not induce the need for any new or altered police protection services.

Schools?

No Impact—The project would not induce the need for any new or altered school services.

Parks?

No Impact—The project would not induce the need for any new or altered park services.

Other public facilities?

Less than Significant Impact—The project would use the Freeway Service Patrol. (See section 1.4.1 *Build Alternatives*, “Transportation Demand Management and Transportation System Management Alternatives.”) This service will aid in the project’s purpose to improve traffic flow. Also, the project would use potable water for irrigation of mitigation planting during the plant establishment period. This would likely be discontinued in the case of drought.

3.2.16 Recreation

CEQA Significance Determinations for Recreation

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact—The project would not increase the use of any parks or recreational facilities.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact—The project does not include recreational facilities.

3.2.17 Transportation

CEQA Significance Determinations for Transportation

Would the project:

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

No Impact—The project would improve traffic circulation; it is not in conflict with applicable plans.

b) Conflict with or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

No Impact—The project is expected to have a draft environmental document submitted for public review prior to the deadline for the requirement to analyze traffic impacts using vehicle miles traveled, therefore level of service has been used.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact—The project would be designed to include required standards for highway safety.

d) Result in inadequate emergency access?

Less than Significant Impact—Once in operation, the project would improve freeway operations within the project limits and thereby improve emergency access. During construction, travel lanes could be restricted at times to through traffic. If possible, construction would be halted to allow emergency

vehicles through. Otherwise, emergency vehicles could cross the median and/or use out-of-direction travel by means of another ramp, which could increase travel times.

3.2.18 Tribal Cultural Resources

CEQA Significance Determinations for Tribal Cultural Resources

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

Significant and Unavoidable Impact—The project would impact a small portion of two known large archaeological sites that are eligible for the California Register. Because excavation would be relatively shallow and primarily in disturbed soil, impacts to these sites are expected to be minimal. Nonetheless, the full extent of these sites is unknown, and therefore there is potential for the impacts to be severe. Consequently, monitoring and recovery measures have been included as mitigation. One of the soundwalls, if constructed, would severely impact a third site that is also eligible; depending on the extent of the impact, the site could be adversely affected to the degree that it would no longer be eligible for the California Register. Impacts to this site could be avoided if the wall were not built.

b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Significant and Unavoidable Impact—The same information provided in answer a) above applies to this question. The project would avoid direct impacts to Pismo Rock, but the Rock would be encumbered with concrete barrier, which affects its appearance. This would be considered a less than significant impact.

3.2.19 Utilities and Service Systems

CEQA Significance Determinations for Utilities and Service Systems

Would the project:

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Less than Significant Impact—The existing storm water drainage system would be expanded to include the additional lane width created by the project.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Less than Significant Impact—The project would not require any water supplies beyond irrigation during the plant establishment period, but the irrigation would be with potable water. During periods of drought, irrigation would likely be discontinued unless the water could be provided from a source that does not deplete the public supply. Discontinuing irrigation could cause mitigation planting to fail, but no new water source would be pursued.

c) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact—The project would not affect demand on wastewater treatment facilities.

d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

No Impact—The project would not generate solid waste.

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

No Impact—The project complies with all statutes and regulations related to solid waste.

3.2.20 Wildfire

CEQA Significance Determinations for Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact—Once active, the project would improve freeway operations within the project limits and thereby improve emergency response and/or evacuation plans. During construction, travel lanes could be restricted, but would reopen during an emergency.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

No Impact—The project would not exacerbate wildfire risks. The freeway corridor maintains reduced fuel quantities and few wildfire sources relative to adjacent open areas.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

No Impact—No additional infrastructure is being installed that would increase fire risk.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

No Impact—The project is not in an area prone to landslides or flooding.

3.2.21 Mandatory Findings of Significance

CEQA Significance Determinations for Mandatory Findings of Significance

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Significant and Unavoidable Impact—The project would result in adverse impacts to the visual quality of the area and to cultural resources important to the Northern Chumash tribe. It would also result in adverse impacts from increased noise levels due to traffic. See the relevant sections in Chapter 2 for more information.

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.)

Significant and Unavoidable Impact—The project would make a significant contribution to the decline of the visual quality through this portion of the US 101 corridor, as well as to the disturbance of the archaeological resources on the Pismo plateau. See section 2.5 *Cumulative Impacts* for more information.

c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?

Significant and Unavoidable Impact—The quality of life in San Luis Obispo County has been rated as high in multiple surveys, due in large part to the attractive rural environment, the “small town feel,” and the proximity of quaint, coastal towns with spectacular ocean views. This quality draws people from all over the country, both to visit and to live, which puts a substantial burden on the local infrastructure. In response, urban development has increased, which in turn decreases the characteristics that were the initial draw. A higher density population, expanding development, increased congestion, reduced quality views, reduced connection to area history and culture, and increased noise all contribute to a decrease in the quality of life, which has been shown to have deleterious effects on human health and well-being. The proposed project would reduce congestion on the freeway for the near future, but the project’s contributions to other degrading factors would result in substantial, long-term adverse effects on human beings in general.

3.3 Climate Change

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

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

Two terms are typically used when discussing how we address the impacts of climate change: “greenhouse gas mitigation” and “adaptation.” Greenhouse gas mitigation covers the activities and policies aimed at reducing greenhouse gas emissions to limit or “mitigate” the impacts of climate change. Adaptation, on the other hand, is concerned with planning for and responding to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels). This analysis will include a discussion of both.

3.3.1 Regulatory Setting

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

Federal

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

The National Environmental Policy Act (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 (FHWA) recognizes the threats that extreme weather, sea-level change, and other changes in environmental conditions pose to valuable transportation infrastructure and those who depend on it. 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 2019). 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 n.d.). Program and project elements that foster sustainability and resilience also support economic vitality and global efficiency, increase safety and mobility, enhance the environment, promote energy conservation, and improve the quality of life.

Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects. The most important of these were the Energy Policy and Conservation Act of 1975 (42 U.S. Code Section 6201) and the Corporate Average Fuel Economy Standards. This act establishes fuel economy standards for on-road motor vehicles sold in the United States. Compliance with federal fuel economy standards is determined through the Corporate

Average Fuel Economy program based on each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the United States.

Energy Policy Act of 2005, 109th Congress H.R.6 (2005–2006): This act sets forth an energy research and development program covering: (1) energy efficiency; (2) renewable energy; (3) oil and gas; (4) coal; (5) the establishment of the Office of Indian Energy Policy and Programs within the Department of Energy; (6) nuclear matters and security; (7) vehicles and motor fuels, including ethanol; (8) hydrogen; (9) electricity; (10) energy tax incentives; (11) hydropower and geothermal energy; and (12) climate change technology.

The U.S. Environmental Protection Agency in conjunction with the National Highway Traffic Safety Administration is responsible for setting greenhouse gas emission standards for new cars and light-duty vehicles to significantly increase the fuel economy of all new passenger cars and light trucks sold in the United States. Fuel efficiency standards directly influence greenhouse gas emissions.

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 Executive Order is to reduce California's greenhouse gas emissions to: (1) year 2000 levels by 2010, (2) year 1990 levels by 2020, and (3) 80 percent below year 1990 levels by 2050. This goal was further reinforced with the passage of Assembly Bill 32 in 2006 and Senate Bill 32 in 2016.

Assembly Bill 32, Chapter 488, 2006, Núñez and Pavley, The Global Warming Solutions Act of 2006: Assembly Bill 32 codified the 2020 greenhouse gas emissions reduction goals outlined in Executive Order S-3-05, while further mandating that the California Air Resources Board create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." The Legislature also intended that the statewide greenhouse gas emissions limit continue in existence and be used to maintain and continue reductions in emissions of greenhouse gases beyond 2020 (Health and Safety Code Section 38551(b)). The law requires the California Air Resources Board to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective greenhouse gas reductions.

Executive Order S-01-07 (January 18, 2007): This order sets forth the low carbon fuel standard for California. Under this Executive Order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by the year 2020. The California 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 375, Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires the California Air Resources Board to set regional emissions reduction targets for passenger vehicles. The Metropolitan Planning Organization for each region must then develop a “Sustainable Communities Strategy” that integrates transportation, land-use, and housing policies to plan how it will achieve the emissions target for its region.

Senate Bill 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 Assembly Bill 32.

Executive Order B-16-12 (March 2012) orders State entities under the direction of the Governor, including the California 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) establishes an interim statewide greenhouse gas emission reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050. It further orders all state agencies with jurisdiction over sources of greenhouse gas emissions to implement measures, pursuant to statutory authority, to achieve reductions of greenhouse gas emissions to meet the 2030 and 2050 greenhouse gas emissions reductions targets. It also directs the California Air Resources Board to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent. Greenhouse gases differ in how much heat each trap in the atmosphere (global warming potential). Carbon dioxide is the most important greenhouse gas, so amounts of other gases are expressed relative to carbon dioxide, using a metric called “carbon dioxide equivalent.” The global warming potential of carbon dioxide is assigned a value of 1, and the global warming potential of other gases is assessed as multiples of carbon dioxide. Finally, it requires the Natural Resources Agency to update the state’s climate adaptation strategy, *Safeguarding California*, every three years, and to ensure that its provisions are fully implemented.

Senate Bill 32, Chapter 249, 2016, codifies the greenhouse gas reduction targets established in Executive Order B-30-15 to achieve a mid-range goal of 40 percent below 1990 levels by 2030.

Senate Bill 1386, Chapter 545, 2016, 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.”

Assembly Bill 134, Chapter 254, 2017, allocates Greenhouse Gas Reduction Funds and other sources to various clean vehicle programs, demonstration/pilot projects, clean vehicle rebates and projects, and other emissions-reduction programs statewide.

Senate Bill 743, Chapter 386 (September 2013): This bill changes the metric of consideration for transportation impacts pursuant to CEQA from a focus on automobile delay to alternative methods focused on vehicle miles travelled, to promote the state’s goals of reducing greenhouse gas emissions and traffic related air pollution and promoting multimodal transportation while balancing the needs of congestion management and safety.

Senate Bill 150, Chapter 150, 2017, Regional Transportation Plans: This bill requires the California Air Resources Board to prepare a report that assesses progress made by each metropolitan planning organization in meeting their established regional greenhouse gas emission reduction targets.

Executive Order B-55-18 (September 2018) 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.

Executive Order N-19-19 (September 2019) advances California’s climate goals in part by directing the California State Transportation Agency to leverage annual transportation spending to reverse the trend of increased fuel consumption and reduce greenhouse gas emissions from the transportation sector. It orders a focus on transportation investments near housing, managing congestion, and encouraging alternatives to driving. This Executive Order also directs the California Air Resources Board to encourage automakers to produce more clean vehicles, formulate ways to help Californians purchase them, and propose strategies to increase demand for zero-emission vehicles.

3.3.2 Environmental Setting

US 101 serves as a primary transportation artery for the Central Coast, accommodating interregional, regional, and local traffic. San Luis Obispo Council of Governments’ (Council of Government) 2014 US 101 Corridor Mobility Master Plan identified the project area as the most congested segment on the US 101 corridor in San Luis Obispo County, as well as “a key

goods movement corridor [that] is critical for the economic health and productivity of the Central Coast of California.” It is the dominant thoroughfare through San Luis Obispo County, accommodating over two-thirds of total travel and carrying over twice the daily traffic of any other facility in the county. Much of this is commuter traffic, which causes peak traffic to be heavily one-directional, correlating with the morning and afternoon peak hours, although weekend southbound traffic is also heavy.

The Pismo Congestion Relief Project is included in the Council of Governments’ 2019 Regional Transportation Plan/Sustainable Communities Strategy, which guides transportation and housing development and addresses greenhouse gasses in the project area. 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 California Air Resources Board does so for the state, as required by Health and Safety Code Section 39607.4.

National Greenhouse Gas Inventory

The U.S. Environmental Protection Agency prepares a national greenhouse gas inventory every year and submits it to the United Nations in accordance with the Framework Convention on Climate Change. The inventory provides a comprehensive accounting of all human-produced sources of greenhouse gases in the United States, reporting emissions of carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride. It also accounts for emissions of carbon dioxide that are removed from the atmosphere by “sinks” such as forests, vegetation, and soils that uptake and store carbon dioxide (carbon sequestration).

The 1990–2016 inventory found that, of 6,511 million metric tons of carbon dioxide-equivalent greenhouse gas emissions, 81 percent consisted of carbon dioxide, 10 percent were methane, and six percent were nitrous oxide; the balance consisted of fluorinated gases (U.S. EPA 2018). In 2016, greenhouse gas emissions from the transportation sector accounted for nearly 28.5 percent of U.S. greenhouse gas emissions, as shown in Figure 3-1.

State Greenhouse Gas Inventory

The California 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 2019 edition of the greenhouse gas emissions inventory found total California emissions for 2017

were 424.1 million metric tons of carbon dioxide equivalent, with the transportation sector responsible for 41 percent of total greenhouse gases. It also found that overall statewide greenhouse gas emissions declined from 2000 to 2017 despite growth in population and state economic output (ARB 2019a).

Figure 3-1 U.S. 2016 Greenhouse Gas Emissions

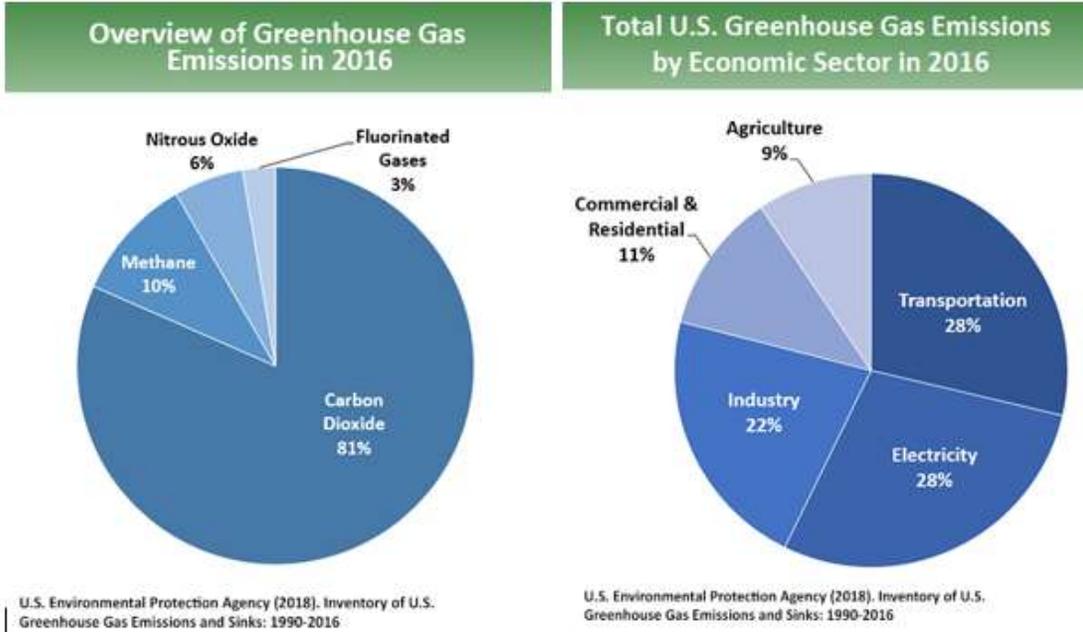


Figure 3-2 California 2016 Greenhouse Gas Emissions

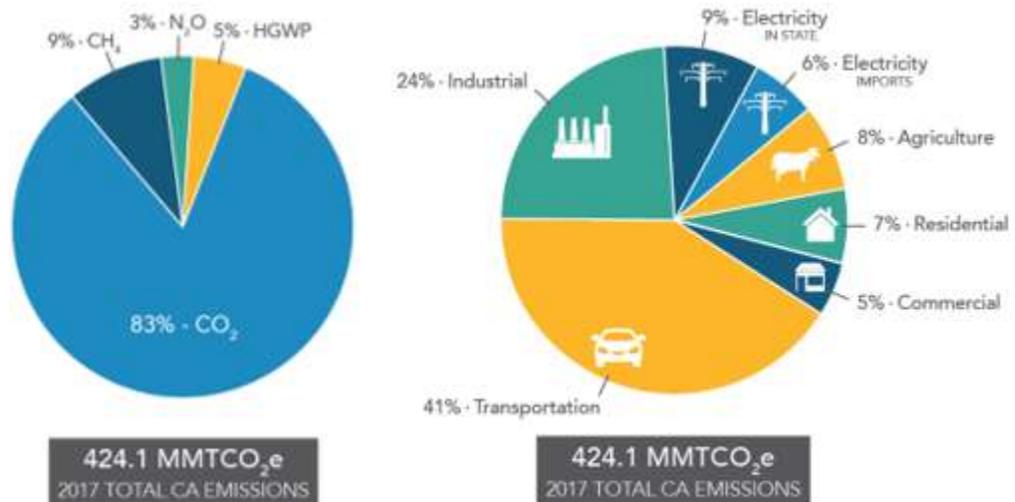
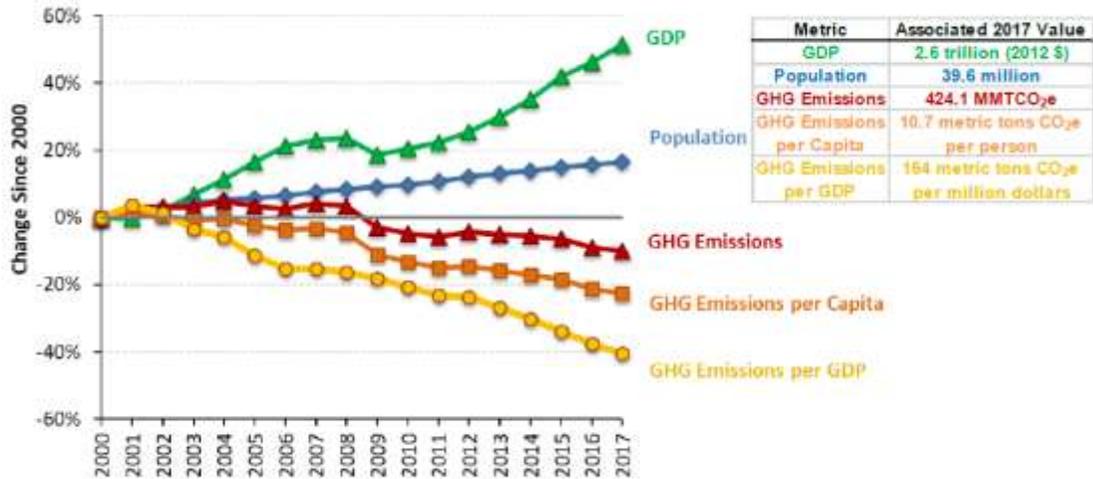


Figure 3-3 Change in California Gross Domestic Product, Population, and Greenhouse Gas Emissions since 2000



Assembly Bill 32 required the California 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 five years. The California 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 Senate Bill 32. The Assembly Bill 32 Scoping Plan and the subsequent updates contain the main strategies California will use to reduce greenhouse gas emissions.

Regional Plans

The California Air Resources Board sets regional targets for California’s 18 Metropolitan Planning Organizations to use in their Regional Transportation Plan/Sustainable Communities Strategy (Strategy) to plan future projects that will cumulatively achieve greenhouse gas reduction goals. 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 2019 Strategy and 2020 Regional Transportation Improvement Program for the Council of Governments. The California Air Resources Board’s reduction targets for Council of Governments are 3 percent by 2020 and 11 percent by 2035, relative to 2005 (ARB 2019c). Table 3-1 lists identified strategies.

Table 3-1 Regional and Local Greenhouse Gas Reduction Plans

Title	Greenhouse Gas Reduction Policies or Strategies
Council of Governments 2019 Regional Transportation Plan/Sustainable Communities Strategy	<ul style="list-style-type: none"> • Integrated multi-modal network • Expand public transit network • Encourage charging stations (EV and e-bike) • Identify grant opportunities for subsidies for e-bike leasing • Accelerate deployment of Alternative Fuel Vehicles and infrastructure • Coordinate efforts to promote flexible work hours, telecommuting, etc. to reduce peak-hour congestion and commute trips • Collaborate with local public health community to improve public health outcomes through modal investments and the SCS • Transportation Systems Management measures • Transportation Demand Management • Secure funding for and encourage use of Park & Ride lot system • Fund transportation projects designed to reduce congestion • Encourage active transportation • Incorporate complete streets policies • Provide funding for projects that support land uses that improve jobs-housing balance • Improve jobs-housing balance across North County, Central County, and South County • Protect habitat and open space areas
Council of Governments 2020 Regional Transportation Improvement Plan	<ul style="list-style-type: none"> • Improve multi-modal connections between communities • Grow San Luis Obispo Regional Transit Authority ridership by approximately two-thirds • Reduce congestion • Increase affordable transportation options
Council of Governments Community 2050 Regional Blueprint	<ul style="list-style-type: none"> • Strengthen and direct development toward existing communities • Create walkable neighborhoods and towns • Provide a variety of transportation choices • Enhance multi-modal and community connectivity • Increase use of clean, alternative energy • Advocate development of renewable energy resources • Prioritize energy efficiency through building code improvements • Increase average fuel efficiency of fleet vehicles
City of Pismo Beach General Plan and Local Coastal Program (adopted 1992; updated April 2014)	<ul style="list-style-type: none"> • Principle P-4—Clean Air—A Must: retain consistency with county air pollution control district • Policy CO-4—Trip Reduction: reduce number of vehicle trips
City of Pismo Beach Climate Action Plan	<ul style="list-style-type: none"> • Transportation Demand Management incentives • Electric vehicle network and alternative fueling stations • Increase transit service frequency/speed • City government energy efficiency retrofits and upgrades • Energy efficiency requirements for new city-owned buildings • Renewable energy systems on city property • Energy efficiency outreach and incentive programs • Smart growth

3.3.3 Project Analysis

Greenhouse gas emissions from transportation projects can be divided into those produced during operation of the state highway system and those produced during construction. The main greenhouse gases produced by the transportation sector are carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons. Carbon dioxide emissions are a product of the combustion of petroleum-based products, like gasoline, in internal combustion engines. Relatively small amounts of methane and nitrous oxide are emitted during fuel combustion. In addition, a small amount of hydrofluorocarbon emissions is 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 v. San Diego Assn. of Governments (2017) 3 Cal.5th 497, 512.) In assessing cumulative impacts, it must be determined if a project’s incremental effect is “cumulatively considerable” (CEQA Guidelines Sections 15064(h)(1) and 15130).

To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. Although climate change is ultimately a cumulative impact, not every individual project that emits greenhouse gases must necessarily be found to contribute to a significant cumulative impact on the environment.

Operational Emissions

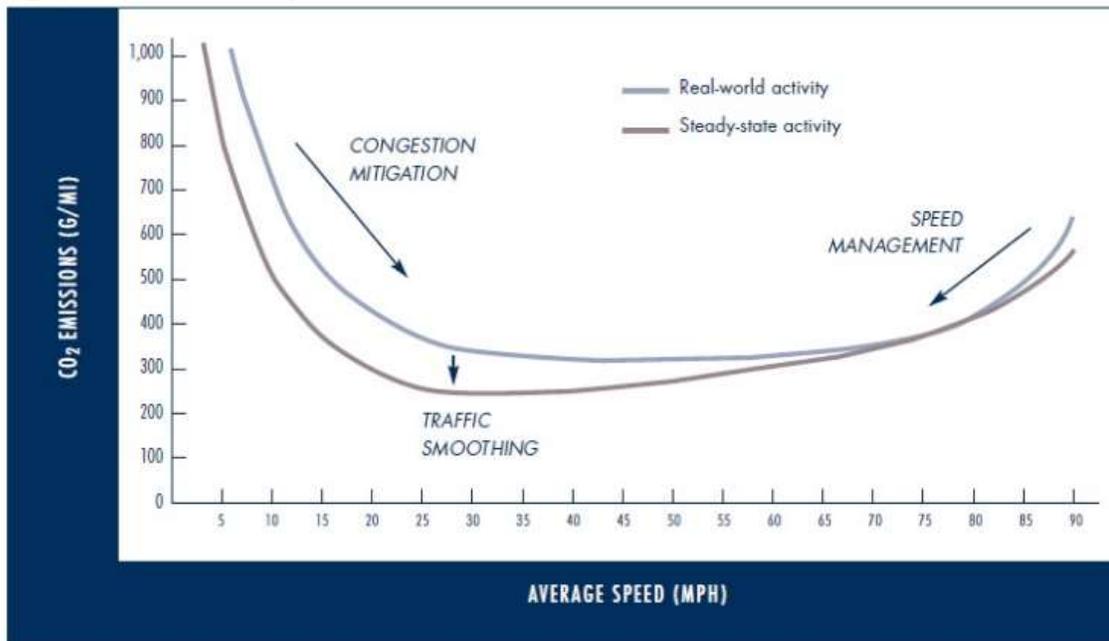
Carbon dioxide accounts for 95 percent of transportation greenhouse gas emissions in the U.S. The largest sources of transportation-related greenhouse gas emissions are passenger cars and light-duty trucks, including sport utility vehicles, pickup trucks, and minivans. These sources account for over half of the emissions from the sector. The remainder of greenhouse gas emissions comes from other modes of transportation, including freight trucks, commercial aircraft, ships, boats, and trains, as well as pipelines and lubricants. Because carbon dioxide emissions represent the greatest percentage of greenhouse gas emissions it has been selected as a proxy within the following analysis for potential climate change impacts generally expected to occur.

The highest levels of carbon dioxide from mobile sources such as automobiles occur at stop-and-go speeds (0–25 miles per hour) and speeds over 55 miles per hour; the most severe emissions occur from 0–25 miles per hour (see Figure 3-4). To the extent that a project relieves congestion by enhancing operations and improving travel times in high-congestion travel

corridors, greenhouse gas emissions, and particularly carbon dioxide, may be reduced.

Four primary strategies can reduce greenhouse gas emissions from transportation sources: (1) improving the transportation system and operational efficiencies, (2) reducing travel activity, (3) transitioning to lower greenhouse gas-emitting fuels, and (4) improving vehicle technologies/efficiency. To be most effective, all four strategies should be pursued concurrently.

Figure 3-4 Traffic Operations on Carbon Dioxide Emissions



The project is included in the Council of Governments 2019 Regional Transportation Plan/Sustainable Communities Strategy (Regional Plan), which reflects the region’s strong commitment to building a more sustainable transportation system through long-range planning efforts. The Pismo Congestion Relief Pilot Project is identified in the Regional Plan as one of the priority corridors with the greatest overall anticipated system benefits. The Council of Governments Board of Directors’ endorsed scenario for the 2019 Regional Plan would achieve an 11 percent reduction in per-capita greenhouse gas emissions by 2030 relative to 2005, meeting the California Air Resources Board’s regional target for San Luis Obispo.

The Council of Governments’ US 101 Corridor Mobility Master Plan identifies this section of US 101 as one of the highway’s most congested corridors in San Luis Obispo County. Adding a part-time travel lane is expected to improve traffic operations by reducing travel delay, reducing buffer time, improving vehicle flow and speed, and reducing collisions throughout the corridor. The reduction of existing and predicted future peak-hour congestion

would provide a long-term benefit to ambient air quality relative to existing/baseline 2018, directly addressing the 2019 Regional Transportation Plan’s action item aimed at “reducing congestion in highly traveled and highly congested corridors.”

In addition to the part-time travel lane, the proposed project would include other Transportation System Management elements: closed circuit television to monitor real-time operations, a vehicle detection system to monitor traffic flow and speed, and a fiber optic infrastructure network. These features will contribute to the 2019 Regional Transportation Plan’s Transportation System Management goals and contribute to the reduction of greenhouse gases by improving the transportation system and operational efficiencies.

The new park-and-ride lot at Mattie Road and Route 1 would contribute to multi-modal system connectivity, aligning with the 2019 Regional Transportation Plan’s goal of maximizing the transportation system’s efficiency through Transportation Demand Management. The park-and-ride lot would provide travelers an alternative mode of travel, which could improve travel time reliability. This section of the US 101 does not support pedestrian or bicycle traffic, therefore there would be no effect on these modes.

Quantitative Analysis

Table 3-2 compares the carbon dioxide emissions and annual vehicle miles traveled by alternative for both the opening year (2026) and the design year (2046), relative to the baseline year (2018). These quantities were computed using CT-EMFAC (2017). Annual carbon dioxide emissions values were derived from daily 5-hour peak-period carbon dioxide values multiplied by 347, per Air Resources Board methodology. Annual vehicle miles traveled values derived from adding daily weekday and weekend 5-hour peak-period vehicle miles traveled values (then multiplying the sum by 347, per Air Resources Board methodology).

Table 3-2 Modeled Annual Carbon Dioxide Emissions and Vehicle Miles Traveled, by Alternative

Alternative	Carbon Dioxide (tons/year)	Annual Vehicle Miles Traveled
2018 baseline	34,700	59,718,000
2026 No-Build Alternative	30,100	61,327,000
2026 Alternative 1 (and variation)	32,500	65,882,000
2026 Alternative 2	32,900	66,016,000
2046 No-Build Alternative	26,800	63,670,000
2046 Alternative 1 (and variation)	27,300	70,474,000
2046 Alternative 2	27,300	70,922,000

The anticipated increase in carbon dioxide tailpipe emissions under Alternatives 1 and 2 compared to the No-Build Alternative is likely tied to the increase in southbound vehicle speeds during peak afternoon hours that would occur as a result of less congestion. Vehicles are typically most efficient between 35 and 55 miles per hour. As vehicle speeds increase beyond 55 miles per hour, carbon dioxide emissions would also be expected to increase.

However, under all project alternatives, including the No-Build, annual carbon dioxide emissions would decrease in the future compared to 2018 even as vehicle miles traveled increase. This reduction is partially due to the emissions benefits of rulemakings, including on-road diesel fleet rules, Advanced Clean Car Standards, and the Smartway/Phase 1 Heavy Duty Vehicle Greenhouse Gas Regulation. The California vehicle fleet also will become cleaner over time as older engines are phased out and replaced by newer, less-polluting engines.

While CT-EMFAC has a rigorous scientific foundation and has been vetted through multiple stakeholder reviews, its greenhouse gas emission rates are based on tailpipe emission test data. [This analysis does not currently account for the effects of the U.S. National Highway Traffic Safety Administration and Environmental Protection Agency Safer Affordable Fuel-Efficient Vehicles Rule. Part One revoking California's authority to set its own greenhouse gas emissions standards was published on September 27, 2019 and effective November 26, 2019. The Safer Affordable Fuel-Efficient Vehicles Rule Part 2 became effective June 30, 2020 and amends existing Corporate Average Fuel Economy and tailpipe carbon dioxide emissions standards for passenger cars and light trucks and establishes new standards covering model years 2021 through 2026. The rule would retain the model year 2020 standards for both programs through model year 2026. The modeling for this project does not include adjustment factors for greenhouse gas emissions that would account for the Safer Affordable Fuel-Efficient Rule. However, modeling these estimates with EMFAC2017 or CT-EMFAC2017 remains the most precise means of estimating future greenhouse gas emissions.] Moreover, the model does not account for factors such as the rate of acceleration and vehicle aerodynamics, which influence the amount of emissions generated by a vehicle. Greenhouse gas emissions quantified using CT-EMFAC are therefore estimates and may not reflect actual physical emissions. Though CT-EMFAC is currently the best available tool for calculating greenhouse gas emissions from mobile sources, it is important to note that the greenhouse gas results are only useful for a comparison among alternatives.

Construction Emissions

Construction greenhouse gas emissions would result from material processing, onsite construction equipment, and traffic delays due to construction. These emissions will be produced at different levels throughout

the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

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

The Caltrans Construction Emissions Tool 2018 (CAL-CET 2018) was used to quantify construction greenhouse gas emissions. Carbon dioxide emissions from construction activity for Build Alternatives 1 and 2 were calculated to be approximately 950 and 952 tons, respectively, over a 737-day construction period. This estimate is based on the best information available during preliminary design.

During construction, Caltrans would reduce greenhouse gas emissions whenever feasible. All construction contracts include Caltrans Standard Specifications Section 7-1.02A and 7 1.02C, Emissions Reduction, which require contractors to comply with all laws applicable to the project and to certify they are aware of and will comply with all Air Resources Board emission reduction regulations; and Section 14-9.02, Air Pollution Control, which requires contractors to comply with all air pollution control rules, regulations, ordinances, and statutes. Certain common regulations, such as equipment idling restrictions, that reduce construction vehicle emissions also help reduce greenhouse gas emissions. The traffic management plan would also help reduce greenhouse gas emissions from idling vehicles during construction traffic delays.

CEQA Conclusion

Upon opening, the proposed project would increase carbon dioxide emissions by 2,400 to 2,800 tons per year due to increased vehicle speed, however by 2046, the increase would be fewer than 500 tons more per year than if the project were not constructed. Furthermore, even though the project would increase carbon dioxide emissions, those emissions are expected to be approximately 7,400 tons per year lower than 2018 levels. The proposed project would not conflict with any plan, policy, or regulation adopted to reduce greenhouse gas emissions, but the improvement in carbon dioxide emissions can be attributed to greenhouse gas reduction strategies and cleaner vehicles rather than to the project itself. The project could be found to have significant impacts on greenhouse gas emissions. (See section 3.2.8, *Greenhouse Gas Emissions*.) However, the reduced emissions from 2018 levels indicate substantial progress in meeting statewide emissions reduction goals. To that end, Caltrans is committed to implementing measures to help reduce greenhouse gas emissions. These measures are outlined in the following section.

3.3.4 Greenhouse Gas Reduction Strategies

Statewide Efforts

Major sectors of the California economy, including transportation, will need to reduce emissions to meet the 2030 and 2050 greenhouse gas emissions targets. Former Governor Edmund G. Brown promoted greenhouse gas reduction goals that involved (1) reducing today's petroleum use in cars and trucks by up to 50 percent; (2) increasing from one-third to 50 percent our electricity derived from renewable sources; (3) doubling the energy efficiency savings achieved at existing buildings and making heating fuels cleaner; (4) reducing the release of methane, black carbon, and other short-lived climate pollutants; (5) managing farms and rangelands, forests, and wetlands so they can store carbon; and (6) periodically updating the state's climate adaptation strategy, Safeguarding California. See Figure 3-5.

Figure 3-5 California Climate Strategy



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. A key state goal for reducing greenhouse

gas emissions is to reduce today's petroleum use in cars and trucks by up to 50 percent by 2030 (State of California 2019).

In addition, Senate Bill 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-ground and below-ground matter.

Caltrans Activities

Caltrans continues to be involved on the Governor's Climate Action Team as the California Air Resources Board works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in Assembly Bill 32. Executive Order B-30-15, issued in April 2015, and Senate Bill 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.

California Transportation Plan (CTP 2040)

The California Transportation Plan is a statewide, long-range transportation plan to meet our future mobility needs and reduce greenhouse gas emissions. In 2016, Caltrans completed the *California Transportation Plan 2040*, which establishes a new model for developing ground transportation systems, consistent with carbon dioxide reduction goals. It serves as an umbrella document for all the other statewide transportation planning documents. Over the next 25 years, California will be working to improve transit and reduce long-run repair and maintenance costs of roadways and developing a comprehensive assessment of climate-related transportation demand management and new technologies rather than continuing to expand capacity on existing roadways.

Senate Bill 391 (Liu 2009) requires the California Transportation Plan to meet California's climate change goals under Assembly Bill 32. Accordingly, the California Transportation Plan 2040 identifies the statewide transportation system needed to achieve maximum feasible greenhouse gas emission reductions while meeting the state's transportation needs. While Metropolitan Planning Organizations have primary responsibility for identifying land use patterns to help reduce greenhouse gas emissions, California Transportation Plan 2040 identifies additional strategies in Pricing, Transportation Alternatives, Mode Shift, and Operational Efficiency.

Caltrans Strategic Management Plan

The Strategic Management Plan, released in 2015, creates a performance-based framework to preserve the environment and reduce greenhouse gas emissions, among other goals. Specific performance targets in the plan that will help to reduce greenhouse gas emissions include the following:

- Increasing percentage of non-auto mode share
- Reducing vehicle miles traveled
- Reducing Caltrans' internal operational (buildings, facilities, and fuel) greenhouse gas emissions

Funding and Technical Assistance Programs

In addition to developing plans and performance targets to reduce greenhouse gas emissions, Caltrans also administers several sustainable transportation planning grants. These grants encourage local and regional multimodal transportation, housing, and land use planning that furthers the region's Regional Transportation Plan/Sustainable Communities Strategy; contribute to the State's greenhouse gas reduction targets and advance transportation-related greenhouse gas emission reduction project types/strategies; and support other climate adaptation goals (e.g., *Safeguarding California*).

Caltrans Policy Directives and Other Initiatives

Caltrans Director's Policy 30 Climate Change (June 22, 2012) is intended to establish a Department policy that will ensure coordinated efforts to incorporate climate change into Departmental decisions and activities. *Caltrans Activities to Address Climate Change* (April 2013) provides a comprehensive overview of Caltrans' statewide activities to reduce greenhouse gas emissions resulting from agency operations.

Project-Level Greenhouse Gas Reduction Strategies

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

Construction Emissions Reduction Measures

- The construction contractor must comply with the Caltrans' Standard Specifications in Section 14-9 (2018), which specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.
- Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by CA Code of Regulations Title 17, Section 93114.

- A construction traffic management plan will ensure 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.

Operational Emissions Reduction Measures

- Preserve mature vegetation as a means of mitigating adverse air quality impacts to the maximum degree feasible. The proposed project would be designed to minimize removal of existing trees, especially mature trees.
- Include thick, vegetative plantings and tree canopy where strategically possible to reduce population exposure to existing and future emissions from motor vehicles and to reduce the urban heat island effect.
- Plant disturbed areas with a variety of native and drought-tolerant trees and shrubs to the extent possible to replace the air quality and cooling benefits of trees removed by construction of the project. Trees would be planted from the largest container size horticulturally appropriate to accelerate reestablishment of the greenhouse gas sink and to shade the pavement. Riparian planting would also be included to maintain shade along creek corridors.
- Incorporate landscaping components such as mulch and compost application to improve carbon sequestration rates in soils and reduce organic waste.
- Per Deputy Directive 17 *Recycling Asphalt Concrete*, incorporate recycling and waste diversion techniques by promoting the reuse of materials such as steel, road base, concrete, and asphalt-concrete to the extent feasible.

3.3.5 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 NEPA regulations, policies, and guidance.

The U.S. Global Change Research Program delivers a report to Congress and the president every four years, in accordance with the Global Change Research Act of 1990 (15 U.S. Code Chapter 56A Section 2921 et seq.). The Fourth National Climate Assessment, published in 2018, presents the foundational science and the “human welfare, societal, and environmental elements of climate change and variability for 10 regions and 18 national topics, with particular attention paid to observed and projected risks, impacts, consideration of risk reduction, and implications under different mitigation pathways.” Chapter 12, “Transportation,” presents a key discussion of vulnerability assessments. It notes that “asset owners and operators have increasingly conducted more focused studies of particular assets that consider multiple climate hazards and scenarios in the context of asset-specific information, such as design lifetime” (USGCRP 2018).

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 the U.S. Department of Transportation 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).

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. California’s Fourth Climate Change Assessment (2018) is the state’s effort to “translate the state of climate science into useful information for action” in a variety of sectors at both statewide and local scales. It adopts the following key terms used widely in climate change analysis and policy documents:

- *Adaptation* to climate change refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.
- *Adaptive capacity* is the “combination of the strengths, attributes, and resources available to an individual, community, society, or organization that can be used to prepare for and undertake actions to reduce adverse impacts, moderate harm, or exploit beneficial opportunities.”
- *Exposure* is the presence of people, infrastructure, natural systems, and economic, cultural, and social resources in areas that are subject to harm.
- *Resilience* is the “capacity of any entity—an individual, a community, an organization, or a natural system—to prepare for disruptions, to recover from shocks and stresses, and to adapt and grow from a disruptive experience.” Adaptation actions contribute to increasing resilience, which is a desired outcome or state of being.
- *Sensitivity* is the level to which a species, natural system, or community, government, etc. would be affected by changing climate conditions.
- *Vulnerability* is the “susceptibility to harm from exposure to stresses associated with environmental and social change and from the absence of capacity to adapt.” Vulnerability can increase because of physical (built and environmental), social, political, and/or economic factor(s). These factors include, but are not limited to: ethnicity, class, sexual orientation and identification, national origin, and income inequality. Vulnerability is often defined as the combination of sensitivity and adaptive capacity as affected by the level of exposure to changing climate.

Several key state policies have guided climate change adaptation efforts to date. Recent state publications produced in response to these policies draw on these definitions.

Executive Order S-13-08, issued by then-governor Arnold Schwarzenegger in November 2008, focused on sea-level rise and resulted in the California Climate Adaptation Strategy (2009), updated in 2014 as Safeguarding California: Reducing Climate Risk (Safeguarding California Plan). The Safeguarding California Plan offers policy principles and recommendations and continues to be revised and augmented with sector-specific adaptation strategies, ongoing actions, and next steps for agencies.

Executive Order S-13-08 also led to the publication of a series of sea-level rise assessment reports and associated guidance and policies. These reports formed the foundation of an interim *State of California Sea-Level Rise Interim Guidance Document* (SLR Guidance) in 2010, with instructions for how state agencies could incorporate “sea-level rise (SLR) projections into planning and decision making for projects in California” in a consistent way across agencies. The guidance was revised and augmented in 2013. *Rising Seas in*

California—An Update on Sea-Level Rise Science was published in 2017 and its updated projections of sea-level rise and new understanding of processes and potential impacts in California were incorporated into the *State of California Sea-Level Rise Guidance Update* in 2018.

Executive Order B-30-15, signed in April 2015, requires state agencies to factor climate change into all planning and investment decisions. This Executive Order recognizes that effects of climate change other than 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. Representatives of Caltrans participated in the multi-agency, multidisciplinary technical advisory group that developed this guidance on how to integrate climate change into planning and investment.

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

Caltrans Adaptation Efforts

Caltrans Vulnerability Assessments

Caltrans is conducting climate change vulnerability assessments to identify segments of the State Highway System vulnerable to climate change effects including precipitation, temperature, wildfire, storm surge, and sea-level rise. The approach to the vulnerability assessments was tailored to the practices of a transportation agency, and involves the following concepts and actions:

- Exposure—Identify Caltrans assets exposed to damage or reduced service life from expected future conditions.
- Consequence—Determine what might occur to system assets in terms of loss of use or costs of repair.
- Prioritization—Develop a method for making capital programming decisions to address identified risks, including considerations of system use and/or timing of expected exposure.

The climate change data in the assessments were developed in coordination with climate change scientists and experts at federal, state, and regional organizations at the forefront of climate science. The findings of the vulnerability assessments will guide analysis of at-risk assets and

development of adaptation plans to reduce the likelihood of damage to the State Highway System, allowing Caltrans to both reduce the costs of storm damage and to provide and maintain transportation that meets the needs of all Californians.

Project Adaptation Analysis

As noted above, it is expected that California may be vulnerable to climate change effects that relate to temperature, precipitation, wildfire, sea level rise, storm surge, and cliff retreat. Given the 20-year design year of 2046, climatic conditions have been considered during project planning and incorporated into project design whenever feasible. Such planning strategies are consistent with the County of San Luis Obispo and the City of Pismo Beach's Local Coastal Programs and the Council of Governments' 2019 Regional Transportation Plan/Sustainable Communities Strategy.

Although the analysis of climate change risk involves a degree of uncertainty relating to the timing and intensity of potential risks, the construction of the project itself is not expected to locally worsen the effects of climate change.

Sea-Level Rise

The portion of the project within the coastal zone is almost entirely within the limits of the City of Pismo Beach, except for the short segment northward of Avila Beach Drive. The California Coastal Commission has retained original jurisdiction in the area surrounding Pismo Creek. The project is therefore subject to the policies of the California Coastal Act and the local coastal programs of both the County of San Luis Obispo and the City of Pismo Beach.

Within the project limits, US 101 ranges from about 200 feet to 1.3 miles from the ocean and the elevation varies between 25 to 262 feet above sea level. The State of California 2018 Sea Level Rise Guidance Document provides probabilistic projections for the height of sea level rise along the California coast using the most current data from the Ocean Protection Council.

The freeway lanes are generally planned for a 20-year life span, therefore the southbound lanes of US 101 would be reconstructed or rehabilitated before 2040. Likewise, the southbound bridge at Pismo Creek was built in 1960 with an expected life span of 75 years. Consequently, this bridge would also likely be replaced by 2040. However, for this analysis, the projection year 2050 was used. Under a high-emissions scenario, there is 0.5 percent probability that sea level rise will meet or exceed 1.0 foot by the year 2050 at the Port San Luis tide gauge, located at the end of the pier; under an extreme climate change (H++) scenario, sea level is predicted to rise 2.6 feet. At this level, the tide would encroach somewhat farther onto the beach area of Pismo Beach and expand the volume at the outlet of Pismo Creek, but creek expansion would stop short of the freeway bridges. Sea level would need to rise by nearly 5 feet before the water level of Pismo Creek at the bridge was affected;

this is not expected within the life span of the bridge. Under no predictable scenario would sea level rise encroach upon the freeway lanes. Therefore, the proposed project is not expected to be affected by sea level rise, nor would it exacerbate the effects of sea level rise.

Floodplains

The project limits border a floodway and cross an area inundated by a 1 percent annual chance of flooding for which base flood elevations have been determined (zone AE) at Pismo Creek. As a result of climate change, future rainfall in the project region is expected to be heavier but less frequent. According to the District 5 Climate Change Vulnerability Assessment, by the year 2055, the 100-year storm depth could increase by up to 4.9 percent. Please see section 2.2.2 *Water Quality and Storm Water Runoff* for more information.

Wildfire

The Caltrans Climate Change Vulnerability Assessment for District 5 integrates three different models that take into consideration factors such as temperature, precipitation, vegetation, population density, and fire history to determine the potential impacts of wildfires on the state highway system. The majority of the project is within the local responsibility area of CalFire's Fire Hazard Severity Zone map; portions of this area are very high fire hazard severity zones, but otherwise the local responsibility area has no fire hazard rating. (The northern, inland section of the project limits is within a high fire hazard severity zone within the state responsibility area.)

The Caltrans Vulnerability Assessment map shows a moderate level of wildfire exposure concern for the project location in the year 2055 based on a scenario with high greenhouse gas emissions continuing to the end of the century. Caltrans 2018 revised Standard Specification 7-1.02M(2) mandates fire prevention procedures during construction, including a fire prevention plan. Once completed, the project will not impair emergency response vehicles or emergency evacuation and is not anticipated to exacerbate the impacts of wildfires intensified by climate change. See section 3.2.20 *Wildfire* for more information.

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Chapter 4 **Comments and Coordination**

Coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and mitigation measures, and related environmental requirements. Agency consultation and public participation for this project have been accomplished through a variety of formal and informal methods, including project development team meetings and interagency coordination meetings, as part of Caltrans' efforts to identify, address, and resolve project-related issues.

Project development meetings have been held regularly since January 2017 and have included the Caltrans project team as well as members of the San Luis Obispo Council of Governments (Council of Governments). In addition, Caltrans has presented project updates at the following events:

- Council of Governments board meetings, October 2017 and September 2019
- San Luis Obispo County Mayors monthly meeting, November 2017
- Council of Governments' Technical Transportation Advisory Committee meeting, September 2019
- City of Pismo Beach Traffic Safety Committee meeting, October 2019

In September 2017, a Notice of Preparation for the project was circulated to local agencies describing the following project components:

- Extending the existing southbound truck lane near Spyglass Drive.
- Reconstructing the southbound inside shoulder to serve as a left shoulder part-time travel lane during peak periods.
- Reconfiguring the southbound Mattie Road on-ramps and off-ramps, and constructing of an auxiliary lane between the relocated southbound Mattie Road on-ramp and Route 1 (Dolliver Street)/Price Street southbound off-ramp.
- Potentially removing the Shell Beach Road on-ramp at Dinosaur Caves Park based on further benefit-cost and design standards analyses.

In response to the Notice of Preparation, the California Highway Patrol expressed concerns over the impact project construction could have on traffic congestion. The agency acknowledged current and continued communication with Caltrans in order to provide feedback and perspective. In October 2017 and January 2020, Caltrans met with individuals from the California Highway Patrol to discuss impacts during construction and incorporation of the Freeway Service Patrol.

The San Luis Obispo County Air Pollution Control District (District) also responded to the Notice of Preparation with comments including: a request for an air quality assessment to address short-term and long-term emissions impacts; mitigation if the impacts are above the District's thresholds in the 2012 CEQA Air Quality Handbook; attention to the potential for asbestos-containing material during demolition; recommended dust control measures during construction; attention to diesel emissions near sensitive receptors during construction; consideration of feasible alternatives that would minimize air quality impacts; potential permitting information.

On May 16, 2018, Caltrans held a public meeting at the City of Pismo Beach council chamber. At that time, the project still included consideration of various components: reconfiguring the Mattie Road ramps, extending the truck-climbing lane, constructing an auxiliary lane, constructing a park-and-ride lot, and removing the Shell Beach Road on-ramp, in addition to the widened shoulder. The following is a summary of the comments received from the public:

- Add ramp metering to reduce peak-period congestion.
- Consider a long-term solution to re-route Route 101 inland, roughly following Route 227.
- Replace the post-and-beam outside-shoulder safety barrier with a concrete barrier to help reduce freeway noise and pollution.
- Extend the truck-climbing lane to the off-ramp at Spyglass Drive.
- Do not close either the southbound Spyglass Drive off-ramp or the Dinosaur Caves off-ramp.
- Place a sign directing slower traffic to the truck-climbing lane.
- The Avila Beach Drive/Shell Beach Road/ramps intersection is dangerous, confusing, and congested.
- Route 101 should be six lanes from Paso Robles to Santa Barbara, or at minimum, several three-lane passing areas should be developed within Paso Robles, Atascadero, San Luis Obispo, and Nipomo, in addition to the Avila Beach/Pismo Beach corridor.
- Operate the part-time travel lane between 2:00 p.m. and 6:00 p.m. daily, including weekends.
- Provide three lanes southbound beginning at Spyglass Drive for as far south as possible.
- There is congestion from San Luis Obispo to the Santa Maria River that should be addressed by widening Route 101 to three lanes.
- Traffic speeds vary from 65-70 miles per hour to a full stop at every major on-ramp and off-ramp; closing ramps would only move the existing traffic to the next one.

- Route 101 is a major evacuation route that needs to be fully maintained.
- The truck-climbing lane has caused congested traffic to come to a full stop due to people weaving in and out of the lane. The proposed part-time travel lane will have the same effect, backing up traffic even farther.
- Remove the Price Street off-ramp; lack of sight distance makes left turns difficult.
- On a southbound commute, there is difficulty from the Five Cities Drive on-ramp to the 4th Street exit because drivers are not aware the lane is exit-only and make unexpected lane changes. White arrows directing drivers to the right lane would help.
- On a northbound commute, the congestion and short merge lane from the North Oak Park Boulevard on-ramp to the 4th Street on-ramp results in crashes from impatient drivers who try to pass or tailgate.

Throughout 2017 and 2018, Caltrans participated in the early consultation and coordination process as required by Assembly Bill 52. In response to Caltrans' initial query, in May 2017 the Northern Chumash tribe requested consultation on the project. Caltrans met with Northern Chumash members on the project site and provided the Archaeological Survey Report and project mapping. Subsequently, in September 2018, Caltrans received communication from the tribe; their comments are summarized as follows:

- Circles on a map never tell the whole story and are sometimes an incomplete guide for areas that have been tested. Testing could be inadequate and/or the reports could be missing important information.
- All sites within the project limits must be treated carefully, and in particular CA-SLO-801, which is highly sensitive. In addition, the on-ramps and off-ramps should be avoided if possible to avoid sites located nearby.
- Cultural soil should stay in place. In the event any cultural soil has to be relocated, it must go to a predetermined safe place.
- Any monitoring must be conducted by a Northern Chumash representative. Other monitors must be knowledgeable and experienced in Northern Chumash cultural ways, material culture, and cultural landscape.
- Firm language is needed about protecting Pismo Rock.
- Copies of Applied EarthWorks' monitoring plan should be provided to the tribe for review prior to implementation.
- Maps from engineers and archaeologists should be to the same scale.

A request to the Native American Heritage Commission for a sacred lands file search in early 2018 was returned as negative (i.e., there are no recorded sacred lands in the area).

Chapter 5 List of Preparers

This document was prepared by the following Caltrans staff:

Carr, Robert, Landscape Associate. B.S., Landscape Architecture; 29 years of experience in visual impact analysis and landscape architecture. Contribution: Visual Impact Analysis.

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Gomez, Rayond, Transportation Engineer. B.S., Environmental Engineering; 1 year of experience in environmental engineering. Contribution: Noise Study Report.

Haydu, Damon, Associate Environmental Planner (Cultural Resources). M.A., Cultural Resources Management; 23 years of experience in prehistoric and historic archaeology. Contribution: Oversight and compilation of Historic Property Survey Report.

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Leyva, Isaac, Engineering Geologist. B.S., Geology; 29 years of experience in petroleum geology, environmental, and geotechnical engineering. Contribution: Initial Site Assessment and paleontology study.

Riegelhuth, Pete, Landscape Architect (Stormwater). B.S., Landscape Architecture; 13 years of experience as Stormwater Coordinator. Contribution: Storm Water Data Report.

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Valdao, Paul, P.E., Project Manager. B.S., Civil Engineering; 21 years of experience in civil engineering.

Chapter 6 **Distribution List**

In addition to those notified by the State Clearinghouse, the following agencies and individuals will receive notice of the availability of the draft Environmental Impact Report/Environmental Assessment:

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Appendix A Resources Evaluated Relative to the Requirements of Section 4(f): No-Use Determination

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

This appendix discusses historic properties found within or next to the project area that do not trigger Section 4(f) protection because they are not eligible historic properties under Section 4(f).

Archaeological Resources

For an archaeological site to be eligible for protection under Section 4(f), it must be listed or eligible for listing on the National Register of Historic Places. For archaeological sites, they must be listed or eligible for listing under criterion A, that is, they must make a contribution to the major pattern of American history.

Extended Phase 1 and Phase 2 testing, as well as research of previously identified historic resources within the project area, was conducted and subsequently noted 10 archaeological sites in the vicinity of the proposed project. (See section 2.1.3, *Cultural Resources* for more information on these sites.) One site, CA-SLO-839, had been determined not eligible for the National Register, and 3 sites—CA-SLO-80/H, -832, and -1003/1420—had been previously determined eligible for the National Register under criterion D (meaning the property has yielded or may be likely to yield information important to history or prehistory). Therefore, the provisions of Section 4(f) do not apply to these properties. Six of the remaining sites were unevaluated; four of these were determined to be outside of the area of potential effects and therefore were also not considered under Section 4(f).

The remaining two sites—CA-SLO-801 and AE-3406-01—were both within the area of potential effects and unevaluated for National Register eligibility. In April 2020, Caltrans requested concurrence from the State Historic Preservation Officer on the eligibility of both these sites for the National Register. Findings demonstrate that the portion of CA-SLO-801 within the Caltrans right-of-way has undergone extensive landform modification associated with US 101 construction; however, intact cultural deposits remain and confirm the integrity of the deposit. Additionally, evidence suggests that CA-SLO-801 was an important prehistoric habitation and cemetery site for the

ancient Chumash and is considered by the modern Native American community to be a location important in California prehistory. Therefore, Caltrans recommended that CA-SLO-801 be found eligible for listing in the National Register under both criteria A and D; AE-3406-01 was recommended under criterion D only.

If the State Historic Preservation Officer had concurred that CA-SLO-801 were eligible under criterion A, the site would have been determined a Section 4(f) property. However, Caltrans received concurrence only on eligibility under criterion D for both sites; therefore, they are not Section 4(f) properties and the provisions of Section 4(f) do not apply.

Architectural Resources

Seven historic-period built-environment properties (the former Machado residence at 2920 Shell Beach Road and six properties directly north of the Wadsworth Avenue northbound off-ramp: 470 and 472 Pismo Avenue; 901, 951, and 991 Bello Street; and 475 Hollister Avenue) were identified within the project's area of potential effects. Caltrans formally evaluated the properties to determine whether they were eligible for listing in the National Register of Historic Places and determined that none met any of the criteria for eligibility. All additional resources, including 13 bridges within the area of potential effects, have been previously determined to be ineligible for the National Register. None of the properties are a Section 4(f) property; therefore, the provisions of Section 4(f) do not apply.

Appendix B Title VI Policy Statement

DEPARTMENT OF TRANSPORTATION

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November 2019

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To obtain this information in an alternate format such as Braille or in a language other than English, please contact the California Department of Transportation, Office of Business and Economic Opportunity, at 1823 14th Street, MS-79, Sacramento, CA 95811; (916) 324-8379 (TTY 711); or at Title.VI@dot.ca.gov.

A handwritten signature in blue ink, appearing to read 'Toks Omishakin'.

Toks Omishakin
Director

Appendix C Avoidance, Minimization and/or Mitigation Summary

The following summarizes the measures that could be included in the project to avoid or minimize impacts to environmental resources as a result of the project. Anticipated impacts to visual quality and cultural resources have been determined to be significant under CEQA, as well as impacts from the increase in noise as a result of the project. Measures to mitigate significant or potentially significant impacts under CEQA are identified. Impacts to other resources have been determined to be less than significant under CEQA. The potential impacts and specific measures are discussed in more detail in Chapter 2.

Visual/Aesthetics

Soundwalls, retaining walls, bridge rail, concrete slope paving, contrast surface treatment, and concrete weed control will include aesthetic treatment. Metal components, including but not limited to poles, cabinets, equipment and connectors, and fences, will be painted or otherwise colored. Barriers and guardrail will be placed at the lowest possible elevation. The project will include new landscaping; any constructed soundwalls would be obscured with vegetation as much as possible. The park-and-ride lot will include landscaping that reduces the visibility of parked vehicles as seen from US 101. The project will include the minimum number of signals, lights and signs required to meet the project's functional and safety requirements.

Visual impacts from the project have been determined to be significant under CEQA. These measures would minimize, but not fully mitigate the impacts to below the level of significance.

Cultural Resources

Treatment measures would be necessary to address the effects of the project on the deposits eligible for the National Register or the California Register. Treatment measures typically would include data recovery excavations with full analysis and interpretations based on a research design. However, due to the nature of the freeway project, archaeological excavations prior to construction in many areas may not be feasible due to safety and access issues. Given the breadth of this project, which covers most of the Pismo terrace, additional treatment could include ethnographic studies, compilation of previous archaeological data, and/or oral history interviews from modern descendant communities. Also, measures should include a form of public outreach. Public interpretive materials would include, but not be limited to, an exhibit or sign approved by Caltrans, the County of San Luis Obispo, and the City of Pismo Beach with input and consultation with local Native Americans to be placed in an easily accessible location, on a website, or a static exhibit

suitable for display at The History Center, San Luis Obispo Public Library, and/or other appropriate public location within the City of Pismo Beach.

Impacts from the project have been determined to be significant under CEQA and potentially significant under NEPA. These measures would minimize, but not fully mitigate, the impacts to below the level of significance under CEQA; impacts under NEPA would be considered less than significant with these measures included.

Water Quality and Storm Water Runoff

The project design would incorporate permanent storm water treatment best management practices to treat a minimum of 9 acres of impervious surface. The project would also repair damaged slope paving that is currently suffering from erosion, and all disturbed areas would be treated with erosion control or be replanted to prevent runoff that could cause siltation. A Storm Water Pollution Prevention Plan would be prepared for the project and would include selected best management practices to be included in the project.

Noise

Soundwalls would mitigate significant impacts under CEQA where they were found to be feasible. Where soundwalls were not found to be feasible, these areas would experience significant impacts that could not be mitigated. Open-graded pavement would temporarily minimize the impact by reducing noise levels to some degree, but it cannot be considered a federal noise abatement measure.

Impacts from the project have been determined to be significant under CEQA and cannot be fully mitigated.

Biological Resources

Activities in Pismo Creek would be limited to the dry season, and the creek would be returned to natural contours after construction. Tree removal would occur outside the nesting season. Other work windows would be applied to minimize impacts to sensitive species. Pre-construction surveys would be conducted for aquatic species; if individuals were found, they would be relocated. Applicable measures of the California red-legged frog programmatic biological opinion would be adhered to; these measures would also protect other aquatic species. The measures include a training session for construction personnel, biological monitoring, modifications to equipment to prevent harm to protected aquatic species, removal of exotic aquatic species, and revegetation of the project areas with an assemblage of native riparian, wetland, and upland vegetation suitable for the area.

List of Technical Studies

Air Quality Report

Hazardous Waste Initial Site Assessment

Historical Property Survey Report

- Historic Resource Evaluation Report
- Historic Architectural Survey Report
- Archaeological Survey Report

Initial Paleontology Study

Location Hydraulic Study

Natural Environment Study

Noise Abatement Decision Report

Noise Study Report

Scenic Resource Evaluation/Visual Assessment

Storm Water Data Report

Traffic Operations Analysis Report

Water Quality Report

To obtain a copy of one or more of these technical studies/reports or a printed copy of the Environmental Impact Report/Environmental Assessment, please send your request using the contact information listed on the inside cover page of this document. Please indicate the project name and project identifying code (under the project name on the cover of this document) and specify the technical report or document you would like. Provide your name and email address or U.S. postal service mailing address (street address, city, state and zip code).