State Route 1 Multi-Asset Roadway Rehabilitation Project

SAN MATEO COUNTY, CALIFORNIA
04-01-SM-PM 27.5/34.8
EA 04-0Q130 / Project ID 04-1800-0053

Draft Initial Study with Proposed Negative Declaration

Prepared by the
State of California, Department of Transportation

June 2022

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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 draft Initial Study (IS) with a proposed Negative Declaration (ND), which examines the potential environmental impacts of the alternatives being considered for the State Route 1 Multi-Asset Roadway Rehabilitation Project (project) in San Mateo County, California. Caltrans is the lead agency under the California Environmental Quality Act (CEQA). This document explains why the project is being proposed, what alternatives have been considered for the project, how the existing environment could be affected by the project, the potential impacts of each of the project alternatives, and the proposed avoidance and minimization measures.

What you should do

- Please read this document.
- This document may be downloaded at the following website: CaltransD4Environmental.com
- Caltrans is conducting public meetings via remote presence by video and teleconference to maintain public health and safety best practices and reduce exposure during the COVID-19 pandemic. A virtual public meeting will be held on July 21 2022, from 6:00 pm to 7:30 pm. Meeting information, including links to the online meeting and call-in numbers, is available at CaltransD4Environmental.com. A copy of the presentation material will be available for download 24 hours before the meeting at the same website.
- If you have any comments about the project, please attend the public meeting and/or send your written comments via postal mail or email (preferred) by the August 8 deadline to.

  Caltrans District 4
  Office of Environmental Analysis
  ATTN: John Seal
  P.O. Box 23660, MS: 8B
  Oakland, CA 94623 0660

  or via email (preferred method of contact during COVID-19 protocols) at, John.Seal@dot.ca.gov

What happens next:

In accordance with CEQA Section 15073, Caltrans will circulate the IS/ND for review for at least 30 days. During the 30-day public review period, the general public and responsible and trustee agencies can submit comments on this document to Caltrans. Caltrans will consider the comments and will respond to the comments after the 30-day public review period. After comments are received from the public and reviewing agencies, Caltrans may (1) grant environmental approval to the project, (2) conduct additional environmental studies, or

(3) abandon the project. If the project is given environmental approval and funding is obtained, Caltrans could design and construct all or part of the project.

Alternative Formats:

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to: Department of Transportation, District 4, Attention: John Seal, P.O. Box 23660 MS 8B, Oakland, CA 94623-0660; email John.Seal@dot.ca.gov; (510) 549-6091 (Voice), or use the California Relay Service 1 (800) 735-2929 (TTY to Voice), 1 (800) 735-2922 (Voice to TTY), 1 (800) 855-3000 (Spanish TTY to Voice and Voice to TTY), 1 (800) 854-7784 (Spanish and English Speech-to-Speech) or 711.

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State Clearinghouse Number:
04-SM-01-27.5/34.8
EA No. 04-0Q130
Project No. 04-1800-0053

State Route 1 Multi-Asset Roadway Rehabilitation Project
(Post Miles SM-01 27.5/34.8)

Initial Study with Proposed Negative Declaration

Submitted Pursuant to: (State) Division 13, California Public Resources Code

THE STATE OF CALIFORNIA
Department of Transportation

Responsible Agencies:
California Transportation Commission
San Mateo County
City of Half Moon Bay
California Coastal Commission
California Department of Fish and Wildlife

6/28/2022
Date

Scott M. Williams
Acting Office Chief, Environmental Analysis
California Department of Transportation
CEQA Lead Agency

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

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Proposed Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) is proposing the State Route (SR) 1 Multi-Asset Roadway Rehabilitation Project (project) to rehabilitate existing pavement, improve existing traffic facilities, install Complete Streets elements, and install traffic operations system elements along SR 1 in San Mateo County, California. The project also proposes to install traffic operation system elements at two locations on SR 92 in San Mateo County, California. The project would include rehabilitating pavement; replacing existing drainage inlets, culverts, and dikes; replacing existing guardrails with Midwest guardrail systems; replacing existing crash cushions; upgrading curb ramps; implementing Complete Streets elements; upgrading signal poles; installing conduits; installing traffic operation system elements (intersection cameras, closed circuit television cameras, and traffic monitoring stations); and relocating and/or replacing utility cabinets.

Determination

This proposed Negative Declaration (ND) is included to give notice to interested agencies and the public that it is Caltrans' intent to adopt an ND for this project. This does not mean that Caltrans' decision regarding the project is final. This ND is subject to change based on comments received by interested agencies and the public.

Caltrans has prepared an Initial Study for this project and, pending public review, expects to determine from this study that the proposed project would not have a significant effect on the environment for the following reasons:

- The project would have no effect on agriculture and forestry, air quality, cultural resources, mineral resources, noise, population and housing, public services, recreation, tribal cultural resources, and utilities and service systems.

- With standard Caltrans conservation measures and project-specific avoidance and minimization measures the project would have less-than-significant effects to aesthetics and biological resources, including the California red-legged frog, San Francisco garter snake, steelhead, Coho salmon, and Ornduff's meadowfoam. The project would have a less-than-significant impact on energy, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, transportation, and wildfire.

_____ _____

Melanie Brent
Deputy District Director
Environmental Planning and Engineering
California Department of Transportation, District 4

Date of Approval

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Acronyms and Abbreviations

AB	Assembly Bill
ABAG	Association of Bay Area Governments
ADA	Americans with Disabilities Act
ADL	Aerially Deposited Lead
APE	Area of Potential Effects
ARB	California Air Resources Board
BAAQMD	Bay Area Air Quality Management District
Basin Plan	San Francisco Regional Water Quality Control Board's water quality control plan
BMP	best management practice
BSA	Biological Study Area
CAFÉ	Corporate Average Fuel Economy
CAL FIRE	California Department of Forestry and Fire Protection
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CAPTI	*California Action Plan for Transportation Infrastructure*
CCA	California Coastal Act of 1976
CCAG	City and County Association of Governments of San Mateo County
CCC	California Coastal Commission
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CGP	Construction General Permit
CH_4	methane
CHP	California Highway Patrol
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CRPR	California Rare Plant Rank
CSO	Cultural Studies Office
CTP	California Transportation Plan
dB	decibels
DOC	California Department of Conservation
DPS	distinct population segment

EFH	Essential Fish Habitat
EO	Executive Order
EOP	Emergency Operations Plan
ESA	environmentally sensitive area
ESU	Evolutionarily Significant Unit
FC	federal candidate
FD	Federally Delisted
FE	federal endangered
FEMA	Federal Emergency Management Agency
FESA	federal Endangered Species Act
FHWA	Federal Highway Administration
FR	Federal Register
FT	federally threatened
GHG	greenhouse gas
GO	Goal and Objective
GWP	global warming potential
H&SC	Health and Safety Code
HFC	hydrofluorocarbon
ICBO	International Conference of Building Officials
IS	Initial Study
LCFS	low carbon fuel standard
LCLUP	Local Coastal Land Use Plan
LCP	local coastal program
$MMTCO_2e$	million metric tons of carbon dioxide equivalent
MPO	Metropolitan Planning Organization
MTC	Metropolitan Transportation Commission
NAHC	Native American Heritage Commission
ND	Negative Declaration
N_2O	nitrous oxide
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OPC	Ocean Protection Council
OPR	California Governor's Office of Planning and Research
OCRS	Caltrans Office of Cultural Resources
PAED	Project Approval and Environmental Document
PM	post mile
ppt	parts per thousand
PQS	Professionally Qualified Staff
PRC	Public Resources Code
project	State Route 1 Multi-Asset Roadway Rehabilitation Project

PS and E	Plans, Specifications, and Estimates
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SamTrans	San Mateo County Transit District
SB	Senate Bill
SC	state candidate
SCS	Sustainable Communities Strategy
SD	State Delisted
SE	state endangered
SMLCP	San Mateo Local Coastal Program
SR	State Route
SSC	= state species of special concern
ST	state threatened
SWPPP	stormwater pollution prevention plan
TAC	Transportation Analysis Under CEQA
TMP	traffic management plan
TOS	traffic operations system
USC	United States Code
U.S. DOT	United States Department of Transportation
U.S. EPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VMT	vehicle miles traveled
WPCP	water pollution control plan

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Chapter 1 Proposed Project

1.1 California Environmental Quality Act Lead Agency Status

The State Route (SR) 1 Multi-Asset Roadway Rehabilitation Project (project) is subject to state environmental review requirements. Project documentation has been prepared in compliance with the California Environmental Quality Act (CEQA). The California Department of Transportation (Caltrans) is the lead agency under CEQA and sponsor for the project, and has prepared this draft Initial Study and proposed Negative Declaration for the project.

1.2 Introduction

Caltrans is proposing the project to rehabilitate existing pavement, improve existing traffic facilities, install Complete Streets elements ("Complete Streets" is a Caltrans policy directive intended to provide safe mobility for all users, including bicyclists and pedestrians; see Section 1.3.2), and install traffic operations system (TOS) elements along SR 1 in San Mateo County, California. The project would include rehabilitating pavement; replacing existing drainage inlets, culverts, and dikes; replacing existing guardrails with Midwest guardrail systems; replacing existing crash cushions; upgrading curb ramps; implementing Complete Streets elements; upgrading signal poles; installing conduits; installing traffic operation system elements (intersection cameras, closed circuit television cameras, and traffic monitoring stations); and relocating and/or replacing utility cabinets.

1.3 Purpose and Need

1.3.1 Purpose

The project would preserve and extend the life of the roadway to a condition that would require minimal maintenance expenditures, improve the ride quality, upgrade drainage systems, improve roadway safety, enhance pedestrian and bicycle access, and upgrade the traffic system infrastructure.

1.3.2 Need

The pavement on SR 1 in the project area was evaluated in 2016 and is in poor condition overall (Caltrans 2016). Caltrans uses the International Roughness Index to evaluate and determine how smooth or rough a pavement surface is. The Federal Highway Administration (FHWA) International Roughness Index threshold for acceptable pavement surface is between 170 and 96, the threshold for good road surface is 95 or less, and surfaces that are greater than 170 do not meet the acceptable threshold. The stretch of project highway pavement surface ranges from 100 to 226. If left untreated, this portion of SR 1 will continue to provide poor ride quality to users and will require frequent, expensive maintenance. Portions of the highway are near the acceptable roughness threshold, but continued pavement degradation is expected over time. In addition, existing highway elements and facilities in the project area are worn out or functionally obsolete and need to be replaced. The current traffic systems (e.g., guard rails, crash cushions, and drainage) are approaching the ends of functional life and need to be upgraded.

"Complete Streets" is a Caltrans policy directive intended to provide safe mobility for all users, including bicyclists and pedestrians, and is a consideration during project development. According to Director's Policy 37, signed on December 7, 2021, it is Caltrans' organizational

priority to encourage and maximize walking, bicycling, transit, and passenger rail as a strategy to not only meet state climate, health, equity, and environmental goals but also to foster socially and economically vibrant, thriving, and resilient communities (Caltrans 2021g). Therefore, the need to consider Complete Streets elements (e.g., curb ramps, sidewalks, and cross walks) is included in the project design.

1.4 Project Description

This section describes how the project would be developed to meet its purpose and need while avoiding or minimizing adverse environmental impacts. Two alternatives have been identified: the Build Alternative and the No-Build Alternative. The No-Build Alternative would not meet the project's purpose and need. Project elements are described next, and a mapbook summarizing all project elements at their various locations is provided in Appendix A.

1.4.1 Project Location

The project area is in and north of Half Moon Bay in San Mateo County, California. The project area is on SR 1 between post mile (PM) 27.5 (SR 1 at Marine Boulevard) and PM 34.8 (SR 1 at Wavecrest Road); and SR 92 at PM 0.2 (at Main Street) (Figure 1-1).

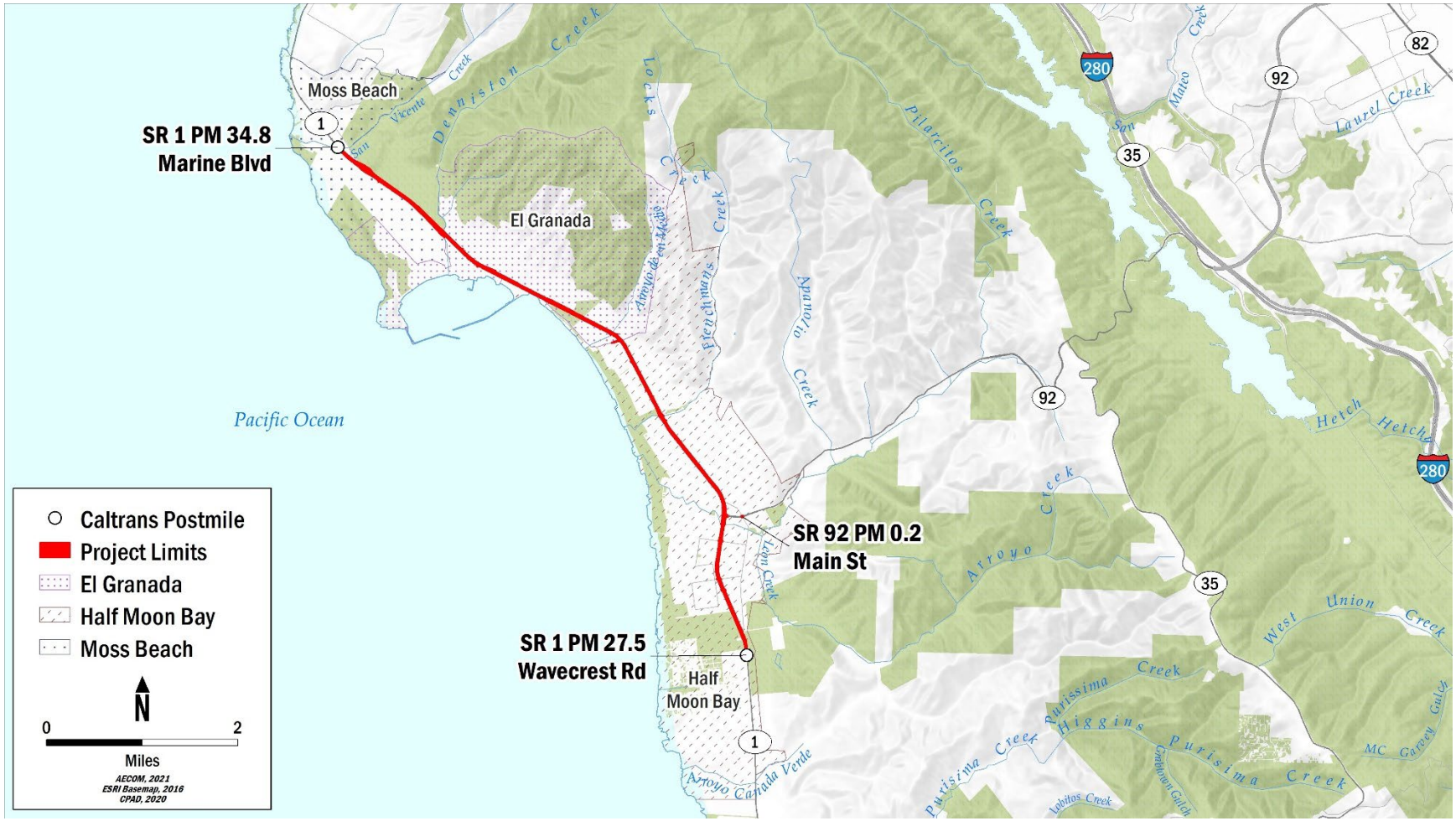

Figure 1-1 Project Vicinity

1.4.2 Roadway Rehabilitation

Caltrans is proposing a 20-year flexible rehabilitation pavement strategy to address poor pavement conditions. To rehabilitate the roadway, Caltrans would cold plane (mill the roadway surface down to design depths to restore and smooth the roadway conditions) 0.40 foot of existing asphalt concrete pavement, and then replace it with a structural section composed of 0.20 foot of gap-graded rubberized hot mix asphalt, 0.25 foot of hot mix asphalt, a geosynthetic pavement interlayer, and 0.10 foot of hot mix asphalt. The roadway profile would be raised by about 0.15 foot at project completion. Pavement rehabilitation would occur across the entire project location. This generally is shown on Figure 1-2, with detailed paving limits provided in Appendix A.

1.4.3 Guardrail Replacement

All guardrails on SR 1 in project area would be removed and replaced with standard Midwest guardrail systems (Figure 1-2). Vegetation removal may be required to access guardrails, and excavation would be necessary during construction. Wooden support posts would be installed in drilled holes to an approximate depth of 4 feet below ground surface, and deeper holes may be recommended to address traffic safety standards at specific locations.

1.4.4 Crash Cushions Replacement

Nonstandard or damaged crash cushions in the project area would be replaced at the same locations with new crash cushions, meeting current Caltrans standards for design and safety.

1.4.5 Signal Pole Upgrade

All nonstandard poles in the project area would be replaced. The size of the poles would be determined during the project's final design phase. Excavation would be required during replacement.

1.4.6 Conduits, and Traffic Operation System Elements Installation

The proposed TOS elements are needed because SR 1, through the project area, lacks traffic monitoring systems that can be used to collect data on traffic flow and volumes. These data can be used to inform future planning decisions and projects in San Mateo County. Overall, Caltrans anticipates that inclusion of TOS elements into this project would improve traffic congestion along the corridor by helping to identify future transportation needs and deficiencies.

Caltrans proposes to upgrade and install new communication devices, such as closed-circuit television cameras, fixed intersection cameras, and traffic monitoring stations. Figure 1-3 through Figure 1-5 show the proposed locations for these TOS elements. New conduit installation to support these elements would require trenching during installation. Excavation limits would be determined by conduit size and location.

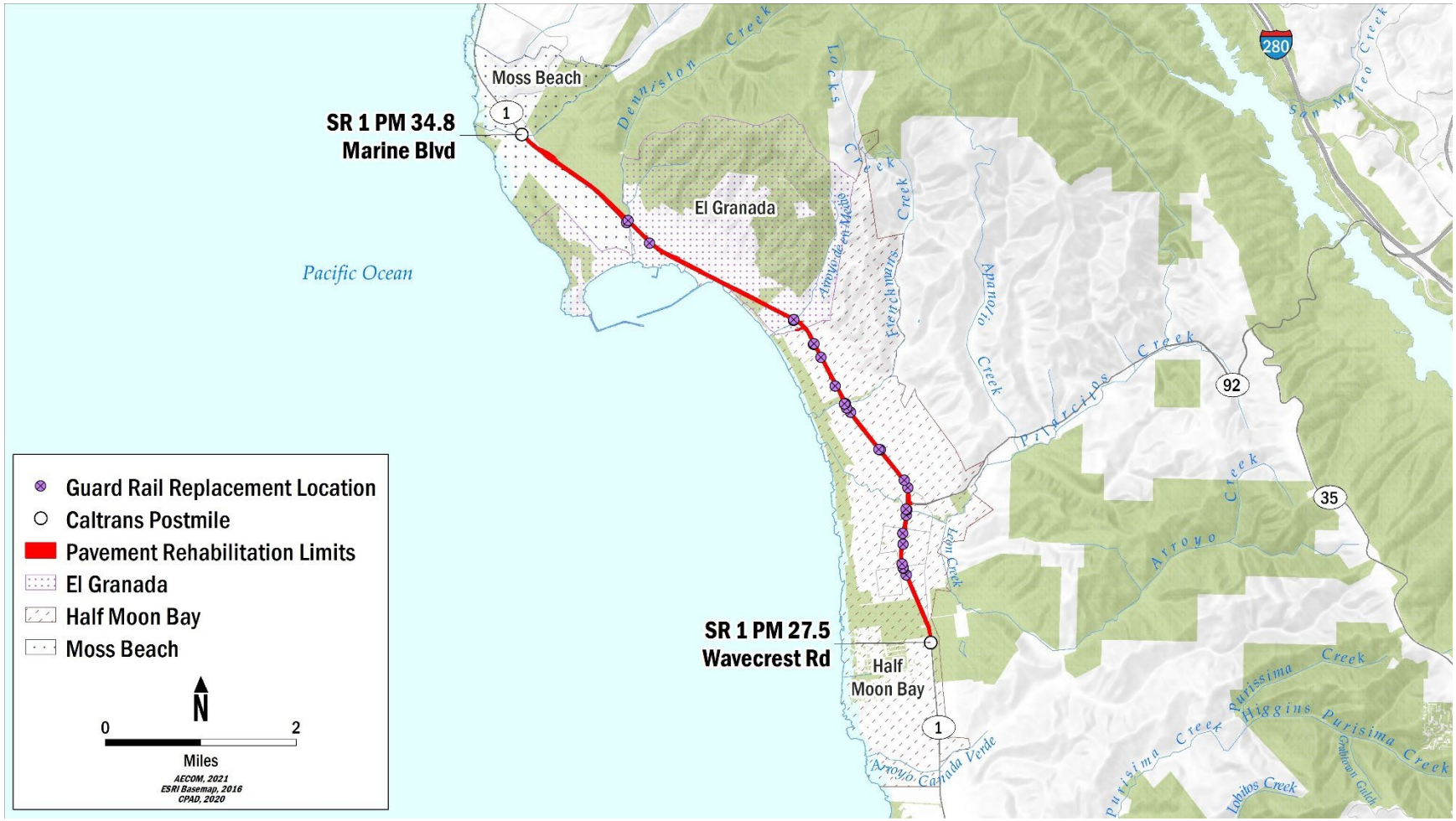

Figure 1-2 Roadway Rehabilitation and Guard Rail Replacement Locations

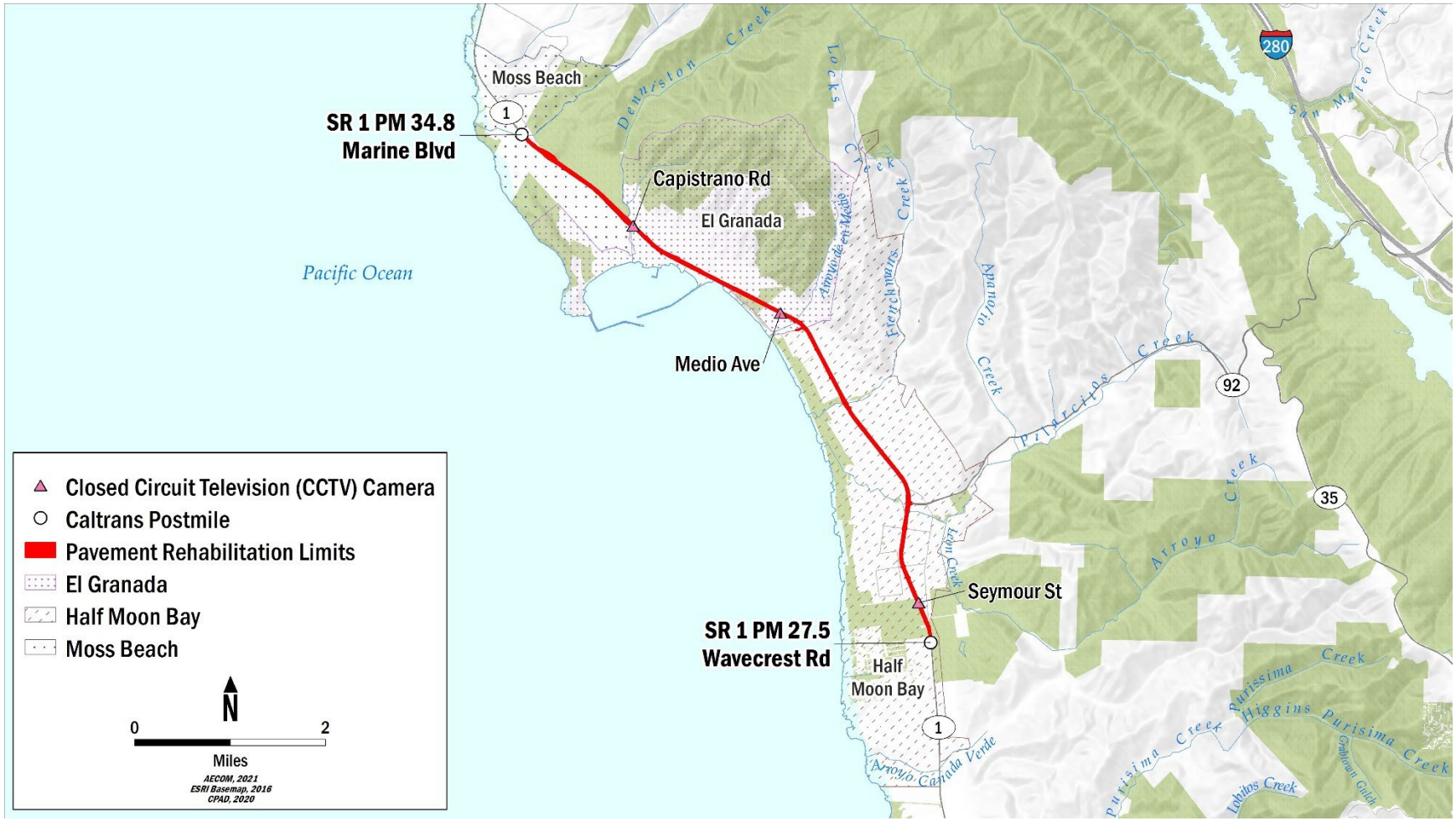

Figure 1-3 Closed Caption Television Camera Locations

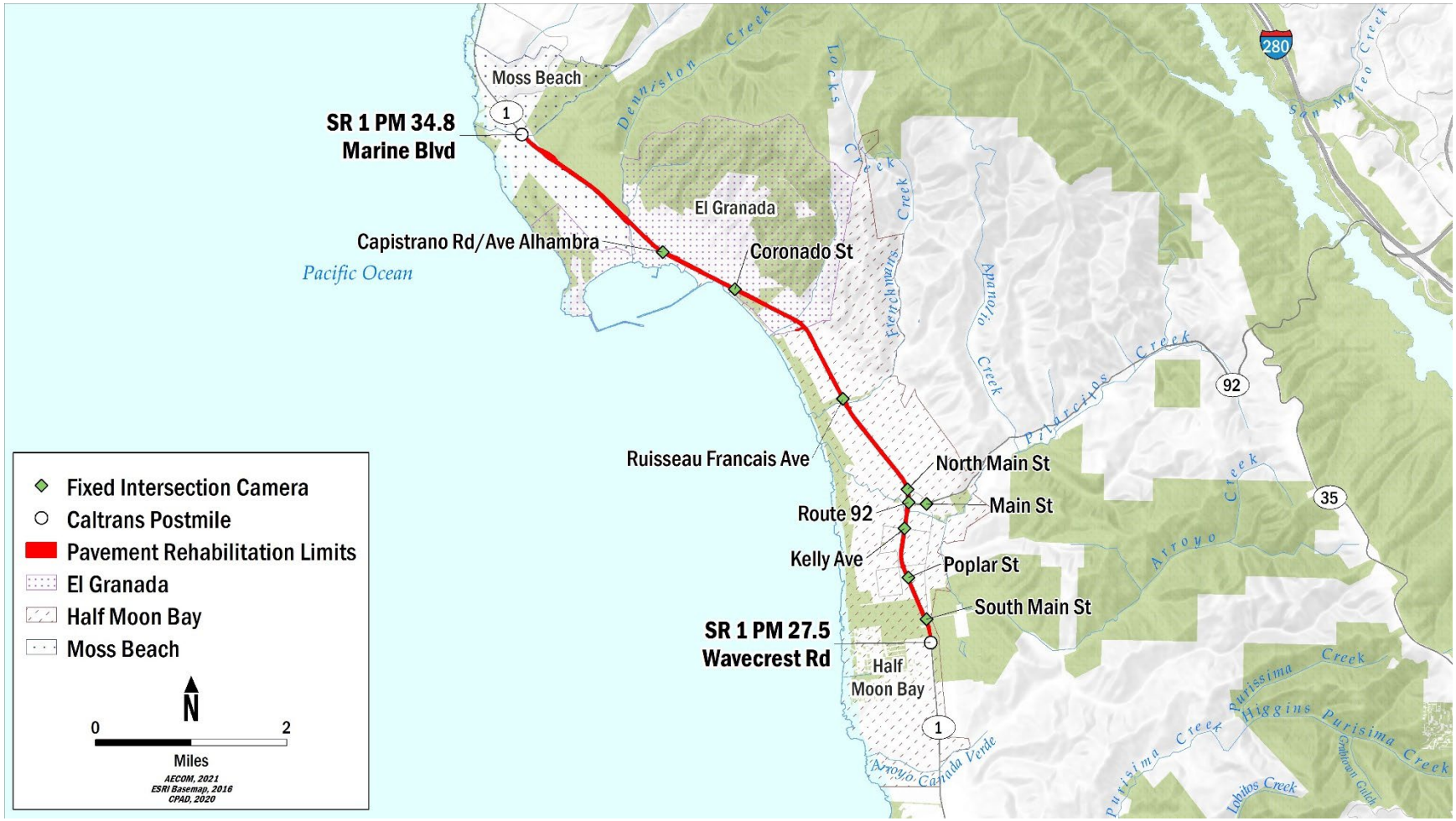

Figure 1-4 Fixed Intersection Camera Locations

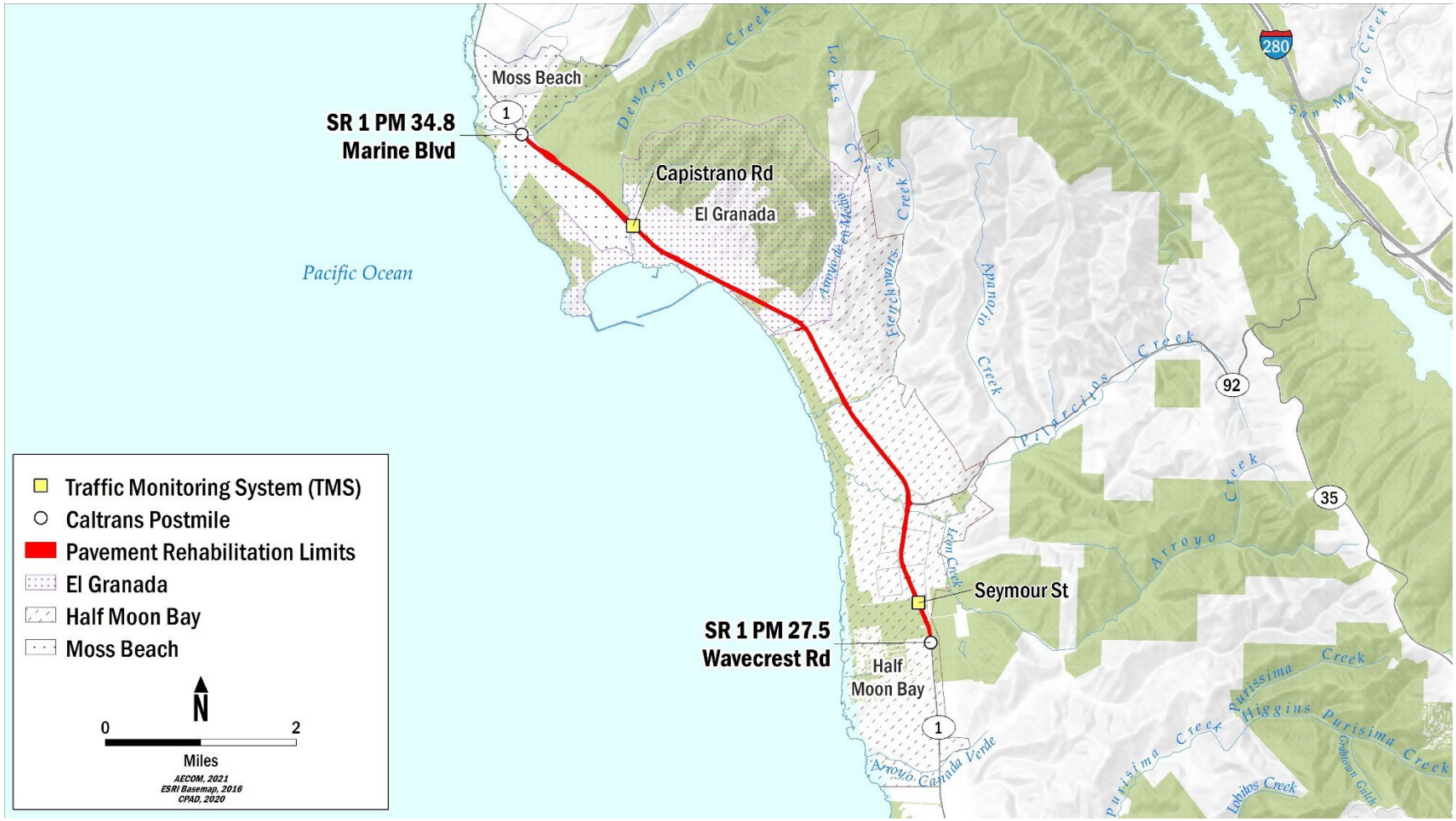

Figure 1-5 Traffic Management System Locations

1.4.7 Drainage Inlet, Culvert, and Dike Replacement

Caltrans' hydraulic engineers have conducted a preliminary review of existing drainage elements and anticipate the following work:

- Replacement of 12-inch-diameter pipes with 18-inch-diameter pipes
- Replacement of a headwall and 20-foot-long pipe for a 72-inch-diameter reinforced concrete pipe at PM 31.31
- Addition or replacement of flared end sections at ends of pipes as needed
- Lining the inside of 24-inch, 36-inch, and 60-inch pipes as needed
- Cleaning and clearing buried pipe ends to maintain flow pattern
- Repairing or replacing damaged headwalls to improve flow into culverts
- Regrading certain unlined ditches to maintain original flow pattern
- Cleaning existing drainage facilities

Excavation would be required during culvert replacement work. Typical culvert replacement work would require an excavation width that would be 2 feet wider than the culvert (1 foot on each side); the excavation depth would be same as the depth of the existing culvert; and the excavation length would be about 2 feet longer than the existing culvert. Where culvert headwall installations are required, it would increase the length of excavation by a few feet, depending on final headwall design. Caltrans is completing survey work to refine its understanding of existing drainage elements. Figure 1-6 summarizes general locations, and details of the drainage improvements are provided in Appendix A.

1.4.8 Curb Ramp Upgrade

All nonstandard curb ramps in the project area would be replaced with curb ramps that meet current Caltrans standards and would be compliant with Americans with Disabilities Act (ADA) requirements. The type and design of curb ramps would be determined based on location-specific conditions during the project's final design phase. Excavation for curb ramps would be necessary during construction.

1.4.9 Complete Streets

Sidewalks, curb ramps, and markings would be constructed throughout the project area to provide access for pedestrians and cyclists. Locations where Complete Streets elements are proposed are shown on Figure 1-7, and details are provided in Appendix A. The following street elements would be included as part of the project:

- Class II bike lanes with striped buffers would be created on SR 1 in the project area.
- Pedestrian facilities would be installed along the western side of SR 1, from Kelly Avenue to San Mateo Road (SR 92). Caltrans would investigate the possibility of a Class I facility on the west side from Kelly Avenue up to the SR 1 Pilarcitos Creek Bridge during the final design phase. A Class I facility would complete a continuous connection to existing facilities. If a Class I facility is not feasible, a sidewalk would be constructed across this portion instead.
- Intersection improvements would occur, as follows:
    - In general, curve radii would be minimized, and curb extensions would be provided where curb ramp work is proposed to meet ADA requirements.

  - Crosswalks would be striped where the Class I path crosses Seymour Street, Grove Street, Filbert Street, Belleville Boulevard, Grand Boulevard, Kehoe Avenue, Frontage Road, Venice Boulevard, Frenchman's Creek Road, Young Avenue, and Alto Avenue. Caltrans would consider reducing corner radius, and curb ramps and/or path entrances would be squared up at these locations as feasible.

  - A fourth crosswalk would be installed across SR 1 at the Kelly Avenue intersection's northern leg. Caltrans would consider changes to the right-turn slip lanes that exit from and enter northbound SR 1, if feasible, during the final design phase of the project.

  - The new sidewalk would be squared up on the eastern side of SR 1 and the SR 1/ SR 92 intersection. Crosswalks would be installed on all four legs to connect to the sidewalk from Kelly Avenue to SR 92 and/or provide a connection from the eastern side of SR 1 to the segment of the Naomi Partridge Trail that crosses under SR 1 at the Pilarcitos Creek Bridge.

  - Caltrans would consider changes to the slip lane at the SR 1/SR 92 intersection to accommodate pedestrian and bicycle crossing, or rectangular rapid flashing beacon and high-visibility crosswalks during the final project design phase if they are feasible.

  - A third crosswalk would be installed at the southern leg of the SR 1/Coronado Street intersection, to minimize crossings to the nearby school. The sidewalk on the western side of SR 1 would be connected to the southwestern corner, to connect with the new crosswalk, and/or a direct connection would be made to the nearby Class I path from the new south leg crosswalk.

  - New crosswalks would be squared up with and installed on all four legs of the SR 1/Capistrano Road intersection.

  - Caltrans would incorporate flush and raised median treatments in its final design where possible.

- If the culvert is replaced at Arroyo de en Medio, the design would bring the shoulders up to current design standards.

Transit stops would be paved, and new sidewalks would be connected along SR 1.

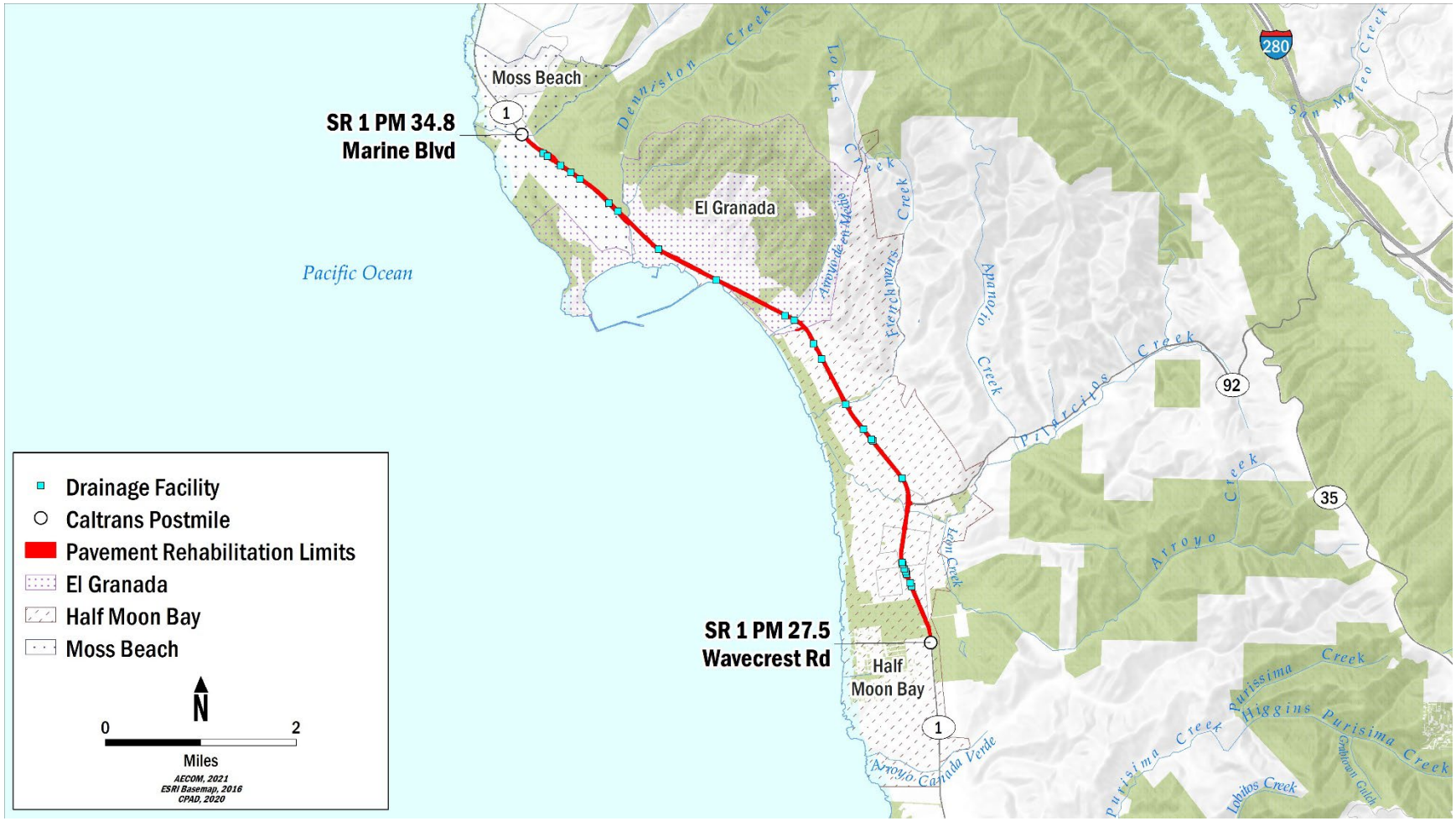

Figure 1-6 Drainage System Improvement Locations

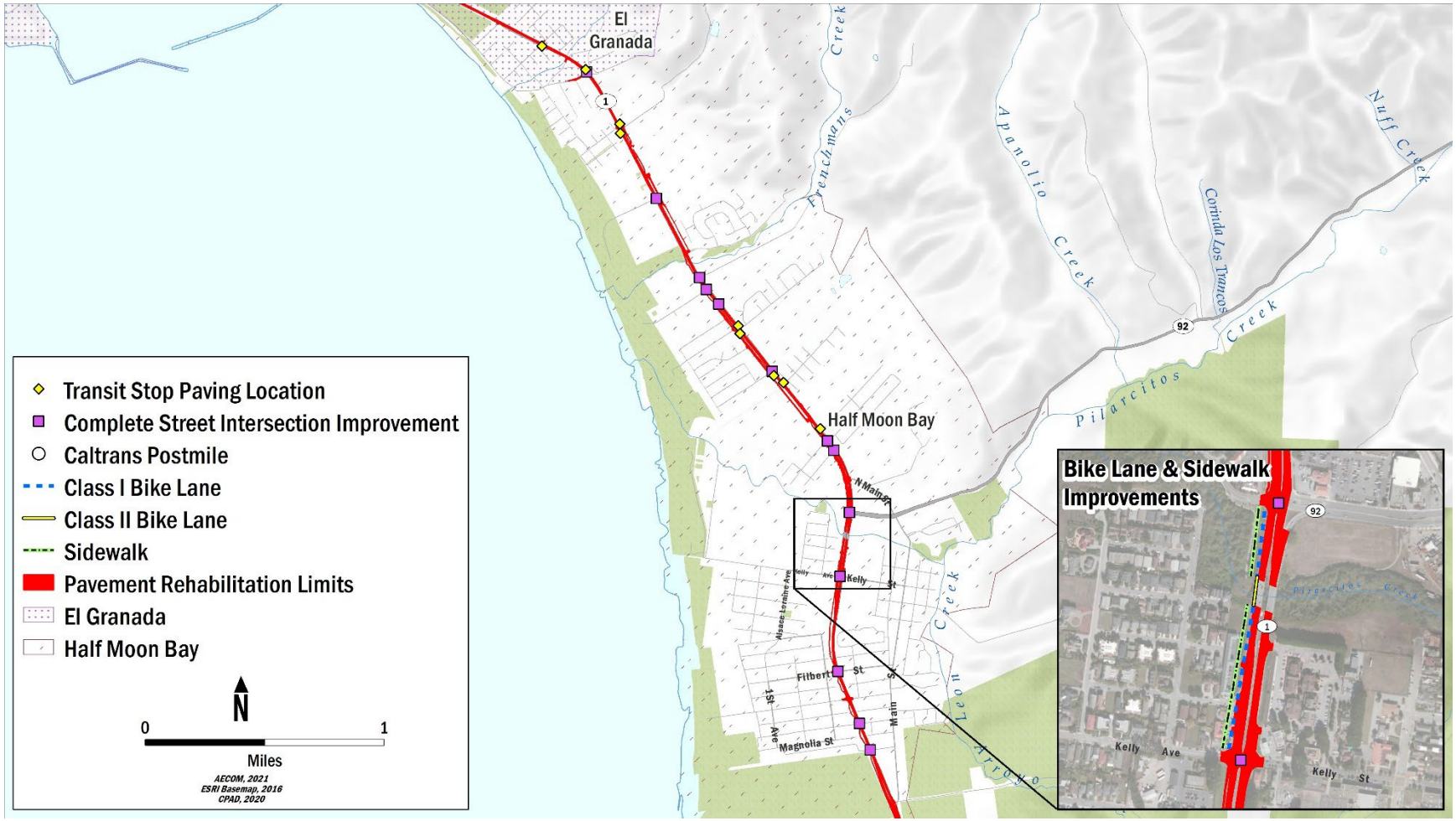

Figure 1-7 Bicycle, Pedestrian, and Complete Streets Improvement Locations

1.4.9.1 Coordination with Local Transportation Plans, and Pedestrian Crossings on SR 1 at Surfer's Beach

Coordination with San Mateo County would occur to complete the medium to long-term improvements that are proposed in the Caltrans-funded SR 1 Safety and Mobility Improvement Studies (http://planning.smcgov.org/highway-1-safety-and-mobility-study) and the County of San Mateo's Connect the Coastside, San Mateo County Midcoast Comprehensive Transportation Management Plan, Final Draft October 2021 (hereafter referred to as Connect the Coastside Plan) available online at, https://planning.smcgov.org/connect-coastside (San Mateo County 2021). Caltrans will continue to coordinate with the County of San Mateo and local stakeholders on pedestrian crossings on SR 1 at Surfer's Beach in the community of El Granada as recommended in the Connect the Coastside Plan (see Connect the Coastside Plan, Map 14: Recommended Infrastructure Improvements El Granada, Page 109; https://planning.smcgov.org/sites/planning.smcgov.org/files/Connect%20the%20Coastside%20Final%20Draft_Oct%202021.pdf [San Mateo County 2021]).

1.4.10 Utility Relocation

Existing utilities may need to be relocated during construction. Specific utilities that would need relocation would be determined during the project's final design phase. Some utilities may require vegetation clearance and excavation during construction.

1.4.11 Construction Staging

Caltrans would locate staging for construction within its right-of-way, outside environmentally sensitive areas (ESAs). At all staging locations, appropriate measures would be implemented to avoid and minimize impacts on environmental resources to the greatest extent feasible. Staging locations would be determined during the project's final design phase.

1.4.12 Project Schedule

The project currently is in the conceptual phase, during which Caltrans is refining its conceptual design and completing the environmental review under CEQA. Table 1-1 summarizes the major project delivery milestones and their targeted delivery dates.

Table 1-1 Proposed Project Schedule

Project Milestone	Milestone Description	Target Date
Draft Environmental Document Completion	Draft Environmental Document to be circulated for public review and comment	July 2022
Project Approval and Environmental Document Completion	Final Project Approval and Environmental Document to be filed with the State Clearinghouse	October 2022
Ready to List Date	Final design plans, specifications, bid estimates, and environmental permitting to be completed	April 2024
Contract Approval	Construction to start	October 2024
Contract Acceptance	Construction to be completed	October 2026

1.4.13 Project Funding

The project is eligible for federal-aid funding. It is funded by the State Highway Operation and Protection Program for fiscal year 2023/2024. The total project cost estimate is $45,971,000, which includes both capital costs and capital outlay support costs.

1.5 Alternatives

The Build Alternative described in Section 1.4 is the only alternative considered in this analysis that meets the project's purpose and need.

The No-Build Alternative would not rehabilitate the existing pavement. The No-Build Alternative would not meet the project purpose and need because the condition of the pavement and highway appurtenances would continue to deteriorate and would require frequent maintenance and extensive repairs. In addition, the No-Build Alternative eventually would result in greater expense and necessitate major reconstruction. The No-Build Alternative is considered here as a baseline condition to the proposed alternative.

1.6 Alternatives Considered but Eliminated from Further Discussion

A variant of the project's pavement rehabilitation strategy considered a 40-year flexible rehabilitation pavement strategy that would install a new structural section to replace the existing road layers instead of cold planing and rehabilitating the existing roadway. However, this pavement rehabilitation strategy variant would result in a substantially greater disturbed soil area because the total thickness of the existing structural layers would be less than that of those proposed at most locations. Because of the high risk of increased impacts and mitigation for a larger soil disturbance area, and a higher combined total project cost, this pavement rehabilitation strategy was eliminated from consideration.

A variant of the Build Alternative that included Variable Message Signs placed at four locations on SR 1 and at one location on SR 92 was considered in the project's conceptual design. The variable message signs were removed from the project's design and consideration in the Build Alternative. Removal of these elements was based on preliminary feedback to Caltrans from local community stakeholder groups and input from regulatory agency partners on this element.

1.7 Project Features

The project would include standard features that are part of most Caltrans projects, in accordance with standard specifications, state and federal laws, and anticipated standard environmental permit conditions; they have not been developed in response to any specific potential project environmental impact. Project features are distinguished from avoidance and minimization measures that directly relate to potential project-related impacts. Project-specific avoidance and minimization measures are discussed in Chapter 2 for each environmental resource analyzed. Table 1-2 summarizes standard features applicable to the project.

Table 1-2 Project Features

Resource	Feature	Description
Aesthetics/Visual	PF-VIS-01	**Limit Visual Impacts during Construction.** The California Department of Transportation (Caltrans) would implement the following measures to the greatest extent feasible during construction: • Tree and shrub removal will be avoided. • Trees and shrubs outside of clearing and grubbing limits will be protected from the contractor's operations, equipment, and materials storage. • All disturbed ground surfaces will be restored and treated with erosion control, including native, locally appropriate seed. • During construction operations, unsightly material and equipment in staging areas will be placed where they are less visible and/or covered where possible. • Construction activities will limit all construction lighting to within the area of work and use directional lighting, shielding, and other measures as needed to avoid light trespass in residential areas.
Air Quality	PF- AQ-01	**Control Measures for Construction Emissions of Fugitive Dust.** Dust control measures would be implemented to minimize airborne dust and soil particles generated from graded areas. For disturbed soil areas, the use of an organic tackifier to control dust emissions would be included in the construction contract. Watering guidelines would be established by the contractor and approved by the Caltrans resident engineer. Any material stockpiles would be watered, sprayed with tackifier, or covered to minimize dust production and wind erosion.
Air Quality	PF-AQ-02	**Air Pollution Control.** Caltrans Standard Specifications Section 14-9.02, Air Pollution Control, requires contractors to follow all air pollution control rules, regulations, ordinances, and statutes.
Air Quality	PF-AQ-03	**Emissions Reduction**. Caltrans Standard Specifications Section 7 1.02A and 7 1.02C, Emissions Reduction, require contractors to comply with all laws applicable to the project and to certify they are aware of and would comply with all California Air Resources Board (ARB) emission reduction regulations.

Resource	Feature	Description
Biological	PF-BIO-01	**Worker Environmental Awareness Training.** Construction personnel will attend a mandatory environmental education program delivered by the United States Fish and Wildlife Service (USFWS)-Approved Biological Monitor prior to taking part in site construction, including fence installation and other ground-disturbing and/or vegetation clearing activities. The program will focus on the conservation measures that are relevant to an employee's personal responsibility and will include an explanation of how to best avoid take of listed species. At a minimum, the training will include a description of the listed species that may occur on site; how they might be encountered in the project construction zone; their status and protection; and the relevant Conservation Measures and Terms and Conditions of the Biological Opinion. A fact sheet conveying this information will be prepared and distributed to all construction and project personnel. Distributed materials will include cards with distinctive photographs of the species, compliance reminders, and relevant contact information. Documentation of the training, including sign-in sheets, will be kept on file and made available to the USFWS on request.
Biological	PF-BIO-02	**Environmentally Sensitive Area (ESA) Fencing.** Before the start of construction, ESAs (defined as areas containing sensitive habitats adjacent to or in construction work areas for which physical disturbance is not allowed) will be clearly delineated using temporary high-visibility fencing or temporary reinforced silt fences with high-visibility fabric on top (Type 1). Construction work areas will include the active construction site and all areas providing support for the project, including areas used for vehicle parking; equipment and material storage and staging; and access roads. The fencing will remain in place throughout the duration of construction activities, be inspected regularly, and be fully maintained at all times. The final project plans will show all locations where the fencing will be installed and will provide installation specifications. The bid solicitation package special provisions will clearly describe acceptable fencing material and prohibited construction-related activities, including vehicle operation; material and equipment storage; access roads; and other surface-disturbing activities in ESAs.
Biological	PF-BIO-03	**Inclement Weather Restriction**. No work will occur during or within 24 hours following a rain event exceeding 0.2 inch, as forecast by the National Oceanic and Atmospheric Administration National Weather Service for Half Moon Bay, California (C3295) base station. USFWS/ California Department of Fish and Wildlife (CDFW) approval to continue work during or within 24 hours of a rain event will be considered on a case-by-case basis.

Resource	Feature	Description
Biological	PF-BIO-04	**Light Restrictions**. Construction personnel will turn portable tower lights on no more than 30 minutes before the beginning of civil twilight, and off no more than 30 minutes after the end of civil sunrise. Portable tower lights will have directional shields attached to them, and personnel will only direct lights downward and toward active construction and staging areas. Lighting per portable tower light will not exceed 2,000 lumens. To the extent practicable, personnel will only use enough coverage to light the work areas.
Biological	PF-BIO-05	**Staging**. Staging and parking areas will be restricted to designated areas, as specified by the project biologist in coordination with the project engineer.
Biological	PF-BIO-06	**Soil Storage.** Imported soil or native topsoil may be stored in a designated location, as specified by the project biologist in coordination with the project engineer, until project completion.
Biological	PF-BIO-07	**Vegetation Removal.** Vegetation removal will be limited to the designated work areas needed for access and workspace. Where possible, vegetation removal in temporary work areas will be cut above soil level to promote revegetative growth of established plants following construction.
Biological	PF-BIO-08	**Replant, Reseed, and Restore Disturbed Areas.** Caltrans will restore temporarily disturbed areas to their preconstruction contours and functions to the maximum extent practicable. Exposed slopes and bare ground will be reseeded with native, local grasses and shrubs to stabilize and prevent erosion. Where disturbance includes the removal of trees and woody shrubs, coordination with the appropriate permitting agency will be warranted, and planting may be required. A local hydroseed mix will be proposed in the plans, specifications, and estimates phase.

Resource	Feature	Description
Biological	PF-BIO-09	**Migratory Bird Treaty Act.** To minimize and avoid take of migratory birds, their nests, and their young, Caltrans will conduct vegetation and tree trimming from October 1 through January 31—before project construction—when possible. This work will be limited to vegetation and trees that are within the project footprint. No grubbing or other ground-disturbing work will occur at this time. Upon completion of vegetation and tree trimming, Caltrans will install stormwater and erosion control best management practices (BMPs). During the nesting season (February 15 through September 30), a qualified biologist with appropriate construction and species experience will conduct nest and bird surveys and other wildlife surveys prior to tree removal and applicable pruning. All work will be conducted under a Regional Water Quality Control Board (RWQCB)-approved Water Pollution Control Plan or Storm Water Pollution Protection Plan. During the nesting season, pre-construction surveys for nesting birds will be conducted by a qualified biologist no more than 72 hours prior to the start of construction activities. If work is to occur within 300 feet of active raptor nests or 50 feet of active other migratory/nongame bird nests, a nondisturbance buffer will be established at a distance sufficient to minimize disturbance, based on the nest location, topography, cover, the species' sensitivity to disturbance, and the intensity/type of potential disturbance. All clearing and grubbing of woody vegetation will be performed by hand or using light construction equipment, such as backhoes and excavators.
Biological	PF-BIO-10	**Invasive Species Management.** To reduce the spread of invasive nonnative plant species and minimize the potential decrease of palatable vegetation for wildlife species, Caltrans will comply with Executive Order 13112. The purpose of this order is to prevent the introduction of invasive species and provide for their control to minimize economic, ecological, and human health impacts. In the event that high- or medium-priority noxious weeds, as defined by the California Department of Food and Agriculture or the California Invasive Plant Council, are disturbed or removed during construction-related activities, the contractor will contain the plant material associated with these noxious weeds and will dispose of it in a manner that will not promote the spread of the species. The contractor will be responsible for obtaining all permits, licenses, and environmental clearances for properly disposing materials. Areas subject to noxious weed removal or disturbance will be replanted with fast-growing native grasses or a native erosion control seed mixture. If seeding is not possible, the area will be covered to the extent practicable with heavy black plastic solarization material until completion of construction. All earthmoving equipment, as well as seeding equipment to be used during project construction, would be thoroughly cleaned before arriving on the project site.

Resource	Feature	Description
Biological	PF-BIO-11	**Implementation of Water Quality/Erosion Control BMPs.** Erosion control BMPs will be developed and implemented to minimize any wind- or water-related erosion, in compliance with the requirements of the RWQCB. Protective measures will include, at a minimum, the following: a. No discharge of pollutants from vehicle and equipment cleaning will be allowed into any storm drains or watercourses. b. Vehicle and equipment fueling and maintenance operations will be kept at least 50 feet away from watercourses, except at established commercial gas stations or established vehicle maintenance facilities. c. Concrete wastes will be collected in washouts, and water from curing operations will be collected and disposed. Neither will be allowed into watercourses. d. Spill containment kits will be maintained on site at all times during construction operations and/ or staging or fueling of equipment. e. Dust control measures will include use of water trucks and dust palliatives to control dust in excavation-and-fill areas; covering temporary access road entrances and exits with rock (rocking); and covering temporary stockpiles when weather conditions require. f. Coir rolls or straw wattles that do not contain plastic or synthetic monofilament netting will be installed along or at the base of slopes during construction to capture sediment. g. Graded areas will be protected from erosion using a combination of silt fences and fiber rolls along toes of slopes or along edges of designated staging areas; erosion control netting (e.g., jute or coir) will be used as appropriate on sloped areas. Erosion control materials that use plastic or synthetic monofilament netting will not be used in the project footprint. This will include products that use photodegradable or biodegradable synthetic netting, which can take several months to decompose. Acceptable materials will include natural fibers, such as jute, coconut, or twine.

Resource	Feature	Description
Biological	PF-BIO-12	**Construction Site BMPs.** The following site restrictions will be implemented to avoid or minimize impacts on special-status species and their habitats: a. Routes and boundaries of roadwork will be clearly marked before the start of construction or grading. b. All food and food-related trash items will be enclosed in sealed trash containers and will be properly disposed off site. c. No pets belonging to project personnel will be allowed anywhere in the project area during construction. d. No firearms carried by project personnel will be allowed except for those carried by authorized security personnel or local, state, or federal law enforcement officials. e. A spill response plan will be prepared. Hazardous materials (e.g., fuels, oils, or solvents) will be stored in sealable containers in a designated location at least 50 feet from any aquatic features. f. Project-related vehicles will be required to observe a 10-mile-per-hour speed limit in all staging or storage areas.
Biological	PF-BIO-13	**Fish Passage Assessment.** In accordance with Caltrans policy and Senate Bill 857, Caltrans will conduct first-pass fish passage surveys of all unassessed stream crossings in the Project Footprint. The survey results will be provided to the Passage Assessment Database maintained by CDFW.
Cultural Resources	PF-CUL-01	**Discovery of Archaeological Materials.** If archaeological materials are discovered during construction, all earth-moving activity in and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and substance of the find.
Cultural Resources	PF-CUL-02	**Discovery of Human Remains**. If remains are discovered during excavation, all work within 60 feet of the discovery will halt, and Caltrans' Office of Cultural Resources (OCRS) will be called. OCRS staff will assess the remains and, if determined to be human, will contact the County Coroner in accordance with Public Resources Code (PRC) Sections 5097.98, 5097.99, and Section 7050.5 of the California Health and Safety Code. If the Coroner determines the remains to be Native American, the Coroner will contact the Native American Heritage Commission, which will assign a Most Likely Descendant. Caltrans will consult with the Most Likely Descendent on treatment and reburial of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

Resource	Feature	Description
Greenhouse Gas (GHG)	PF-GHG-01	**Emissions Reduction.** Caltrans Standard Specifications Sections 7-1.02A and 7-1.02C, Emissions Reduction, require contractors to comply with all laws applicable to the project and to certify they are aware of and will comply with all ARB emission reduction regulations.
Hazardous Materials	PF-HAZ-1	**Unanticipated Hazardous Waste.** Caltrans standards will be followed for the proper handling and disposal of any unanticipated hazardous waste discovered during construction.
Hazards and Hazardous Materials	PF-HAZ-02	**Aerially Deposited Lead (ADL).** The project will implement BMPs according to Caltrans specifications special provision 12-11.09, “Minimal Disturbance of Regulated Material Containing ADL.”
Hydrology and Water Quality	PF-WQ-1	**Water Quality BMPs.** The potential for adverse effects to water quality will be avoided by implementing temporary and permanent BMPs outlined in Section 7-1.01 G of the Caltrans Standard Specifications. Caltrans erosion control BMPs will be used to minimize any wind or water related erosion. The State Water Resources Control Board has issued a National Pollutant Discharge Elimination System Statewide Storm Water Permit to Caltrans to regulate stormwater and nonstormwater discharges from Caltrans facilities. A Water Pollution Control Plan will be developed for the project because one is required for all projects that have less than 1 acre of soil disturbance.

1.8 Necessary Permits and Approvals

Table 1-3 summarizes the permits, licenses, agreements, and certifications that would be necessary for project construction.

Table 1-3 Necessary Project Permits and Approvals

Agency	Permit, License, Agreement, or Certification	Status
California Department of Fish and Wildlife	California Fish and Game Code Section 1602 Lake or Streambed Alteration Agreement	Consultation ongoing.
City of Half Moon Bay Local Coastal Plan	Coastal Development Permit	Application submittal anticipated during the detailed design phase.
San Mateo County Local Coastal Plan	Coastal Development Permit	Application submittal anticipated during detailed design phase.
California Coastal Commission	Federal Coastal Consistency Certification or Waiver	Review is anticipated to be concurrent with Coastal Development Permit requests through Local Agencies
San Francisco Regional Water Quality Control Board	Federal Clean Water Act Section 401 Water Quality Certification	Request to be prepared during detailed design phase.
United States Army Corps of Engineers	Federal Clean Water Act Section 404, and Rivers and Harbors Act Section 10 Permit	Nationwide Permit No. 14 or Regional General Permit No. 33 to be requested during detailed design phase.
United States Fish and Wildlife Service	Federal Endangered Species Act Section 7 consultation for threatened and endangered species	Consultation ongoing.

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Chapter 2 California Environmental Quality Act Evaluation

2.1 Determining Significance under CEQA

The project is subject to state environmental review requirements. Project documentation has been prepared in compliance with CEQA. Caltrans is the lead agency under CEQA. This chapter evaluates potential environmental impacts of the project, as described in Chapter 1, related to the CEQA checklist to comply with the state CEQA guidelines (Title 14, California Code of Regulations, Division 6, Chapter 3, Section 15091).

2.2 CEQA Environmental Checklist

This checklist identifies physical, biological, social, and economic factors that may be affected by the project. In many cases, background studies performed in connection with a project will indicate that no impacts would occur on a particular resource. The words “significant” and “significance” used throughout the following sections are related to CEQA, not to the National Environmental Policy Act (NEPA), impacts. The questions in the checklist are intended to encourage a 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 most Caltrans projects, such as best management practices (BMPs) and measures included in the Standard Plans and Specifications or as Standard Special Provisions—are an integral part of the project and have been considered before any significance determinations documented herein (see Section 1.7 for a detailed discussion of these features). This checklist incorporates by reference the information that is presented in Chapter 1 .

2.2.1 Aesthetics

Except as provided in Section 21099 of the Public Resources Code (PRC), would the project:

Question	CEQA Determination
a) Have a substantial adverse effect on a scenic vista?	No Impact
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway?	No Impact
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	Less than Significant Impact
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	Less than Significant Impact

2.2.1.1 CEQA Significance Determinations for Aesthetics

Responses to the following questions are based on Caltrans' draft Visual Impact Assessment for the project (Caltrans 2022b).

a) Would the project have a substantial adverse effect on a scenic vista?

A scenic vista is a viewpoint of natural scenery, historic, and/or architectural features possessing visual qualities of value to the community. A vista typically refers to expansive views, usually from an elevated and open area. Certain stretches of SR 1 have scenic vistas, and those scenic qualities have been considered during project development to avoid substantial adverse effects on scenic vistas. The project would not affect scenic vistas along SR 1 or SR 92. There would be no impact, and no additional mitigation is required.

b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway?

SR 1 within the project limits is not a designated State Scenic Highway. Consequently, the project would not substantially degrade scenic resources within a State Scenic Highway. SR 1 is eligible for scenic designation, and avoidance and minimization measures have been taken to minimize project-related visual impacts to the project corridor.

c) Would the project, 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?

Caltrans has considered potential visual impacts in its design approach and would implement standard project features to avoid and minimize visual and aesthetic impacts from the overall project, as summarized in Section 1.7 (Table 1-2).

Most of the project along the 7.3-mile corridor would result in visual change, including roadway rehabilitation, Complete Streets improvements, drainage improvements, and upgrades to traffic operations and safety elements. With implementation of project features incorporated into the project design, the impact would be less than significant.

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

The project's guard rails could create glare that may cause a minor visual impact where they are replaced and installed. The impact would be less than significant. No additional mitigation is required.

Proposed Avoidance and Minimization Measure

VIS-01, Guardrail Finish. To reduce glare, Caltrans will include a matte finish on exposed metal surfaces of guard rails.

2.2.2 Agriculture and Forest Resources

In determining whether impacts on agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (DOC 1997), prepared by the California Department of Conservation (DOC) as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts on 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 (ARB).

Question	CEQA Determination
a) Would the project 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
b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?	No Impact
c) Would the project 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
d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?	No Impact
e) Would the project 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

2.2.2.1 CEQA Significance Determinations for Agriculture and Forest Resources

a), b), c), d), and e)

Caltrans has reviewed current mapping data provided by the DOC (2022) and confirmed that no Farmland of Statewide Importance is in or adjacent to the project area. The project area is not in but is adjacent to Unique Farmland and Prime Farmland at some locations. However, the project area would be limited to the existing right-of-way at these locations and would not convert adjacent lands. The project area does not contain land zoned for agricultural uses; land under the Williamson Act; or land zoned as forest land, timber land, or timberland production. No loss or conversion of forest land to non-forest land would occur, nor any other changes to the existing environment that would convert farmland to nonagricultural use or forest land to non-forest use. Therefore, no impact would occur.

2.2.3 Air Quality

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

Question	CEQA Determination
a) Would the project conflict with or obstruct implementation of the applicable air quality plan?	No Impact
b) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?	No Impact
c) Would the project expose sensitive receptors to substantial pollutant concentrations?	Less than Significant Impact
d) Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	No Impact

2.2.3.1 CEQA Significance Determinations for Air Quality

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

The project area is in the San Francisco Bay Area Air Basin and is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD), ARB, the San Mateo County General Plan (San Mateo County 1986), and the San Mateo County Local Coastal Program (LCP) (San Mateo County 2013b). San Mateo County is in a nonattainment zone for 8-hour ozone (2015) and particulate matter equal to or less than 2.5 microns in diameter (2006), according to federal 2021 standards (U.S. EPA 2021e).

The project is exempt from the federal requirement to determine project-level air quality conformity, in accordance with 40 Code of Federal Regulations (CFR) 93.126–Exempt Projects-Pavement resurfacing and/or rehabilitation. An exempt project generally is considered as having no impact on air quality with respect to the region's ability to meet air quality standards. The project would not add capacity, and therefore would not result in operational degradation of air quality. The project is anticipated to result in short-term emissions during construction, but air pollutants are expected to be minimal to negligible. Construction practices would conform to the performance standards outlined in the applicable plans and Caltrans standards specifications. The project would not conflict with or obstruct implementation of the pertinent air quality policies and goals of these agencies. No impact would occur.

b) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?

The project would not increase capacity on SR 1 or SR 92 and would not cause long-term degradation of air quality because of additional traffic, which could be cumulatively considerable. During project construction, short-term emissions would occur from the use of diesel and gasoline-powered construction equipment and vehicles. However, these short-term

emissions would not result in a cumulatively considerable net increase of criteria pollutants. No impact would occur.

c) Would the project expose sensitive receptors to substantial pollutant concentrations?

Sensitive receptors include children, the elderly, people with asthma, and other members of the population who are at a heightened risk of negative health outcomes from exposure to air pollution. Schools, childcare facilities, hospitals, nursing homes, and residential communities are locations where sensitive receptors typically occur. Although schools (Picasso Preschool, Wilkinson School, El Granada Elementary School, La Costa Adult School, and Hatch Elementary School), childcare facilities (Cottage by the Sea Childcare and Izzi at Half Moon Bay), and hospitals (Seaton Coastside and Coastside Clinic) are nearby, the project would not increase emissions of criteria pollutants or mobile source air toxics above existing conditions. Although construction activities would impact nearby sensitive receptors, generation of air emissions would be temporary and limited to the period of construction. In addition, implementation of project features PF-AQ-01, PF-AQ-02, and PF-AQ-03, listed in Table 1-2, would minimize impacts from emissions during the construction phase. Therefore, the impact would be less than significant.

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

Typical odors associated with construction equipment and repaving may be present temporarily. However, the project would not lead to long-term emissions, such as odors, that would adversely affect a substantial number of people. No impact would occur.

2.2.4 Biological Resources

Question	CEQA Determination
a) Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, or NOAA Fisheries?	Less than Significant Impact
b) Would the project 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
c) Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	Less than Significant Impact
d) Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	No Impact
e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	No Impact
f) Would the project 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

2.2.4.1 CEQA Significance Determinations for Biological Resources

Responses to the following questions are based on Caltrans' Natural Environment Study for the project, prepared in April 2022 (Caltrans 2022c). Potential wetlands, other waters of the United States, and waters of the state regulated by the United States Army Corps of Engineers and the Regional Water Quality Control Board (RWQCB); and riparian areas and Coastal Zone wetlands regulated by the California Coastal Commission (CCC) were mapped in the Biological Study Area (BSA) for the September 2021 aquatic resource jurisdictional delineation report (Caltrans 2021h).

As defined in the NES (Caltrans 2022c), the BSA consists of the project footprint (permanent or temporary impact areas, including staging and access areas), along with buffer areas (surrounding the project footprint) that construction activities may directly or indirectly impact. The buffer areas were estimated based on the potential for project activities to cause noise, water quality, or geomorphological impacts.

Vegetation was mapped and described based on field surveys at water crossings and areas subject to off-pavement disturbance. In all other parts of the BSA, vegetation was mapped using a combination of aerial imagery and street view imagery. Vegetation was mapped to the vegetation alliance level using the California Native Plant Society Manual of California Vegetation (CNPS 2021) classification system where possible. For vegetation communities

that could be consistently identified to the association level throughout the BSA, the vegetation association was also recorded in the vegetation habitat descriptions. The presence of invasive species, defined as those included on the California Invasive Plant Council (Cal-IPC 2021) inventory of invasive plants, was noted for vegetation communities on the field surveys.

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

The project would have less-than-significant impacts. The project's BSA contains potential habitat for special-status species that have moderate to high potential to occur. Appendix B contains a summary table of the potential for special-status species to occur, based on literature/database searches, biological surveys, evaluation of appropriate habitat, and the habitat and life history requirements for each species. The project footprint overlaps with areas that are designated as Essential Fish Habitat (EFH) by the National Oceanic and Atmospheric Administration (NOAA) Fisheries.

The following federally and state-listed fish and wildlife species are either known to occur in or have the potential to occur in the BSA:

Federally and State-Listed Species

- Steelhead (*Oncorhynchus mykiss irideus*), Central California Coast Distinct Population Segment (DPS), federally endangered, and stated endangered
- Coho salmon (*Oncorhynchus kisutch*), Central California Evolutionarily Significant Unit (ESU), federally threatened
- California red-legged frog (*Rana draytonii*), federally endangered, state species of special concern
- San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), federally endangered, state endangered, and state fully protected species

Special-Status and Locally Rare Species

- Ornduff's meadowfoam (*Limnanthes douglasii* ssp. *ornduffii*), California Rare Plant Rank (CRPR) 1B.1 (plants that are rare, threatened, or endangered in California and elsewhere; seriously threatened in California)
- Protected and migratory birds

The potential impacts to the special-status wildlife and plants listed above are described in the following paragraphs.

Steelhead

The Central California Coast DPS of steelhead is a federally threatened species (62 Federal Register [FR] 43937, August 18, 1997). Central California Coast steelhead DPS includes all naturally spawned anadromous populations below natural and manmade impassable barriers in California streams from the Russian River (inclusive) to Aptos Creek (inclusive); and the drainages of San Francisco, San Pablo, and Suisun Bays, eastward to Chipps Island at the confluence of the Sacramento and San Joaquin Rivers (71 FR 834, January 5, 2006).

Caltrans reviewed existing data and reports to assess the status and potential occurrence of steelhead in the BSA. Steelhead likely occupy Denniston and Frenchman's Creeks, are known to occupy Pilarcitos Creek, and are unlikely to occupy Deer and Arroyo de en Medio Creeks (Becker and Reining 2008). Denniston Creek, Frenchmen's Creek, and Arroyo en Medio Creek are designated as critical habitat for Central California Coast steelhead. Caltrans review of the California Natural Diversity Database (CNDDB) indicates recent records of steelhead in Frenchman's Creek. All remaining unnamed drainages in the BSA lack the necessary hydrologic characteristics necessary to support steelhead.

No culvert replacement or other instream work is anticipated at Denniston Creek and Frenchmen's Creek. Work near those two waterways would be limited to guardrail replacement, which may involve vegetation removal from the road shoulder or the trimming of tree branches that overhang the road shoulder. This limited vegetation removal is not expected to result in any decrease in shading or riparian habitat impacts to areas potentially supporting steelhead. Culvert replacement work would occur at Arroyo de en Medio Creek and at unnamed drainages. However, those waterways are not expected to support steelhead, and they all feed directly into the Pacific Ocean and thus are not tributaries to waterways that may support steelhead migration.

Proposed Avoidance and Minimization Measure

Caltrans proposes the following measure to avoid and minimize impacts on steelhead:

> **BIO-01: Riparian Vegetation Protection**
>
> All riparian habitat in the project area will be delineated as an ESA, and no construction activities will occur outside of the immediate work area in riparian habitat ESAs. At the roadway crossings of Denniston, Frenchman's, and Pilarcitos Creeks, Caltrans will limit riparian vegetation removal to the immediate work area. Trees or shrub trimming at those locations will be limited to removing only branches that overhang the roadway.

Coho Salmon

The Central California Coast ESU was listed as federally endangered in 1996 (61 FR 56138) and is a state endangered species under the California Endangered Species Act (CESA). This ESU includes all naturally spawned Coho salmon, encompassing reaches of all rivers (including estuarine areas and tributaries) between Punta Gorda (Mendocino County) and San Lorenzo River (Santa Cruz County)

No evidence could be found, historical or otherwise, that any of the drainages in the BSA may support Coho salmon (Spence et al. 2012; NMFS 2012). Furthermore, current habitat conditions in the waterways in the BSA are generally incompatible with the species because they lack summer cold water flows, deep pools with abundant cover, and a lagoon suitable for a successful transition to saltwater, all of which the species requires.

California Red-Legged Frog

The California red-legged frog was federally listed as a threatened species under the federal Endangered Species Act (FESA) on May 23, 1996, (61 FR 25813; USFWS 1996). On April 16, 2010, the United States Fish and Wildlife Service (USFWS) designated revised critical habitat for the California red-legged frog under FESA. Critical habitat for the California red-legged does not occur in the project area, but does occur within 2 miles of the project. California red-legged frog is distributed throughout 26 counties in California but is most abundant in the San Francisco Bay area. California populations have become isolated in the Sierra Nevada, North

Coast, and the northern and southern Transverse and Peninsular ranges (Jennings and Hayes 1994; Stebbins 2003).

Riverine habitat exists in the project BSA, and California red-legged frogs can move considerable distances over land. Multiple California red-legged frog occurrences are documented within 2 miles of the project footprint. The project's disturbance from construction activities is generally within the existing baseline disturbance of SR 1 in the project area (e.g., local dense street traffic, visitor activity in adjacent parking lots, gas stations, shopping centers, residential development, bus stops, and ongoing roadway maintenance activities). Agricultural and undeveloped lands that run parallel to SR 1 may provide limited dispersal routes that are free of major barriers to frogs. Roadside drainage ditches along SR 1 may further increase connectivity between other open areas and the BSA. The ditches and associated culverts may provide shelter as well as aquatic habitat during portions of the year. The project footprint is, however, subject to regular mowing; its value to frogs is likely restricted to frogs dispersing through the area, mostly during inclement weather. Additionally, SR 1 acts as a potential barrier to California red-legged frog. However, there is limited ecological incentive for California red-legged frog to be seeking habitats west of SR 1. Developed urban land throughout the BSA provides additional barriers to dispersal and habitat connectivity.

Much of the project footprint overlaps areas that are paved or otherwise developed and do not support California red-legged frog. Small areas of potential habitat for California red-legged frog would be permanently and temporarily impacted due to ground disturbance and vegetation removal. The project's direct permanent and temporary impacts on potential habitat are estimated in acreage. Permanent impacts are those that would remove habitat for more than 1 year and temporary impacts are those that would remove habitat for less than 1 year. Impacts to upland/dispersal habitat are based on the maximum estimated ground disturbance throughout the project footprint. Table 2-1 summarizes potential permanent and temporary impacts on California red-legged frog habitat in the BSA.

Table 2-1 Potential Impacts to California Red-Legged Frog Potential Habitat

Habitat Type	Impact Type	Area (acres)
Aquatic breeding	Permanent	0
Aquatic breeding	Temporary	0
Aquatic nonbreeding	Permanent	0
Aquatic nonbreeding	Temporary	0.03
Upland/dispersal	Permanent	0.01
Upland/dispersal	Temporary	1.09

The project has the potential to adversely affect individual frogs that occur at the project site during construction, through direct interaction with construction activities that may result in injury, mortality, or harassment. The project is anticipated to cause indirect effects to California red-legged frog through ground disturbance from vegetation removal; equipment and vehicle staging; trampling of vegetation; construction-related dust; increases in noise and light; and impacts to water quality during construction.

Proposed Avoidance and Minimization Measure

Caltrans proposes the following measures to avoid and minimize impacts to California red-legged frog. These measures would also serve to protect San Francisco Garter Snake because these species occupy the same habitat in the BSA.

BIO-02: Seasonal Avoidance

Construction activities off paved surfaces in areas of potential California red-legged frog habitat (ESAs) will be performed between June 15 and October 15 to minimize impacts on this species. Designated staging areas may be used outside of this work window once cleared by a USFWS-approved biologist or their designee and fenced, as appropriate.

BIO-03: Proper Use of Erosion Control Devices

To avoid entanglement or injury of California red-legged frog or San Francisco garter snake, erosion control materials that use plastic or synthetic monofilament netting will not be used.

BIO-04: Avoidance of Entrapment

To prevent inadvertent entrapment of animals during construction, all excavated, steep-walled holes or trenches more than 1 foot deep will be covered at the close of each working day with plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks at an angle no greater than 30 degrees. Before such holes or trenches are filled, they must be thoroughly inspected for trapped animals. All replacement pipes, hoses, culverts, or similar structures less than 12 inches in diameter will be closed, capped, or covered upon entry to the project site. All similar structures greater than 12 inches must be inspected before they are subsequently moved, capped, and/or buried.

BIO-05: Biological Monitor

The names and qualifications of proposed biological monitor(s) will be submitted to the USFWS for approval prior to the start of construction. The USFWS-approved biological monitor(s) will keep a copy of the USFWS biological opinion in their possession when on site. Through communication with the resident engineer, the USFWS-approved biological monitor(s) will be on site during all work that could reasonably result in take of California red-legged frog or other special-status species. The USFWS-approved biological monitor(s) will have the authority to stop work that may result in the unauthorized take of special-status species. If the USFWS-approved biological monitor exercises this authority, the USFWS will be notified by telephone and e-mail message within one working day.

BIO-06: Pre-Construction/Daily Surveys

Pre-construction surveys for special-status species will be conducted by the USFWS-approved biological monitor no more than 14 calendar days prior to any initial ground disturbance and immediately prior to ground-disturbing activities (including vegetation removal and fence installation) in the project footprint. These efforts will consist of walking surveys of the project limits and, if possible, accessible adjacent areas within at least 50 feet of the project limits. The USFWS-approved biological monitor will investigate potential cover sites when it is feasible and safe to do so. This includes

thorough investigation of mammal burrows, rocky outcrops, appropriately sized soil cracks, tree cavities, and debris. Native vertebrates found in the cover sites within the project limits will be documented and relocated to an adequate cover site in the vicinity, with the exception of fully protected species. Safety permitting, the USFWS-approved biological monitor will also survey areas of disturbed soil for signs of California red-legged frog or San Francisco garter snake within 30 minutes following initial disturbance of the given area. The need for further pre-construction surveys will be determined by the biologist based on site conditions and realized construction timelines.

BIO-07: Protocol for Species Observation

The USFWS-approved biological monitor(s) will have the authority to halt work through coordination with the resident engineer if California red-legged frog or San Francisco garter snake are observed in the project footprint. The resident engineer will keep construction activities suspended in a 50-foot radius of the California red-legged frog or San Francisco garter snake in any construction area where the biologist has determined that a potential take of the species could occur. Work will resume after observed listed individuals leave the site voluntarily, the biologist determines that no wildlife is being harassed or harmed by construction activities, or the wildlife is relocated by the biologist to a release site using USFWS-approved handling techniques.

BIO-08: Handling of California Red-Legged Frog

If a California red-legged frog is discovered, the resident engineer and USFWS-approved biological monitor will be immediately informed.

- If a California red-legged frog gains access to a construction zone, work will be halted immediately within 50 feet until the animal leaves the site or is captured and relocated by the USFWS-approved biological monitor.
- The USFWS will be notified within one working day if a California red-legged frog or San Francisco garter snake is discovered in the construction site.
- The captured California red-legged frog will be released in appropriate habitat outside of the construction area but near the capture location. The release habitat will be determined by the USFWS-approved biological monitor.
- The USFWS-approved biological monitor will take precautions to prevent introduction of amphibian diseases in accordance with the Revised Guidance on Site Assessments and Field Surveys for the California Red-Legged Frog (USFWS 2005).

San Francisco Garter Snake

The San Francisco garter snake was federally listed as an endangered species under FESA on March 11, 1967 (32 FR 4001). No critical habitat has been designated. San Francisco garter snake was listed as a state endangered species in 1971 (USFWS 2006) and is listed as a Fully Protected Species under California Fish and Game Code (CFGC) Section 5050. The listing occurred because of San Francisco garter snake habitat loss across the snake's range. The San Francisco garter snake is limited in distribution to portions of San Mateo and Santa Cruz counties.

Caltrans relied on the best available scientific and commercial data, including literature searches and a visual assessment, to evaluate the potential for this species to occur in the BSA and to infer a potential for presence. Caltrans reviewed CNDDB and the online application iNaturalist to determine potential occurrence of San Francisco garter snake in the BSA. San Francisco garter snake were not observed on site during reconnaissance site visits, and a protocol-level survey was not conducted for this project.

Eleven recorded occurrences of San Francisco garter snake exist within 2 miles of project BSA locations. Three observations are known to be extirpated, and all but one are precluded from occurring in the BSA by barriers such as the SR 1 concrete median, residential development, or distance from the project area. Potential habitat for San Francisco garter snake in the BSA is marginal. Paved surfaces, graveled shoulders, and regularly mowed areas do not provide the physical or biological elements required to support San Francisco garter snake in any of its life stages. It is unlikely that San Francisco garter snake individuals could occur in the project area where work is proposed.

Small areas of potential habitat for San Francisco garter snake would be permanently and temporarily impacted due to ground disturbance and vegetation removal. Project impacts can be quantified in acreage, depending on whether they are permanent or temporary in nature. Permanent impacts are those that remove habitat for more than 1 year, and temporary impacts are those that remove habitat for less than 1 year. Impacts to upland/dispersal habitat are based on the maximum estimated ground disturbance in the project footprint. Table 2-2 provides an estimate of impacts to different types of potential San Francisco garter snake habitat.

Table 2-2 Impacts to San Francisco Garter Snake Potential Habitat

Habitat Type	Impact Type	Area (acres)
Aquatic breeding	Permanent	0
Aquatic breeding	Temporary	0.03
Upland/dispersal	Permanent	0.01
Upland/dispersal	Temporary	1.09

Special-Status Plant Species

There is currently one plant species that is known to or likely to occur in the BSA. Other special-status plant species were determined to have little or no potential to occur in the BSA. Initial reconnaissance surveys did not discover any special-status plant species, but the surveys were not appropriately timed to determine the presence of rare plants with potential to occur in the BSA. Several special-status plants (defined here as plants ranked CRPR 1A, 1B, 2A, or 2B2, as well as state and federally listed species) have potential to occur in the BSA and have known occurrences mapped nearby, but would not have been detectable at the time of survey. A rare plant survey prior to final project design is required to determine the presence of and potential impacts on any listed plant species.

Ornduff's meadowfoam, a CRPR 1B.1 special-status plant, was identified in the BSA during a follow up survey in March 2022. Ornduff's meadowfoam is an annual plant only known to occur the area between Half Moon Bay and Moss Beach. The species was initially identified in 1998 in an agricultural field at that location. The core of this species' population grows densely

over an area of approximately 18 acres (Buxton 2013). Repeated attempts to locate this species elsewhere in California have not been successful (Buxton 2013).

Ornduff's meadowfoam is a winter annual that germinates in the fall. Flowering and fruiting occur simultaneously through the winter and early spring (Buxton 2013). The species currently occupies low-lying portions of an agricultural field, along with adjacent drainage ditches and ruts. The field is plowed annually, which reduces competition; the species completes its life cycle during the time when the field is fallow.

An area of agricultural cropland adjacent to SR 1 supports the only known population of this plant. The population appears to be thriving in the constant disturbance regime and moist soil conditions in the agricultural field where it occurs. During a site visit on April 15, 2022, a botanist identified Ornduff's meadowfoam occurring on both sides of the freeway where it is known to occur. Caltrans previously assessed potential drainage work in this area. Poor drainage of the agricultural croplands in the BSA is likely a contributing factor to the moderately moist soil (i.e., mesic) conditions associated with this plant population. To avoid impacts to this newly discovered population, Caltrans eliminated the drainage work considered at this location from the project.

A substantial change in soil moisture regime may eradicate Ornduff's meadowfoam where it occurs in the BSA and may have an adverse impact on the only known population of this species. Avoidance and minimization measure BIO-11 will prevent drainage system work adjacent to SR 1 that could impact the area that supports, or contributes hydrologically to, this population. PF-BIO-02/AMM BIO-13 will establish an ESA for further protection. Impacts to special-status plant species would be less than significant; no mitigation is proposed or required with implementation of the project features and avoidance and minimization measures proposed.

Proposed Avoidance and Minimization Measures

Caltrans will implement the following avoidance and minimization measures to protect special-status plants prior to construction:

BIO-09 Rare Plant Survey

Caltrans will conduct a rare plant survey in the BSA to determine the presence or absence of special-status plant species. To ensure that surveys are conducted at an appropriate time to identify all the target species, as many as three survey replicates will be performed. The survey replicates will be timed based on target species blooming periods and rainfall levels, but are targeted to occur in March, late April/May, and June of 2022. All plants will be identified to a level needed to verify protected status. Any listed plants discovered in the field will be mapped and included as ESAs in the final plans and specifications. Caltrans will consult with the appropriate wildlife agency with jurisdiction and will obtain necessary permits or authorizations if unavoidable take of a listed plant species incidental to the proposed work would occur.

BIO-10 Pre-Construction Plant Survey

A project biologist with appropriate botany experience will perform a site survey in ESAs where construction disturbance could occur before start of work. Special-status plants will be flagged and avoided where possible. Caltrans will coordinate with appropriate wildlife agencies with jurisdiction prior to construction if incidental take of a listed plant species is unavoidable, and will obtain any necessary permits or

authorizations for direct impacts. Caltrans will adhere to the requirements of all permits and authorizations issued for the project.

BIO-11 Drainage Work Exclusion for Ornduff's Meadowfoam

Caltrans will avoid drainage system rehabilitation or other work in unpaved areas that could affect soil hydrology within 3,000 feet of where Ornduff's meadowfoam is known to occur. If Caltrans later determines that rehabilitating the drainage system at this location is necessary, it will complete a soil hydrology study, drainage system design, and mitigation plan in coordination with the California Department of Fish and Wildlife (CDFW) that results in no net loss of this species or its habitat.

Essential Fish Habitat

No evidence could be found, historical or otherwise, that Pilarcitos Creek or any of the other smaller drainages (such as Denniston or Frenchman's Creeks) in the BSA may support Coho salmon (Spence et al. 2012; NMFS 2012). Furthermore, current habitat conditions in the waterways in the BSA are generally incompatible with the species because they lack summer cold water flows, deep pools with abundant cover, and a lagoon suitable for a successful transition to saltwater, all of which the species requires. Because Pilarcitos Creek may have historically supported Coho salmon, it is designated as EFH under the Pacific Coast Salmonid Fisheries Management Plan. Pilarcitos Creek is not expected to provide spawning areas for Coho.

No culvert replacement or other instream work would occur at Pilarcitos Creek where EFH is present. Work near this waterway would be limited to guardrail replacement in upland habitat, which may involve vegetation removal from the road shoulder or the trimming of tree branches that overhang the road shoulder. This limited form of vegetation removal is not expected to result in any decrease in shading or other forms of riparian habitat contribution to areas potentially supporting salmon. As a result, the project would have no impacts to EFH.

b) Would the project 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?

The project would have less-than-significant impact. Vegetation in the BSA is relatively common, with sensitive communities being limited to wetlands and other waters of the United States and waters of the state. The creek corridors at the creek crossings in the BSA consists of a vegetation type dominated by tall red alder (*Alnus rubra*) trees, and dense arroyo willow (*Salix lasiolepis*) and red willow (*Salix laevigata*) stands.

Approximately 4.3 acres of riparian woodlands occur in the project's BSA. The project is currently estimated to have permanent impacts to less than 0.02 acre, and temporary impacts to less than 0.47 acre of CCC jurisdictional riparian areas. Specific impacts would be estimated during the application for a Coastal Development Permit from the LCP or CCC.

Construction work in the perennial and intermittent creek up to the top of bank, and any contiguous adjacent riparian habitat, also would require a CFGC Section 1602 Streambed Alteration Agreement from CDFW.

Caltrans would implement project features and the avoidance and minimization measures proposed in response to the following question that would benefit riparian habitat and sensitive

natural communities within the project area. Additionally, the measure proposed for steelhead, BIO-01, would also minimize impacts to riparian habitat.

c) Would the project 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?

The project would have a less-than-significant impact. The project's construction activities have the potential to impact wetlands and waters directly and indirectly in the BSA. Project actions that could cause temporary impacts to waters of the United States and waters of the state include construction access and work in the wetlands for culvert replacement.

Permanent impacts to wetlands and waters of the United States would be avoided because the new drainage system elements would be rehabilitated entirely within the footprint of the existing elements. The project would result in temporary impacts to jurisdictional areas. No permanent impacts to wetlands and other waters is anticipated. The project has potential to temporarily impact less than 0.001 acre of wetlands, less than 0.02 acre of other waters, and less than 0.02 acre of culverted waters of the United States.

The project would have no permanent impacts on wetlands or waters that are state jurisdictional only. The project would have relatively minimal temporary impacts on other waters of the state, including less than 0.03 acre of other waters and less than 0.02 acre of culverted other waters.

Specific impacts in project area will be estimated to obtain all necessary state and federal permits for the project during the final design phase. The project is proposing avoidance and minimization measures for potential impacts to wetlands and waters, and no mitigation is proposed.

Proposed Avoidance and Minimization Measures

Caltrans would implement the following measures to address potential impacts to wetlands, waters, and riparian habitat in the project area:

BIO-12: Wetlands and Waters Construction Work Windows

Work in wetlands, waters, and riparian habitat will be limited to June 15 through October 15 to avoid or minimize impacts to waters of the United States, waters of the state, riparian habitat, and special-status species habitat.

BIO-13: Environmentally Sensitive Areas

Wetlands, waters, riparian habitat, designated critical habitat, and special-status species habitat—including that of Ornduff's meadowfoam—will be delineated as ESAs on contract plans and defined in contract specifications. ESAs outside of the proposed work areas will be specifically identified to avoid during construction. Where work must occur in or adjacent to an ESA, an approved biologist with stop-work authority will be present.

BIO-14: ESA Fencing

Caltrans will install fencing to outline and protect ESAs prior to the start of construction. ESA provisions will be implemented as a first order of work and will remain in place until all construction activities are completed in the work area.

d) Would the project 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?

Wildlife movement corridors link areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. Urbanization and the resulting fragmentation of open space areas create isolated “islands” of wildlife habitat, forming separated populations. Creek corridors may act as an effective link among suitable habitat in the BSA. The project would not further develop the existing roadway and would therefore have no impact on terrestrial species movement.

SR 1 acts as a potential barrier to terrestrial wildlife, such as California red-legged frog, in the project vicinity. However, there is limited ecological incentive for California red-legged frog or San Francisco garter snake to seek habitats west of SR 1, given the proximity to the ocean. Creek corridors throughout the project footprint may act as an effective link for some populations. Urban land throughout the BSA may serve as a potential barrier to habitat connectivity.

The project would replace in-kind two small, culverted water crossings that are not likely to support anadromous fish in the BSA: Arroyo de en Medio and an unnamed tributary to Denniston Creek. Work at these crossings would not substantially interfere with movement of any migratory fish or aquatic species. The project would have no impacts on aquatic species because these culverts would retain existing conditions and are not likely to support anadromous fish species.

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

The project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. The project would have no impact.

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

The project is not within the boundaries of any Habitat Conservation Plan; Natural Community Conservation Plan; or other approved local, regional, or state habitat conservation plans. The project would have no impact.

2.2.5 Cultural Resources

Question	CEQA Determination
a) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to in §15064.5?	Less than Significant Impact
b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	Less than Significant Impact
c) Would the project disturb any human remains, including those interred outside of dedicated cemeteries?	No Impact

Caltrans Professionally Qualified Staff (PQS) archaeologists and architectural historians have reviewed project information, the Caltrans Cultural Resource Database, as-built plans, aerial photographs, and maps, to evaluate the project's potential to affect cultural resources. An Area of Potential Effects (APE) was established for the project area in consultation with Caltrans PQS and Project Manager on October 6, 2021 (Caltrans 2021i). The APE is the area within which an undertaking may directly or indirectly cause impacts in the character or use of historic properties, including vertical impacts. The maximum depth of ground disturbance from project construction is anticipated to be 6 feet below ground surface. Two archaeological sites were identified in the APE and are considered to be eligible for inclusion in the National Register of Historic Places for the purposes of this project. They are considered eligible only because they will be protected in their entirety from any potential effects through the establishment of an ESA, in accordance with Stipulation VIII.C.3 of the Section 106 Programmatic Agreement. No built resources were identified in the APE.

Caltrans' Office of Cultural Resource Studies determined that a Finding of No Adverse Effect with Standard Conditions – ESA (Caltrans 2021e) pursuant to Section 106 of the National Historic Preservation Act of 1966 is appropriate for this project.

2.2.5.1 CEQA Significance Determinations for Cultural Resources

a and b) Would the project cause a substantial adverse change in the significance of a historical or archaeological resource pursuant to Section 15064.5?

As stated above, a Finding of No Adverse Effect with Standard Conditions - ESA was determined for the project because the two known archaeological resources in the APE will be protected in their entirety via horizontal and vertical ESAs. In addition, implementation of project feature PF-CUL-01 (summarized in Table 1-2) would protect previously unknown historical or archaeological resources that may be discovered during construction.

Proposed Avoidance and Minimization Measures

Caltrans proposes the following general avoidance and minimization measures to further protect known resources in the project area.

CUL-01: ESA Action Plan

An ESA action plan will be developed for the project to protect the two archaeological resources in the APE in their entirety. Before construction, the ESA Action Plan will be reviewed and approved by the Cultural Studies Office (CSO) at Caltrans' headquarters. The Caltrans archaeologist will ensure that the ESAs are included and described

clearly in the environmental document. The ESAs will be included in the project's Environmental Commitment Record.

The Caltrans archaeologist will work in coordination with the other responsible parties to ensure that the ESA is represented and depicted in the plans, specification, and estimates package. The package and plans will be reviewed throughout the design process, so that the ESAs are accurately represented and depicted. The Caltrans archaeologist will ensure that the ESA Action Plan is included in the resident engineer's Pending File.

All responsible parties will ensure that the ESAs are discussed during the preconstruction meeting, led by a qualified archaeologist and Native American tribes who may want to administer training as well. The importance of the ESAs will be discussed with construction personnel, stressing that no construction activity (including storage of equipment or materials) may occur in the ESAs, and that workers must remain outside of the ESAs at all times. In addition, historic preservation laws that protect archaeological sites and artifacts against any disturbance or removal will be discussed.

The resident engineer will notify the Caltrans Office of Cultural Resource Studies staff (Caltrans project archaeologist) at least 2 weeks in advance of the start of construction. A field review of ESA locations will be conducted. The Caltrans project archaeologist will mark the ESA locations with the contractor.

CUL-02: Construction Activities for ESA Protection

Temporary high-visibility fencing will be installed by the contractor at least 1 week before beginning any ground disturbance. The Caltrans archaeologist will coordinate this activity with the resident engineer. The Caltrans archaeologist will be present to supervise and monitor this activity.

The Caltrans archaeologist will conduct spot inspections and site visits to ensure the integrity of the ESAs. The Caltrans archaeologist will notify the State Historic Preservation Officer, CSO, and consulting Native American parties within 48 hours of any ESA breach, post-review discovery, or inadvertent effect, to immediately determine how the breach or discovery will be addressed.

CUL-03: Post-Construction Activities

The resident engineer will inform the Caltrans archaeologist when construction is completed. The contractor, in coordination with the resident engineer and the Caltrans archaeologist, will remove the ESA fencing at the completion of construction.

The project would have no impact on historical or archaeological resources because construction would not occur within known resources, and avoidance and proposed minimization measures would address any potential impacts to any known or unknown resources that may be discovered in the project area. The impacts would be less than significant.

c) Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Known burial sites in the project vicinity are outside the project area. The avoidance and minimization measures proposed above (CUL-01, -02, and -3) would protect any human remains discovered in the project area. In addition, project feature PF-CUL-02 would establish the protocol for the discovery of previously unknown human remains, including contacting the San Mateo County Coroner, and additional actions if those remains are determined to be Native American. Therefore, no impact would occur.

2.2.6 Energy

Question	CEQA Determination
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	Less than Significant Impact
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	No Impact

2.2.6.1 CEQA Significance Determinations for Energy

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

Transportation energy usage generally is described in terms of direct and indirect energy, as stated in Chapter 13 of the Caltrans Standard Environmental Reference (Caltrans 2022a). Direct energy usage can be further divided into mobile sources and construction.

Direct energy usage by mobile sources typically is quantified using vehicle miles traveled (VMT), a measure of travel for all vehicles in the project area, by converting VMT to fuel consumption, measured in British thermal units. The project would not increase capacity, and therefore is not anticipated to increase VMT or lead to a quantifiable increase in energy usage by mobile sources (see further discussion presented in Section 2.2.17). In addition, project construction would be a temporary and one-time commitment of energy, similar to any infrastructure improvement project. Energy consumption during construction would be conserved and minimized to the extent feasible through implementation of standard BMPs.

Indirect energy usage is primarily associated with project maintenance (i.e., fuel used by equipment for periodic maintenance of the system). Many other sources contribute indirectly to the energy consumption of a transportation system, but they can be difficult to quantify reliably at the project level (Caltrans 2022a). Maintenance and landscaping activities are anticipated to be minimal and would be necessary to maintain the integrity of the system. The impact would be less than significant. No additional mitigation is required.

b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

The State of California Energy Action Plan and the Integrated Energy Policy Report regulate energy conservation throughout the state. The State of California Energy Action Plan was adopted to ensure adequate, reliable, and reasonably priced electrical power and natural gas quantities for California's residents, through policies that are cost-effective and environmentally conscious (CEC 2003). California policies that are influenced by the California Global Warming Solutions Act, Assembly Bill (AB) 32, are demonstrated in the Integrated Energy Policy Report, which is updated bi-annually to provide policy recommendations to meeting the state's energy demands while addressing carbon constraints (CEC 2021).

According to Senate Bill (SB) 100, the state is targeting 100 percent renewable or carbon-free energy usage by 2045. The California Energy Commission's Clean Transportation Program

leverages public and private investments to support adoption of cleaner transportation, powered by alternative and renewable fuels.

The Energy and Climate Change Element of the San Mateo County General Plan includes goals and implementing policies for reducing energy usage and combatting climate change in the county. Goal 4 of this element is to promote and implement policies and programs to reduce VMT by all vehicles traveling in the unincorporated county. Policy 4.2 focuses on promoting nonmotorized and alternative travel, through strategies such as requiring project applicants to evaluate and identify appropriate measures to achieve Complete Streets and promote alternative travel; such measures include pedestrian paths/sidewalks or traffic calming improvements. As stated above, the project would not lead to an increase in VMT, and therefore would not conflict with this element. In addition, as described in Section 1.5, the project would encourage active transportation by upgrading pedestrian and bicycle features.

The project would not lead to wasteful, inefficient, or unnecessary consumption of energy resources. Furthermore, it would encourage pedestrian and bicycle access through the inclusion of crosswalks, sidewalks, and curb cuts. Therefore, the project is not anticipated to conflict with any state or local plans for renewable energy or energy efficiency. No impact would occur.

2.2.7 Geology and Soils

Question	CEQA Determination
a) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	No Impact
ii) Strong seismic ground shaking?	No Impact
iii) Seismic-related ground failure, including liquefaction?	Less than Significant Impact
iv) Landslides?	No Impact
b) Would the project result in substantial soil erosion or the loss of topsoil?	No Impact
c) Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	No Impact
d) Would the project 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
e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	No Impact
f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	No Impact

2.2.7.1 CEQA Significance Determinations for Geology and Soils

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

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Caltrans reviewed the DOC's Earthquake Hazards Zone Application mapping tool and determined that the project area is not in an earthquake fault zone (DOC 2018a). In accordance with the Division of Mines and Geology Special Publication 42, the project would not be regulated by the Alquist Priolo Act because the project area is not in an earthquake fault zone (DOC 2018b). The project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death from the rupture of a known fault. No impact would occur.

ii) Strong seismic ground shaking?

The project area has the potential to experience moderate to strong ground-shaking during a seismic event, based on historical seismic activity in the Bay Area and because of numerous major (i.e., the San Andreas Fault) and minor (i.e., the Seal Cove and Denniston Creek faults within the San Gregorio Fault Zone) fault lines nearby. The project would be designed to accommodate ground shaking associated with the nearby faults to the extent feasible, in compliance with all applicable standards and regulations. The project would have no direct or indirect impact on the potential for ground shaking or on the public's risk for loss, injury, or death from seismic events. No impact would occur.

iii) Seismic-related ground failure, including liquefaction?

Most of the project area overlaps areas that are susceptible to liquefaction, according to DOC's California Earthquake Hazards Zone Application (DOC 2021). The overlapping area (Half Moon Bay California Geological Survey Liquefaction Zone) has a historical occurrence of liquefaction or local geological, geotechnical, and groundwater conditions that indicate a potential for permanent ground displacements. Permanent ground displacement potential in the project area is substantial enough that design measures, as defined in PRC Section 2693(c), to reduce seismic risks would be required. These conditions would be addressed in geotechnical studies to be conducted to inform the final project design. The impact would be less than significant. No additional mitigation is required.

iv) Landslides?

The project area is outside landslide zones mapped by the DOC. Design and construction guidelines would incorporate engineering standards that address seismic risks, including ground failure related to liquefaction, landslides, and lateral spreading. Therefore, the project would not increase the risk of loss, injury, or death related to landslides. No impact would occur.

b) Would the project result in substantial soil erosion or the loss of topsoil?

Project construction primarily would occur on existing paved roads within the Caltrans right-of-way. Some project elements (e.g., new paved surfaces, and new or replacement traffic infrastructure elements) would include excavation, vegetation clearing, and grubbing. These earth-disturbing activities could cause temporary, localized, and minor erosion of the topsoil. Implementation of standard Caltrans practices and BMPs for erosion control would be done. After completion of construction and earth-disturbing activities, all areas of disturbed soil would be revegetated to stabilize the topsoil, to prevent any post-construction erosion. No substantial soil erosion or loss of topsoil would result from the project. No impact would occur.

c) Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Earthquake-induced landslides and other seismic-related ground failures were discussed previously, under Impact (a). Caltrans will conduct any necessary or required geotechnical subsurface and design investigations during the final design phase, to ensure that the project addresses geologic concerns. The project would not increase the risk of on-site or off-site landslides, lateral spreading, subsidence, liquification, or collapse. No impact would occur.

d) Would the project 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?

Expansive soil is soil that expands when wet and shrinks when dry because of mineralogical composition. The project area is not on expansive soil (as defined in Table 18-1-B of the Uniform Building Code [ICBO 1994]) and would not include construction of habitable structures; therefore, it would not create substantial risk to life or property. No impact would occur.

e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

The project would not include the use of septic tanks or alternative wastewater disposal systems. No impact would occur.

f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

The project is not expected to result in disturbance to or overlap with any known paleontological resources, because the project area is not within fossil-bearing geologic units and the project would not affect native soil or rock. Caltrans does not anticipate the discovery or destruction of any unique paleontological resources during construction. No impact would occur.

2.2.8 Greenhouse Gas Emissions

Question	CEQA Determination
a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Less than Significant Impact
b) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Less than Significant Impact

2.2.8.1 CEQA Significance Determinations for Greenhouse Gas Emissions

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

As stated in Section 2.2.17, the project would not be capacity increasing and is not expected to lead to a measurable and substantial increase in vehicle travel; the project would have no impact on VMT. Therefore, the project would not lead to an increase in operational greenhouse gas (GHG) emissions (i.e., increased emissions from vehicles in the project area). However, short-term GHG emissions resulting from construction activities are anticipated.

Construction-generated GHG would stem from materials processing by on-site construction equipment, workers commuting to and from the project site, and potential traffic delays because of construction. These emissions would be produced at different rates throughout the construction phase, depending on the activities involved at various phases of project construction. Construction-generated GHG was calculated using the Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model, version 9.0.0 (Caltrans 2021b). For a construction duration of 14 months, the total amount of carbon dioxide (CO_2) that would be produced was estimated to be 516.01 tons.

In addition to CO_2, the construction-generated GHG analysis quantified total GHG emissions—including CO_2, methane (CH_4), and nitrous oxide (N_2O)—as carbon dioxide equivalent (CO_2e). CO_2e is a measure of how much energy the emissions of 1 ton of a gas would absorb over a given time, relative to the emissions of 1 ton of CO_2. This figure was obtained by multiplying each GHG by its global warming potential (GWP). The total GHG emissions for construction would be 476.38 metric tons of CO_2e. These emissions would be short-term and would not lead to long-term adverse effects. In addition, Caltrans Standard Specifications would be followed, such as complying with air pollution control rules, regulations, ordinances, and statutes. A description of project feature PF-GHG-01 and the requirements for contractors under Caltrans Standard Specifications Section 7-1.02A and 7-1.02C is shown in Table 1-2. This would minimize construction-generated GHG emissions to the maximum feasible extent. The impact would be less than significant. No additional mitigation is required.

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

Short-term GHG emissions during project construction are anticipated but would be minimized to the extent feasible, and would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG. At the state level, ARB implements measures to achieve emission reductions of GHG in response to AB 32 and SB 32. AB 32, the

California Global Warming Solutions Act of 2006, initially set a goal of reducing GHG emissions to 1990 levels by 2020. This goal was extended by SB 32 in 2016, to reduce emissions by 40 percent below 1990 levels by 2030. At the local level, plans and programs include the San Mateo County General Plan Energy and Climate Change Element, Energy Efficiency Climate Action Plan, and Government Operations Climate Action Plan. Project construction would not conflict with any goals or policies at the state or local level, because Caltrans' Standard Specifications support the reduction of emissions to the maximum feasible extent. The impact would be less than significant. No additional mitigation is required.

2.2.9 Hazards and Hazardous Materials

Question	CEQA Determination
a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	No Impact
b) Would the project 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
c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	Less than Significant Impact
d) Would the project 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
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
f) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Less than Significant Impact
g) Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	No Impact

2.2.9.1 CEQA Significance Determinations for Hazards and Hazardous Materials

a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?, and
b) Would the project 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?

During project construction, vehicles and equipment would be powered with gasoline or diesel, which are hazardous. Caltrans Standard Specifications and BMPs would be implemented to prevent spills or leaks from construction equipment and from storage of fuels, lubricants, and solvents. All aspects of the project associated with removal, storage, transportation, and disposal of hazardous material would be done in accordance with the appropriate California Health and Safety Code (H&SC). If hazardous materials are found during construction, the appropriate safeguard measures would be taken, and the project would comply with Caltrans Standard Specification 1411, Hazardous Waste and Contamination, which outlines handling, storing, and disposing hazardous waste. Project construction is not expected to create a hazard to construction workers, the public, or the environment. Project operation would not involve the use of hazardous materials. No impacts would occur.

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

Seven schools are within 0.25 mile of the project area: Picasso Preschool, Wilkinson School, El Granada Elementary School, Pilarcitos High School and Alternative Education, La Costa Adult School, Hatch Elementary School, and Manuel F. Cunha Intermediate School. A relatively small amount of emissions from vehicles and equipment would occur during project construction. Adherence to local, federal, and state regulations would reduce the risk of exposure to hazardous materials and accidental hazardous materials released, such as fuel.

No major sources of contamination are evident on the adjacent properties (based on a search of GeoTracker, the State Water Resources Control Board's database and geographic information system) that could migrate onto the site. Therefore, no site investigation for hazardous waste/material would be necessary during the current conceptual phase of the project. Minor excavations would be involved in unpaved project areas. If hazardous materials where excavation is proposed are discovered during investigations conducted during final design or construction, Caltrans would follow the appropriate standard specifications for any contaminants. During final design, Caltrans will prepare waste management requirements (e.g., treated wood waste from guardrail removal) to be included in its construction contract. The project would not result in the spread of hazardous materials or expose sensitive receptors to hazards, such as schools. The impact would be less than significant. No additional mitigation is required.

d) Would the project 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?

Screening of the California Department of Toxic Substances Control's EnviroStor database and its current hazardous waste and substance site list, maintained in accordance with Government Code Section 65962.5, revealed no known hazardous waste sites in the project area. No impact would occur.

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?

SR 1 within the project limits is adjacent to Half Moon Bay Airport. The City and County Association of Governments of San Mateo County (CCAG) completed a final Airport Land Use Compatibility Plan for the Environs of Half Moon Bay Airport in 2014 (CCAG 2014). The project would be compatible with the policies and criteria considered for SR 1 in the CCAG plan. Because of the relatively short duration of construction and adherence to federal and state regulations during construction, the project is not expected to result in a safety hazard for people residing or working in the project area. No impact would occur.

f) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

SR 1 is a major north-south highway for the communities near the project area, and SR 1 is expected to be used as an evacuation route in the event of an emergency. The project would be subject to San Mateo County's Emergency Operations Plan (EOP) (San Mateo County

2015). The EOP provides guidelines for emergency response planning, preparation, training, and execution throughout the county. Project construction would result in temporary and minor increases in construction-related traffic on SR 1. Caltrans would prepare a traffic management plan (TMP) to maintain the flow of traffic during construction and ensure accessibility through the locations along SR 1 for essential services and vehicles. In the event of such an emergency, Caltrans would coordinate with local officials to ensure that SR 1 remains open to emergency traffic.

The impact would be less than significant. No additional mitigation is required.

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

The project area is within zones that are classified as Very High Fire Severity State Responsibility Areas (CAL FIRE 2007). Caltrans proposes to replace and construct new guardrails and safety barriers made of concrete and metal, which would have a limited susceptibility to fires. The project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires (see Section 2.2.20 for additional discussion about wildfire hazards). No impact would occur.

2.2.10 Hydrology and Water Quality

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

2.2.10.1 CEQA Significance Determinations for Hydrology and Water Quality

Responses to these CEQA checklist items are based on the following technical studies, prepared by Caltrans for the project:

- Environmental Review for Project Approval and Environmental Document Memorandum from Office of Hydraulics Engineering (Caltrans 2021c)
- Multi-Asset Pavement Rehabilitation Project: Water Quality Study (Caltrans 2021d).

In addition, Caltrans reviewed the California Water Board's online database, GeoTracker, to identify any potential major sources of contamination in and adjacent to the project area.

a) Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

The response to this question is based on Caltrans' Water Quality Study (2021d). The project area is under the jurisdiction of the San Francisco Bay RWQCB (Region 2), which would be responsible for enforcement of state and federal water quality regulations for the project. The project area is within the San Mateo Hydrologic Unit, San Mateo Coastal Hydrologic Area, and the San Gregorio Creek-Frontal Pacific Ocean Watershed. Caltrans has identified seven receiving water bodies in and near the project area, including San Vincent Creek, Denniston

Creek, Deer Creek, Arroyo Medio, Frenchman's Creek, Pilarcitos Creek, and the Pacific Ocean. Four of the identified receiving waters are sediment-sensitive water bodies: San Vincent Creek, Denniston Creek, Frenchman's Creek, and Pilarcitos Creek.

Three Clean Water Act 303(d)-listed water bodies and pollutants of concern were identified in the project area or vicinity (i.e., Pacific Ocean at Pillar Point, Pacific Ocean at Pillar Point Beach, and San Vicente Creek). The project would not contribute to the identified pollutant (indicator bacteria) and would have no effect on pollutant total maximum daily loads in any 303(d) water bodies.

The project may cause potential temporary impacts on water quality during construction. The project would have the potential to cause temporary water quality impacts from a change in localized pH, turbidity, and other pollutants entering the active construction site, adjacent areas, and receiving water bodies.

The project would not cause any new long-term impacts on water quality because the potential for long-term impacts from sediment deposition, sediment transport, and vehicular-related pollutants would be the same for the existing facility (i.e., the No-Build Alternative).

Project construction activities would be subject to the California State Water Resources Control Board's National Pollutant Discharge Elimination System, under Construction General Permit (CGP; Order No. 2009-0009-DWQ) and would require preparation of either a water pollution control plan (WPCP) or a stormwater pollution prevention plan (SWPPP). The current estimate indicates that the project would cause a disturbed soil area less than 1 acre, and development of a WPCP is expected. Preparation of a WPCP or an SWPPP is a standard Caltrans contract requirement. Either plan would be used to implement standard water quality BMPs, consistent with the proposed construction activities covered in the CGP. The disturbed soil area estimate would be revised during the project's final design phase, with a final recommendation of either developing a WPCP or an SWPPP. Project conformance with Caltrans' standard specifications for water quality controls, and preparation of a WPCP or an SWPPP, are listed as standard project features in Table 1-2.

The impact would be less than significant. No additional mitigation is required.

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

The project would have no effects on groundwater supplies. No impact would occur.

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

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

The project would not result in substantial erosion or siltation on or off-site. The project would not cause substantial alteration of the natural flow of waters. No impact would occur.

(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

The project is anticipated to result in less than 1 acre of net new impervious surfaces and would not result in flooding on or off-site. No impact would occur.

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

The project would address and improve existing stormwater drainage systems in the Caltrans right-of-way throughout the project area. The project would create less than 1 acre of new impervious surface, but in the context of the existing roadway and project scale, this would not be a substantial additional source of runoff. No impact would occur.

(iv) impede or redirect flood flows?

The project would not impede or redirect flood flows and is not expected to have any effect on the base floodplains identified in the project area. No impact would occur.

d) Would the project, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? No Impact

A single location on SR 1 at Surfer's Beach in the Community of El Granada is susceptible to tsunami and seiche inundation and is in a Federal Emergency Management Agency (FEMA) Flood Zone. Caltrans reviewed the State Water Resources Control Board's GeoTracker data management system for sites with potential to affect water quality in the project area. No major sources of contamination are evident in the adjacent properties that could migrate into the project site. The project would not introduce new pollutants into flood hazard, tsunami, or seiche zones present in the project area. No impact would occur.

e) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The San Francisco RWQCB has prepared and adopted its water quality control plan (Basin Plan), through which it manages surface and groundwater in the region. The project would coordinate with the San Francisco RWQCB during the permitting process, to maintain compliance with the Basin Plan. No impact would occur.

2.2.11 Land Use and Planning

Question	CEQA Determination
a) Would the project physically divide an established community?	No Impact
b) Would the project 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?	Less than Significant Impact

2.2.11.1 CEQA Significance Determinations for Land Use and Planning

a) Would the project physically divide an established community?

The project would be constructed primarily within Caltrans right-of-way, and no new roads or existing road expansion are proposed. The project would not alter the alignment of or access to either highway; therefore, it would not physically divide an established community. In addition, the project would improve connections across SR 1 for nonmotorized modes of transportation. No impact would occur.

b) Would the project 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?

SR 1 is the primary access road to coastal cities, unincorporated residential communities, and recreational areas in San Mateo County. SR 92 provides east-west access between the coastal and inland areas of the county. Land uses along the two highways include residential, recreational, and commercial. As stated in Section 2.2.17, the California Coastal Trail generally runs parallel to SR 1 in the project area and accommodates pedestrians, bicyclists, equestrians, and others. In addition, multiple publicly accessible open space and beach areas are adjacent to the project area, including Wavecrest Open Space, Venice State Beach, Miramar Beach, Surfers Beach, Mavericks Beach, and Pillar Point Bluff. The project would be constructed within Caltrans right-of-way, and would not alter existing or future land uses. Access along SR 1 and SR 92 would be managed and maintained during construction, with the exception of temporary lane closures and detours. Temporary impacts on traffic would be minimized by implementation of the project's TMP, as discussed in Section 2.2.17.

The project area is subject to the statutory mandates of multiple state, regional, and local plans and programs. A discussion of these plans and programs is presented next, along with an analysis of the project's consistency with each.

Consistency with State, Regional, and Local Plans and Programs

State Scenic Highway Program

Although the segments of both highways in the project area are eligible for State Scenic Highway designation, SR 1 and SR 92 in the project area currently are not designated as part of a state scenic highway, . Therefore, the project would have no effect because those portions of SR 1 and SR 92 have not been designated as part of the State Scenic Highway Program.

Coastal Zone Management Act

The entire project area is in the California Coastal Zone and is subject to the Coastal Zone Management Act of 1972 (16 United States Code [USC] 1451–1464, as amended). as well as to the California Coastal Act (CCA) of 1976, which was established to further protect the coastal zone. The policies established by the CCA include protection and expansion of public access and recreation, protection of agricultural lands, protection of scenic beauty, biological resources, and protection of property and life from coastal hazards. CCC is responsible for implementation and oversight under the CCA.

The CCA delegates power to local governments (i.e., counties and cities) to enact their own Local Coastal Programs (LCPs). The project area is subject to the policies of two LCPs—those of San Mateo County and Half Moon Bay (San Mateo County 2013b; City of Half Moon Bay 2020). The project area is under the permitting jurisdiction of the CCC, San Mateo County, and the City of Half Moon Bay, and would be required to undergo review of the pertinent LCPs and the CCC during the detailed design phase. Caltrans would coordinate with the CCC, San Mateo County, and the City of Half Moon Bay to ensure that the project remains compatible with their plans and programs, with respect to the resource areas identified in this document.

The policies of the CCA give the highest priority to preservation and protection of prime agricultural land and timber lands. The next highest priorities are public recreation and visitor-serving facilities. The project would not conflict with agricultural land uses or timber land uses in the project area, as discussed in Section 2.2.2. The project feature locations do not overlap with land zoned for either use, and no agricultural lands or timber lands are in the project area. In addition, the project features would not conflict or overlap with land designated as open space. The project would not adversely affect the California Coastal Trail or its use in the long term. The project features would not conflict with uses of the trail.

Key provisions of the CCA, San Mateo County LCP, and City of Half Moon Bay Local Coastal Land Use Plan are provided, along with an evaluation of project permitting activities (see Table 2-3, Table 2-4, and Table 2-5).

Table 2-3 Key Provisions of the California Coastal Act

Policy Number	Subject of Policy	Coastal Zone Assessment
Section 30210	Maximum public access and recreational opportunities shall be provided.	The project would not interfere with public access to recreational opportunities, such as adjacent open space and beaches. The project would improve existing bicycle and pedestrian transportation facilities used by the public throughout the State Route 1 corridor in the project area. The traffic management plan (discussed in Section 2.2.17) would account for any temporary impediments to access during construction, to maintain access.
Section 30211	Development shall not interfere with public access to the sea.	The project would not interfere with public access to the sea and would improve existing transportation facilities that are used by the public to travel to coastal access points (see assessment of Section 30210).
Section 30212	New development projects shall provide for public access to the shoreline and along the coast.	The project would rehabilitate and improve existing transportation facilities and would not expand the existing roadway. The project would include new bicycle and pedestrian improvements (crosswalks, sidewalks, and curb cuts) that would help connect the public to existing trails and roads accessing the shoreline outside the project area. Access to the coast already exists near the project area, and the project would not affect this access.
Section 30213	Lower cost visitor and recreational facilities shall be protected, encouraged, and where feasible, provided. Developments providing public recreational opportunities are preferred.	The project would not affect access to visitor or recreational facilities. It would improve existing access to public recreational opportunities by enhancing pedestrian and bicycle facilities along the coast.
Section 30252	Public access	See assessments of Sections 30210, 30211, and 30212.
Section 30231	Biological productivity; water quality	The project design and implementation of appropriate standard California Department of Transportation (Caltrans) project features would minimize potential impacts on environmentally sensitive areas. Caltrans is proposing avoidance and minimization measures to address specific potential impacts on biological resources, hydrology, and water quality (see Sections 2.2.4 and 2.2.10) that could occur during construction.
Section 30233	Diking, filling, and dredging of wetlands	As stated in Section 2.2.4, the project would not permanently dike, fill, or dredge wetlands.
Section 30235	Construction altering natural shoreline	The project would not affect the existing natural shoreline.

Policy Number	Subject of Policy	Coastal Zone Assessment
Section 30240	Environmentally Sensitive Habitat Areas	The project would have relatively minimal permanent or temporary impacts to local coastal program (LCP)/California Coastal Commission (CCC) jurisdictional riparian areas. Specific impacts would be estimated during the application for a Coastal Development Permit from the LCP or CCC. As outlined in Section 2.2.4, the project would have less than significant impacts on biological resources, including special status species, riparian habitats and sensitive natural communities, and wetlands. Avoidance and minimization measures BIO-13 and BIO-14 are proposed to delineate environmentally sensitive areas, and to protect them during construction. Per Section 30240 (b), work will be sited and designed to prevent impacts which would significantly degrade environmentally sensitive habitat areas. Caltrans will continue to coordinate with the CCC and local coastal planners to ensure that the project remains consistent with applicable policy.
Section 30241-30242	Agricultural land	There are no Prime Farmland or lands under a Williamson Act contract in the project area. As stated in Section 2.2.2.1, the project area is not in but is adjacent to Unique Farmland and Prime Farmland at some locations. However, the project area would be limited to the existing right-of-way at these locations and would not convert adjacent lands.
Section 30244	Archaeological/ paleontological resources	The project would have no effects on any archaeological or paleontological resources.
Section 30251	Scenic and visual qualities	Based on the project features and VIS-01, the project would be compatible with existing scenic and visual quality.
Section 30254	Public works facilities	The project does not propose to construct new or expand existing public works facilities, nor does it propose to form any special districts that would induce new development.
Section 30604	Coastal development permits shall include a finding that the development is in conformity with public access and public recreation policies; housing opportunities for low- and moderate-income persons.	Caltrans would be in conformity with public access and public recreation policies. The project would be a transportation project and would not affect housing.
Section 30609.5	State lands between the first public road and the sea; sale or transfer	No state lands would be sold to a private entity as part of the project.

Table 2-4 Key Provisions of the San Mateo County Local Coastal Program

Subject of Policy	San Mateo County Local Coastal Program Assessment
Locating and Planning New Development	The project would not have any effect on growth, sensitive archaeological or paleontological resources; and would not require development of public services and infrastructure. The California Department of Transportation (Caltrans) would implement best management practices and avoidance and minimization measures to avoid or minimize the project's potential effects on aesthetics, biological resources, and water quality in the project area.
Public Works	The project would upgrade and install highway system components on State Route (SR) 1 and SR 92, which are existing transportation facilities. Highway capacity would not be increased, as specified in Section 2.44b of the San Mateo Local Coastal Program (SMLCP). The alignments and scenic characteristics of SR 1 and SR 92 would be maintained, with implementation of project features and VIS-01.
Housing	The project would have no impacts on housing, as discussed in Section 2.2.14.
Energy	The project would not include construction of any oil or gas wells, onshore oil facilities, pipelines or transmission lines, or alternative energy facilities.
Agriculture	The project would be constructed within Caltrans' right-of-way and would not affect agricultural land or land zoned for timber harvest. The project would not conflict with the Agricultural component of the SMLCP.
Aquaculture	The project would not affect aquaculture facilities or construct any new aquaculture facilities.
Sensitive Habitats	Sensitive habitats exist in the Biological Study Area. However, project activities would not result in impacts on these habitats, with implementation of project features and the avoidance and minimization measures for biological resources presented in Appendix C.
Visual Resources	The project would result in temporary impacts on visual resources during construction. With implementation of project features and VIS-01, the new project elements (guardrails) would be compatible with the existing visual quality and character (see Section 2.2.1).
Hazards	The project is not anticipated to conflict with San Mateo County's Emergency Operations Plan, nor would it exacerbate risks associated with wildfire (see Section 2.2.20). A single location on SR 1 at Surfer's Beach in the Community of El Granada is susceptible to tsunami and seiche inundation and is in a Federal Emergency Management Agency Flood Zone. This project would not create features that would worsen impacts on the surrounding areas from such hazards.
Shoreline Access	The project components would not interfere with public access to recreational opportunities, such as adjacent open space and beaches. The traffic management plan (Section 2.2.17) would account for any temporary impediments to access during construction, to maintain access. Caltrans would coordinate with the County of San Mateo on recommendations provided in their Connect the Coastside Plan (San Mateo County 2021) where appropriate for the project.
Recreation/Visitor Serving Facilities	See the assessment of shoreline access.
Commercial Fishing/ Recreational Boating	The project would have no impact on commercial fishing or recreational boating.

Table 2-5 Key Provisions of the City of Half Moon Bay Local Coastal Land Use Plan

Subject of Policy	City of Half Moon Bay Local Coastal Land Use Plan Assessment
Social Equity and Environmental Justice	The project would improve existing road surfaces and traffic operation system elements that would serve all users, and the project would have no impact on social equity or environmental justice. As stated previously, the project would not divide an established community.
Development	The project would not conflict with the development policies of the Local Coastal Land Use Plan (LCLUP). The project would not induce growth, change existing land use patterns, or conflict with the land use designations identified in Chapter 2 of the plan.
Public Works	The project would not conflict with the LCLUP's public works, water system, sewer facilities, circulation, stormwater system, and management policies. Project features and standard California Department of Transportation (Caltrans) best management practices would maintain the existing facilities. In addition, key components of the Build Alternative would improve the drainage system in the project area.
Agriculture	The project would be constructed within Caltrans' right-of-way and would not affect agricultural land uses or farm worker housing.
Coastal Access and Recreation	The project components would not interfere with public access to recreational opportunities, such as adjacent open space and beaches. Caltrans would coordinate with the County of San Mateo on recommendations provided in their Connect the Coastside Plan (San Mateo County 2021) where appropriate for the project. The traffic management plan (Section 2.2.17) would account for any temporary impediments to access during construction, to maintain access.
Natural Resources	As shown in Sections 2.2.4 and 2.2.10, project impacts on biological resources, hydrology, and water quality would be less than significant.
Environmental Hazards	The project would not exacerbate environmental hazards associated with climate change, shoreline hazards such as tsunamis, seismic activity, flooding, or wildfire. Sections 2.2.20 and 2.3 discuss the project's intersection with wildfire and climate change risks, respectively.
Cultural Resources	Caltrans' Professionally Qualified Staff determined that a Finding of No Adverse Effect with Standard Conditions – Environmentally Sensitive Area (ESA) is appropriate for the project (see Section 2.2.5 and 2.2.18). No impacts on cultural resources or tribal cultural resources would occur with implementation of the ESA, as discussed in Section 2.2.5.
Scenic and Visual Resources	The project would result in visual changes through roadway rehabilitation, Complete Streets Improvements, and upgrades to traffic operations and safety elements. However, as stated in Section 2.2.1, the project is anticipated to result in a less-than-significant impact on visual character, with the implementation of project features, and avoidance and minimization measures.

San Mateo County General Plan

The project would adhere to the San Mateo County General Plan (San Mateo County 2013a) and align with the following policies, goals, and objectives by providing a safe, reliable transportation system for all users:

- **Goal and Objective (GO) 12.6:** Plan for a transportation system that provides for the safe, efficient, and convenient movement of people and goods in and through San Mateo County.
- **GO 12.7:** Create and maintain Complete Streets that serve all categories of transportation users and goods, providing safe, efficient, comfortable, and convenient travel along all streets through an integrated, balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways for safe and convenient travel in a manner that is suitable to the rural, suburban, or urban context of the General Plan.
- **GO 12.9:** Provide for a balanced and integrated transportation system in the county that allows for travel by various modes and easy transfer between modes.
- **GO 12.11:** Balance and attempt to minimize adverse environmental impacts resulting from transportation system improvements in the county.
- **GO 4.1:** Protect and enhance the visual quality of and from shorelines of bodies of water, including lakes, reservoirs, streams, bays, ocean, and sloughs.

The project would not cause a substantial adverse effect on coastal resources and is anticipated to have no significant environmental impact due to a conflict with the San Mateo County General Plan.

City of Half Moon Bay General Plan

The City of Half Moon Bay's General Plan is being updated (City of Half Moon Bay 2022). The analysis presented next is based on the adopted elements of the City's General Plan. The project would be consistent with the following policies and goals of the City's General Plan and its 2013 Circulation Element Update (City of Half Moon Bay 2013):

- **Goal 1:** Develop a functional and cohesive transportation network.
    - *Policy 1-4:* Integrate area-wide drainage plans and water, sewer, and other utility lines into the planning and design of intersection and/or roadway improvements and any new roadways to support new residential or commercial uses in the city.
- **Goal 2:** Maintain safe and convenient vehicle access.
- **Goal 3:** Create and maintain Complete Streets.
    - *Policy 3-1:* Work collaboratively with Caltrans to provide safe and enhanced bicycle and pedestrian facilities crossings and along Highway 1 and SR 92
    - *Policy 3-2:* Promote the development of projects that incorporate all modes of transportation, accommodate all mode users, and facilitate balanced mode share use within the context of the community and the roadway facility purpose.

- *Policy 3-4:* Where appropriate, promote the installation of Intelligent Transportation Systems infrastructure to advance interoperable traffic signal controller systems, traveler information systems, parking management systems, and bicycle/ pedestrian/vehicle detection systems that support all modes of travel on the roadways.

- *Policy 3-6:* Provide programs and funding for maintenance and operations of the roadway network elements, including maintenance of pavement and bridge surfaces, maintaining traffic signal operations, restriping of bicycle and pedestrian pavement markings, and replacing failing bicycle/pedestrian/vehicle detectors.

- **Goal 4:** Foster and support pedestrian and bicycle travel.

The proposed improvements to the highway facilities of SR 1 and SR 92, and to the bicycle and pedestrian facilities (crosswalks, sidewalks, and curb cuts) would align with the goals and policies of the City's General Plan and 2013 Circulation Element Update. Therefore, the project would be consistent with this plan.

The impact would be less than significant. No additional mitigation is required.

2.2.12 Mineral Resources

Question	CEQA Determination
a) Would the project 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
b) Would the project 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

2.2.12.1 CEQA Significance Determinations for Mineral Resources

a) Would the project 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?, and
b) Would the project 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?

The project would not be constructed in a known mineral resource zone. Project construction would take place in previously disturbed soil within the existing Caltrans right-of-way. According to the United States Geological Survey Mineral Resources On-Line Spatial Data, the project area is not close to or on a known mineral resource (USGS 2022). No impacts would occur.

2.2.13 Noise

Question	CEQA Determination
a) Would the project result in 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?	Less than Significant Impact
b) Would the project result in generation of excessive groundborne vibration or groundborne noise levels?	Less than Significant Impact
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	Less than Significant Impact

2.2.13.1 CEQA Significance Determinations for Noise

a) Would the project result in 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?

The project would be constructed within Caltrans' right-of-way, in both urban and rural areas of San Mateo County. The closest sensitive noise receptors would be residences and commercial businesses in the Moss Beach, El Granada, and Miramar areas of Half Moon Bay, within 0.5 mile north and south of project locations. The project would not be a Type I project under 23 CFR 772, because it would not alter the location of a roadway, alter the horizonal or vertical alignment of a roadway, or increase the number of through-traffic lanes on a roadway. It would not be a Type II project, because it would not be a project for noise abatement on an existing highway. Therefore, the project would be a Type III project; no significant operational noise effects are anticipated, and no noise study would be required.

The project could result in increases in noise during construction. However, the construction noise would be temporary and intermittent, and would be within acceptable levels for construction activity. In addition, in accordance with 2018 Caltrans Standard Specifications Section 14-8.02, noise from construction activities would not exceed a maximum noise level of 86 A-weighted decibels at a distance of 50 feet from 9 p.m. to 6 a.m.

The impact would be less than significant. No additional mitigation is required.

b) Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

The project would cause no long-term increase in groundborne vibration or noise. During construction, the project would cause minimal, temporary, and intermittent groundborne vibration and groundborne noise at levels that would be less than excessive. The impact would be less than significant. No additional mitigation is required.

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?

Half Moon Bay Airport is adjacent to SR 1 in the project area, between Capistrano Road and Marine Boulevard (PM 33.1 and PM 34.8). A small portion of SR 1 is in the 60 Community Noise Equivalent Level (CNEL) contour for the airport, and within the 2032 estimated 60 CNEL noise level contour (CCAG 2014). CNEL is the weighted average sound level over a 24-hour period with a penalty of 5 decibels (dB) added between 7 p.m. and 10 p.m. and a penalty of 10 dB added for nighttime hours between 10 p.m. and 7 a.m. These penalties are applied as a weighting factor to address greater noise sensitivity during those typically quieter periods. A CNEL of 65 or greater typically is considered unacceptable for a residential neighborhood. The project would not affect the CNEL contours determined in the 2014 CCAG report. Project construction workers within the 60 CNEL noise contour for the airport during construction would be working adjacent to live traffic, operating heavy equipment at times, and using all appropriate health and safety personal protective equipment necessary and appropriate for the work being conducted. The project would not expose people residing or working in the project area to excessive noise levels. The impact would be less than significant. No additional mitigation is required.

2.2.14 Population and Housing

Question	CEQA Determination
a) Would the project 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
b) Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	No Impact

2.2.14.1 CEQA Significance Determinations for Population and Housing

a) Would the project 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)?

The project would not involve construction of new residential buildings or businesses, and it would not extend transportation facilities that could induce population growth. Project activities would be limited to improving the existing transportation facility, increasing accessibility to existing transit stops, and enhancing nonmotorized modes of transportation. No impact would occur.

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

The project would not remove or displace people or housing and would not necessitate construction of replacement housing elsewhere. No impact would occur.

2.2.15 Public Services

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, to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:

Question	CEQA Determination
a) Fire protection?	No Impact
b) Police protection?	No Impact
c) Schools?	No Impact
d) Parks?	No Impact
e) Other public facilities?	No Impact

2.2.15.1 CEQA Significance Determinations for Public Services

a), b), c), d), and e)

Temporary traffic delays would be possible during project construction, when lane closures and detours are implemented, which could affect emergency services. However, as discussed in Section 2.2.17, a TMP would be prepared to reduce temporary effects on traffic, and to ensure that access is maintained for emergency service providers and first responders.

The project would not include elements that would induce population growth, as discussed in Section 2.2.14. No new demand for governmental facilities and services, such as fire protection, police protection, schools, or parks, would occur because of the project. No impact would occur.

2.2.16 Recreation

Question	CEQA Determination
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?	Less than Significant Impact
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

2.2.16.1 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?

SR 1 in the project area supports access to nearby Half Moon Bay State Beach, Wavecrest Open Space, J V Fitzgerald Marine Reserve, and Pillar Point Bluff. Half Moon Bay State Beach is owned and managed by the California Department of Parks and Recreation. Wavecrest Open Space is owned and managed by the Peninsula Open Space Trust. Both the J V Fitzgerald Marine Reserve and Pillar Point Bluff are owned and managed by the San Mateo County Parks Department. In general, the parks are open from 8 a.m. until sunset and allow hiking, bicycling, horseback riding, and walking dogs on leash.

The project would provide safety improvements and multi-modal transportation enhancements along SR 1. The project would not include features that would directly or indirectly result in an increase in the use of nearby recreational facilities. The project would not increase the use of neighborhood parks, regional parks, or other nearby recreational facilities, and therefore it would not be anticipated to cause or accelerate deterioration of those facilities. The impact would be less than significant. No additional mitigation is required.

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?

The project would not include recreational facilities or require construction or expansion of recreational facilities that could have an adverse physical effect on the environment. No impact would occur.

2.2.17 Transportation

Question	CEQA Determination
a) Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	Less than Significant Impact
b) Would the project conflict or be inconsistent with State CEQA Guidelines Section 15064.3, subdivision (b)?	Less than Significant Impact
c) Would the project 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
d) Would the project result in inadequate emergency access?	Less than Significant Impact

In the project area, SR 1 is a two-lane undivided highway with two 12-foot lanes and 1- to 4-foot typical outside shoulders. SR 92 in the project area is a four-lane divided highway of similar shoulder width.

2.2.17.1 CEQA Significance Determinations for Transportation

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

The project would improve and enhance existing transit, roadway, bicycle, and pedestrian facilities in the project area. The project is being planned and designed to be constructed and operated to meet current Caltrans' Complete Streets policies, in accordance with Director's Policy 37 (Caltrans 2021g). The project would be consistent with all applicable plans, including the Caltrans District 4 Bike Plan, Caltrans District 4 Pedestrian Plan, San Mateo County General Plan Transportation Policies, CCAG San Mateo County Comprehensive Bicycle and Pedestrian Plan, City of Half Moon Bay General Plan Circulation Element, and City of Half Moon Bay Bicycle and Pedestrian Master Plan. The project development process ensures consistency with these plans through partnerships and coordination with local and regional development agencies.

The project would enhance and improve accessibility at existing San Mateo County Transit District (SamTrans) facilities along SR 1, by paving transit stops at locations where no paved surface currently exists and connecting them via sidewalk to existing sidewalks. These enhancements would improve accessibility for all users and would be consistent with Caltrans' Complete Streets policies. SamTrans operates two bus routes in the project area: Routes 17 and 18. Route 17 provides weekday and weekend service from Linda Mar to Pescadero, and Route 18 provides school day service from Miramontes Point Road to Main Street in Half Moon Bay. Caltrans would coordinate with SamTrans during construction to minimize the potential for delays to bus service along both routes.

Caltrans is proposing bicycle lane and intersection improvements throughout the project area, including striping Class II bike lanes, completing connections for Class I bike paths, and improving intersections through curb improvements and crosswalk installations, as described in Sections 1.4.8 and 1.4.9 and shown on Figure 1-7. Caltrans would coordinate with the County of San Mateo on recommendations provided in their Connect the Coastside Plan (San Mateo County 2021) where appropriate for the project. Caltrans would address temporary

impacts on existing facilities during construction by coordinating with local users through the project's TMP.

The project would improve accessibility for active multimodal transportation by providing a safer and more efficient means of traveling the SR 1 corridor in the project area. The project would not be anticipated to conflict with any existing or planed active transportation facilities. The impact would be less than significant. No additional mitigation is required.

b) Would the project conflict or be inconsistent with State CEQA Guidelines Section 15064.3, subdivision (b)?

Section 15064.3, subdivision (b) of the state CEQA guidelines specifies the criteria for analyzing transportation impacts. According to the regulation, transportation projects that reduce or have no impact on VMT should be presumed to cause a less-than-significant transportation impact. The Caltrans' Transportation Analysis under CEQA (TAC) guidance document provides screening criteria for determining whether a project would increase capacity (Caltrans 2020a). Based on the criteria listed under Section 5.1.1 of the TAC, the project is not likely to lead to a measurable and substantial increase in vehicle travel. The impact would be less than significant. No additional mitigation is required.

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

The project would not alter the existing geometric design of SR 1 and SR 92. Project components would be limited to rehabilitating pavement, upgrading highway systems, and implementing Complete Streets elements. Therefore, no hazards are anticipated because of a geometric design feature. No impact would occur.

d) Would the project result in inadequate emergency access?

The project would have temporary traffic impacts on roadway access for all users during project construction, from lane closures and detours that may affect emergency vehicle access.

Proposed Avoidance and Minimization Measure

Caltrans proposes the following measure to avoid and minimize impacts on traffic and emergency vehicles.

TRANS-01: Development of a Transportation Management Plan

Caltrans will develop a project-specific TMP during the final design phase of the project. The TMP will be prepared in accordance with Caltrans requirements and guidelines to minimize construction-related delays and impacts on emergency vehicles and the traveling public. The TMP will include the following provisions:

- Coordination with San Mateo County, the City of Half Moon Bay, and any other applicable local jurisdictions for notification of closures and detours
- Coordination with the California Highway Patrol and other local law enforcement

- Use of portable changeable message signs, the California Highway Patrol construction zone enhanced enforcement program, one-way traffic controls, and flaggers
- Continued access for emergency services
- Continued access to any residential driveways

The project would incorporate the project features and avoidance and minimization measure into the project design, and would have less-than-significant impact.

2.2.18 Tribal Cultural Resources

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC 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:

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

This section references the Section 106 Closeout Memorandum and area of potential effects prepared for the project (Caltrans 2021e; Caltrans 2021i).

2.2.18.1 CEQA Significance Determinations for Tribal Cultural Resources

a), and b) 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 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.

Caltrans, pursuant to Section 106 of the National Historic Preservation Act of 1966, determined that a Finding of No Adverse Effect with Standard Conditions – ESA (Caltrans 2021e) is appropriate for the project, as discussed in Section 2.2.5. Caltrans contacted the Native American Heritage Commission (NAHC) on January 29, 2021, requesting a review of their Sacred Lands File to determine whether any known cultural resource sites are in or near the APE of the project. The results of the Sacred Lands File were positive, and a list of Native American contacts with potential interest or information regarding the APE was provided. Initial consultation outreach in compliance with Section 106 of the National Historic Preservation Act and AB 52 regarding the project was sent to all Native American contacts provided by the NAHC on January 28, 2021. One response was received on March 2, 2021, from the Indian Canyon Mutsun Band of Costanoan. The tribe indicated that the project area is adjacent to an archaeological site identified as culturally sensitive and recommended that a Native American monitor and an archaeological monitor be present on site at all times for any disruptive surveys or earth-moving activities, and to also provide cultural sensitivity training at the beginning of the project. The tribe was invited to participate in the subsurface archaeological testing conducted by the Caltrans Office of Cultural Resources on August 12, 2021; however, no response was received. Follow-up emails were sent to all other contacts on July 12 and 13, 2021; however, no responses have been received to-date. Consultation is ongoing throughout the life of the project.

Caltrans proposes avoidance and minimization measures CUL-01, CUL-02, and CUL-03 in Section 2.2.5 and project features (shown in Table 1-2) that would protect any historical or tribal resources that occur in the project area. With implementation of project features and the described avoidance and minimization measure incorporated into the project design, the impact would be less than significant.

2.2.19 Utilities and Service Systems

Question	CEQA Determination
a) Would the project 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?	No Impact
b) Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	No Impact
c) Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	No Impact
d) Would the project 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
e) Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	No Impact

2.2.19.1 CEQA Significance Determinations for Utilities and Service Systems

a), b), c), d), e)

The project would not require installation of new utilities but would connect to existing utilities, to power closed-circuit television cameras, fixed-intersection cameras, and traffic monitoring systems. Existing utilities in the project area may require temporary or permanent relocation. Any interruption of service associated with utility connections or relocations during construction would be temporary and short-term. If necessary, underground utility verification (known as potholing) would be completed during the design phase.

The project would not include new development or uses that would require water supplies. The project would generate a small amount of solid waste during construction. However, Caltrans would comply with all federal, state, and local management and reduction statutes and regulations related to solid waste disposal.

No impacts would occur.

2.2.20 Wildfire

If located in or near State Responsibility Areas or lands classified as Very High Fire Hazard Severity Zones, would the project:

Question	CEQA Determination
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	Less than Significant Impact
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	No Impact
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
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

2.2.20.1 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?

The project area is entirely in Local Responsibility Areas, classified as Moderate and Very High Fire Severity Zones (CAL FIRE 2007). The project would be subject to San Mateo County's EOP, as discussed in Section 2.2.9. The EOP provides guidelines for emergency response planning, preparation, training, and execution throughout the county. The project would cause short-term construction-related traffic on SR 1. Caltrans would prepare a TMP to maintain the flow of traffic during construction, and to ensure priority access for emergency vehicles through the project area. Therefore, a substantial reduction in emergency response times is not expected; after construction, no changes would occur to the existing capacity of the roadway that would affect an emergency response plan or evacuation plan. The impact would be less than significant. No additional mitigation is required.

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?, and

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?

The project would not affect occupied structures. The project would not require installation of associated infrastructure that would exacerbate fire risk in the project area. During

construction, measures for minimizing fire risks would be incorporated and would follow state and federal fire regulations. No impacts would occur.

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?

Frequent landslides and erosion are known to occur along SR 1. Implementation of erosion control measures would be incorporated into the design of the project, in compliance with all applicable regulations or as required by environmental permits issued to the project by state and federal regulatory agencies. The project's construction and operations would not alter the existing topography or create slopes that would increase susceptibility to wildfire hazards, including downslope or downstream flooding, or landslides. No impact would occur.

2.2.21 Mandatory Findings of Significance

Question	CEQA Determination
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	Less than Significant Impact
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	Less than Significant Impact
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	No Impact

2.2.21.1 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?

The project does not have the potential to substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or substantially reduce the number or restrict the range of a rare or endangered plant or animal species; nor does it have the potential to affect important examples of California history or prehistory. The project would have less-than-significant impacts on biological or cultural resources because implementation of project features and avoidance and proposed minimization measures would address any potential impacts in the project area. Caltrans is proposing avoidance and minimization measure BIO-11 specifically to avoid impacts to the rare plant population of Ornduff's meadowfoam that is known to occur in the project area. The impact would be less than significant.

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)?

The project would be constructed in the vicinity of other past and planned Caltrans projects, as shown in Table 2-6. No capacity-increasing projects are in the project vicinity. In addition, San Mateo County is evaluating the feasibility of projects and alternatives identified in the Highway 1 Safety and Mobility Improvement Study to relieve congestion, improve throughput, and enhance safety for motorists, bicyclists, and pedestrians along a 7-mile stretch of SR 1 in San Mateo County, which includes the project area (San Mateo County 2012). The potential improvements of this endeavor include designated pedestrian crossings, left-turn lanes, acceleration lanes, and raised medians.

Table 2-6 Past and Planned Projects in the Region

Project Number and Title	Project Location	Project Type	Construction Year
EA 04 2K880 State Route (SR) 1 Traffic Operational Systems Improvement Project	SR 1 post mile (PM) 26.43/ 47.20	Provide emergency and incident-management-related information to the traveling public and Caltrans	2022
EA 04 0Q610 San Mateo SR 1 Safety Barrier Project	SR 1 PM 36.49/ 38.31	Traffic safety project to reduce run-off-the-road incidents	Anticipated to be 2024 to 2025
EA 04 2J790 SR 1 and SR 84 Structures and Scour Mitigation Project	SR 1 PM 28.9 and SR 84 PM 7.55	Retrofit scour critical bridges at the Pilarcitos Creek Bridge No. 35 0139L/R and on SR 84 at San Gregorio Creek Bridge No. 35 0166	Anticipated to be 2022 to 2023
EA 04 0Q670 Storm Drain System Repair	SR 1 PM 36.2	Repair damaged storm drain and restore eroded embankment near Montara, south of 9th Street	2023
EA 04 0Q440 Best Management Practices	SR 1 PM 44.0/ 48.0	Construct permanent best management practices to achieve statewide National Pollutant Discharge Elimination System permit compliance units for trash capture and Total Maximum Daily Load	2023
EA 1Q130 – Gray Whale Cove Pedestrian Crossing	SR 1 PM 37.8/ 38.0	Modifications to the Gray Whale Cove State Beach parking lot off SR 1 and the pedestrian crossing from the parking lot across the roadway to the beach, to improve pedestrian safety for beach users	N/A

The cumulative impact would be less than significant, and no additional mitigation is required.

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

The project is not anticipated to cause any additional substantial direct or indirect adverse impacts on human beings from the existing transportation facilities, and proposes features that would serve to protect and enhance the safety of users. No impact would occur.

2.3 Climate Change

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the Earth's climate system. The Intergovernmental Panel on Climate Change, established by the United Nations and World Meteorological Organization in 1988, is devoted to GHG emissions reduction and climate change research and policy. Climate change in the past has generally occurred gradually over millennia, or more suddenly in response to cataclysmic natural disruptions. The research of the Intergovernmental Panel on Climate Change and other scientists over recent decades, however, has unequivocally attributed an accelerated rate of climatological changes over the past 150 years to GHG emissions generated from the production and use of fossil fuels.

Human activities generate GHGs consisting primarily of CO_2, CH_4, N_2O, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, and various hydrofluorocarbons (HFCs). CO_2 is the most abundant GHG; although it is a naturally occurring and necessary component of Earth's atmosphere, fossil-fuel combustion is the main source of additional, human-generated CO_2 that is the main driver of climate change. In the United States and in California, transportation is the largest source of GHG emissions, mostly CO_2.

The impacts of climate change are already being observed in the form of sea-level rise, drought, extended and severe fire seasons, and historic flooding from changing storm patterns. The most important strategy to address climate change is to reduce GHG emissions. Additional strategies are necessary to mitigate and adapt to these impacts. In the context of climate change, "mitigation" involves actions to reduce GHG emissions to lessen adverse impacts that are likely to occur. "Adaptation" is planning for and responding to impacts to reduce vulnerability to harm, such as by adjusting transportation design standards to withstand more intense storms, heat, and higher sea levels. This analysis will include a discussion of both in the context of this transportation project.

2.3.1 Regulatory Setting

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

2.3.1.1 Federal

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

NEPA (42 USC Part 4332) requires federal agencies to assess the environmental effects of their proposed actions prior to making a decision on the action or project.

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

The federal government has taken steps to improve fuel economy and energy efficiency to address climate change and its associated effects. The most important of these was the Energy Policy and Conservation Act of 1975 (42 USC Section 6201), as amended by the Energy Independence and Security Act of 2007; and Corporate Average Fuel Economy (CAFE) Standards. This act established fuel economy standards for on-road motor vehicles sold in the United States. The United States Department of Transportation's National Highway Traffic and Safety Administration sets and enforces the CAFE standards based on each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the United States. The United States Environmental Protection Agency (U.S. EPA) calculates average fuel economy levels for manufacturers, and also sets related GHG emissions standards under the Clean Air Act. Raising CAFE standards leads automakers to create a more fuel-efficient fleet, which improves our nation's energy security, saves consumers money at the pump, and reduces GHG emissions (U.S. DOT 2014).

U.S. EPA published a final rulemaking on December 30, 2021, that raised federal GHG emissions standards for passenger cars and light trucks for model years 2023 through 2026, increasing in stringency each year. This rulemaking revised lower emissions standards that were established in June 2020 for model years 2021 through 2026 in the Safer Affordable Fuel-Efficient Vehicles Rule Part Two. The updated standards will result in avoiding more than 3 billion tons of GHG emissions through 2050 (U.S. EPA 2021a).

2.3.1.2 State

California has been innovative and proactive in addressing GHG emissions and climate change by passing multiple Senate and Assembly bills and executive orders (EOs) including, but not limited to, the following:

- **EO S-3-05 (June 1, 2005):** The goal of this EO is to reduce California's GHG emissions to (1) year 2000 levels by 2010, (2) year 1990 levels by 2020, and (3) 80 percent below year 1990 levels by 2050. This goal was further reinforced with the passage of AB 32 in 2006 and SB 32 in 2016.

- **AB 32, Chapter 488, 2006, Núñez and Pavley, The Global Warming Solutions Act of 2006:** AB 32 codified the 2020 GHG emissions reduction goals outlined in EO S-3-05, while further mandating that ARB create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." The Legislature also intended that the statewide GHG emissions limit continue in existence and be used to maintain and continue reductions in emissions of GHGs beyond 2020 (H&SC Section 38551(b)). The law requires ARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

- **EO S-01-07 (January 18, 2007):** This order sets forth the low carbon fuel standard (LCFS) for California. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by the year 2020. ARB readopted the LCFS regulation in September 2015, and the changes went into effect on January 1, 2016. The program establishes a strong framework to promote the low-carbon fuel adoption necessary to achieve the governor's 2030 and 2050 GHG reduction goals.

- **SB 375, Chapter 728, 2008, Sustainable Communities and Climate Protection:** This bill requires ARB to set regional emissions reduction targets for passenger vehicles. The Metropolitan Planning Organization (MPO) for each region must then develop a "Sustainable Communities Strategy" (SCS) that integrates transportation, land-use, and housing policies to plan how it will achieve the emissions target for its region.

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

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

- **EO B-30-15 (April 2015):** This order establishes an interim statewide GHG emission reduction target of 40 percent below 1990 levels by 2030 to ensure that California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050. It further orders all state agencies with jurisdiction over sources of GHG emissions to implement measures, pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 GHG emissions reductions targets. It also directs ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent ($MMTCO_2e$). (GHGs differ in how much heat each traps in the atmosphere, called global warming potential, or GWP. CO_2 is the most important GHG, so amounts of other gases are expressed relative to CO_2, using a metric called "carbon dioxide equivalent," or CO_2e. The GWP of CO_2 is assigned a value of 1, and the GWP of other gases is assessed as multiples of CO_2.) Finally, it requires the Natural Resources Agency to update the state's climate adaptation strategy, Safeguarding California, every 3 years, and to ensure that its provisions are fully implemented.

- **SB 32, Chapter 249, 2016:** This bill codifies the GHG reduction targets established in EO B-30-15 to achieve a mid-range goal of 40 percent below 1990 levels by 2030.

- **SB 1386, Chapter 545, 2016:** This bill declared "it to be the policy of the state that the protection and management of natural and working lands … is an important strategy in meeting the state's GHG reduction goals, and would require all state agencies, departments, boards, and commissions to consider this policy when revising, adopting, or establishing policies, regulations, expenditures, or grant criteria relating to the protection and management of natural and working lands."

- **SB 743, Chapter 386 (September 2013):** This bill changes the metric of consideration for transportation impacts pursuant to CEQA from a focus on automobile delay to alternative methods focused on VMT. This is intended to promote the state's goals of reducing GHG emissions and traffic-related air pollution, and promoting multimodal transportation while balancing the needs of congestion management and safety.

- **SB 150, Chapter 150, 2017, Regional Transportation Plans (RTPs):** This bill requires ARB to prepare a report that assesses progress made by each metropolitan

planning organization in meeting their established regional GHG emission reduction targets.

- **EO B-55-18 (September 2018):** This order sets a new statewide goal to achieve and maintain carbon neutrality no later than 2045. This goal is in addition to existing statewide targets of reducing GHG emissions.

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

2.3.1.3 Environmental Setting

The segment of SR 1 in the project area is in Half Moon Bay and unincorporated areas in San Mateo County. This segment of SR 1 is in a semi-rural environment and is adjacent to both undeveloped and developed areas. SR 1 provides access to beaches, state parks, and national recreation areas. The majority of GHG emissions in the project area are from vehicle use.

The BAAQMD's 2017 clean air plan addresses GHG emissions in the project region. U.S. EPA is responsible for documenting GHG emissions nationwide; the ARB does so for the state, as required by H&SC Section 39607.4.

2.3.1.4 Greenhouse Gas Inventories

A GHG emissions inventory estimates the amount of GHGs discharged into the atmosphere by specific sources over a period of time, such as a calendar year. Tracking annual GHG emissions allows countries, states, and smaller jurisdictions to understand how emissions are changing and what actions may be needed to attain emission reduction goals. Cities and other local jurisdictions may also conduct local GHG inventories to inform their GHG reduction or climate action plans.

National GHG Inventory

The annual GHG inventory submitted by the U.S. EPA to the United Nations provides a comprehensive accounting of all human-produced sources of GHGs in the United States. The 1990 2019 inventory found that overall GHG emissions were 6,558 million metric tons in 2019, down 1.7 percent from 2018 but up 1.8 percent from 1990 levels. Of these, 80 percent were CO_2, 10 percent were CH_4, and 7 percent were N_2O; the balance consisted of fluorinated gases. CO_2 emissions in 2019 were 2.2 percent less than in 2018, but 2.8 percent more than in 1990. As shown on Figure 2-1, the transportation sector accounted for 29 percent of GHG emissions in the United States in 2019 (U.S. EPA 2021b, 2021d).

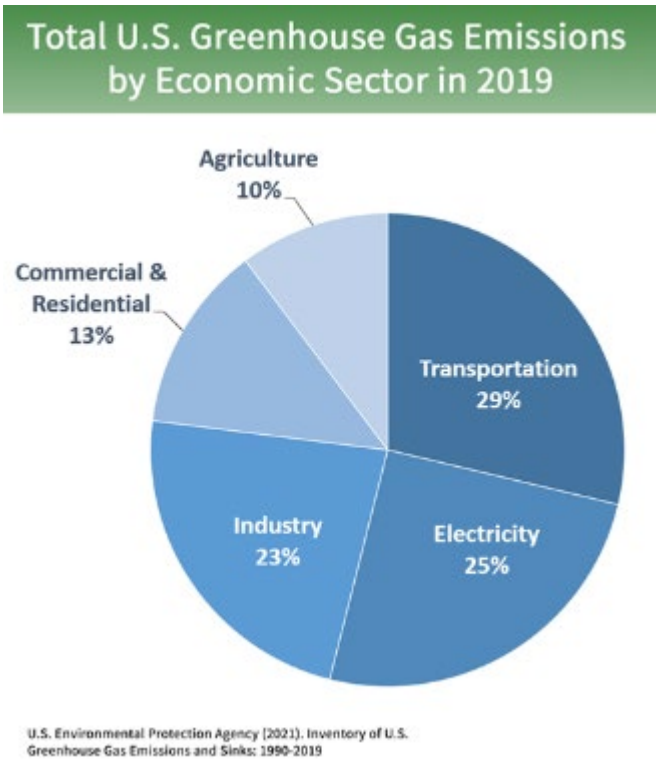

Figure 2-1 U.S. 2019 Greenhouse Gas Emissions

Source: U.S. EPA 2021c

State GHG Inventory

ARB collects GHG emissions data for transportation, electricity, commercial/residential, industrial, agricultural, and waste management sectors each year. It then summarizes and highlights major annual changes and trends to demonstrate the state's progress in meeting its GHG reduction goals. The 2021 edition of the GHG emissions inventory reported emissions trends from 2000 to 2019. It found that total California emissions were 418.2 $MMTCO_2e$ in 2019, a reduction of 7.2 $MMTCO_2e$ since 2018 and almost 13 $MMTCO_2e$ below the statewide 2020 limit of 431 $MMTCO_2e$. The transportation sector (including intrastate aviation and off road sources) was responsible for about 40 percent of direct GHG emissions, a 3.5 $MMTCO_2e$ decrease from 2018 (Figure 2-2). Overall statewide GHG emissions declined from 2000 to 2019 despite growth in population and state economic output (Figure 2-3) (ARB 2021).

AB 32 required ARB to develop a Scoping Plan that describes the approach California will take to achieve the goal of reducing GHG emissions to 1990 levels by 2020, and to update it every 5 years. ARB adopted the first scoping plan in 2008. The second updated plan, California's 2017 Climate Change Scoping Plan, adopted on December 14, 2017, reflects the 2030 target established in EO B-30-15 and SB 32. The AB 32 Scoping Plan and the subsequent updates contain the main strategies California will use to reduce GHG emissions.

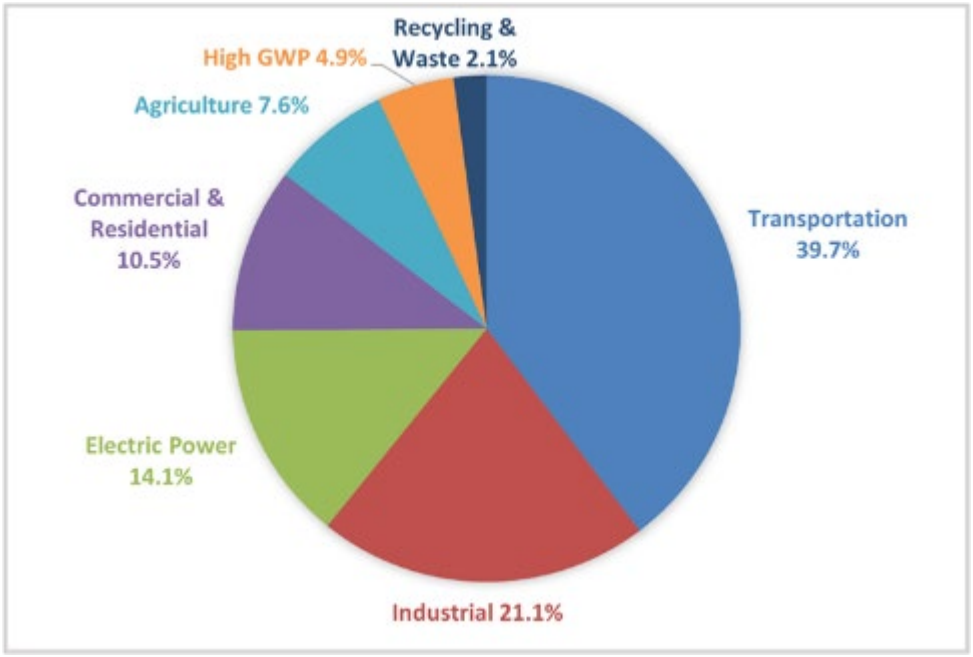

Figure 2-2 California 2018 Greenhouse Gas Emissions by Economic Sector

Source: ARB 2021

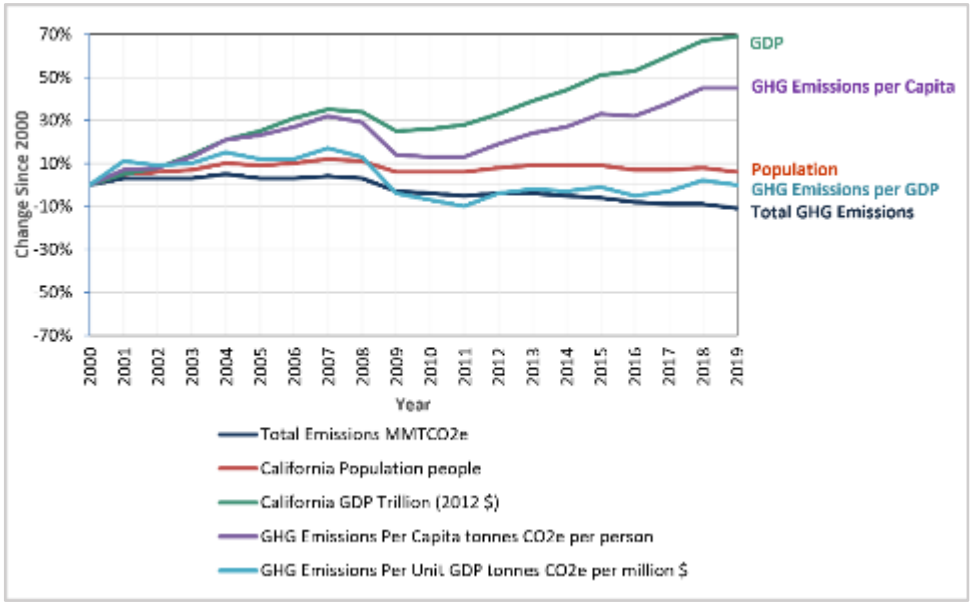

Figure 2-3 Change in California GDP, Population, and GHG Emissions Since 2000

Source: ARB 2021

2.3.1.5 Regional Plans

ARB sets regional targets for California's 18 MPOs to use in their RTP/SCS to plan future projects that would cumulatively achieve GHG reduction goals. Targets are set at a percent reduction of passenger vehicle GHG emissions per person from 2005 levels. The Metropolitan Transportation Commission (MTC) is the MPO and regional transportation planning agency for the project region, with GHG reduction targets of 10 percent by 2020 and 19 percent by 2035. The project would be included in the MTC RTP, Plan Bay Area 2050.

The 2017 clean air plan, *Spare the Air, Cool the Climate* (BAAQMD 2017), defines strategies for climate protection in the Bay Area that support goals laid out in Plan Bay Area 2050 (ABAG and MTC 2021). Those goals include transforming the transportation sector to reduce motor vehicle travel; promote zero-emissions vehicles and renewable fuels; adopt fixed- and flexible-route transit services; and support infrastructure and planning that enable a large share of trips by bicycling, walking, and transit. Local climate action plans also offer GHG reduction strategies.

San Mateo County adopted an energy efficiency climate action plan in 2013, with a GHG emissions reduction target of 17 percent below 2005 emissions levels by 2020. The climate action plan aligns with GHG emissions reduction goals and policies of the San Mateo County General Plan that focus on energy efficiency, waste reduction, and efficient land use in the unincorporated county (San Mateo County 2013a).

2.3.1.6 Project Analysis

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

The CEQA guidelines generally address GHG emissions as a cumulative impact due to the global nature of climate change (Pub. 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 GHGs must necessarily be found to contribute to a significant cumulative impact on the environment.

Operational Emissions

As stated in Section 2.2.17, the project would not be capacity increasing and is not expected to lead to a measurable and substantial increase in vehicle travel. This type of project generally causes minimal or no increase in operational GHG emissions. Because the project would not increase the number of travel lanes on SR 1, no increase in VMT would occur.

Although some GHG emissions during the construction period would be unavoidable, no increase in operational GHG emissions is expected.

Construction Emissions

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

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

GHG emissions are responsible for causing climate change. As discussed in Section 2.2.8, GHG emissions would be generated during project construction. Caltrans estimates that, over a construction period of 14 months, the total amount of CO_2 produced would be 516.01 tons. The project's total CO_2e emissions[1] (CO_2, CH_4, and N_2O) would be 476.38 metric tons.

Because GHG emissions associated with construction of this project are not substantial, this project is not expected to contribute a significant cumulative impact. Some GHG emissions may be associated with ongoing maintenance operations from the use of vehicles and gas or diesel equipment. Nonetheless, maintenance operations would occur periodically and are not expected to contribute significantly to GHG emissions.

All construction contracts include Caltrans Standard Specifications related to air quality. Sections 7-1.02A and 7-1.02C, Emissions Reduction, require contractors to comply with all laws applicable to the project and to certify they are aware of and will comply with all ARB emission reduction regulations. Section 14-9.02, Air Pollution Control, requires contractors to comply with all air pollution control rules, regulations, ordinances, and statutes. Certain common regulations, such as equipment idling restrictions, that reduce construction vehicle emissions also help reduce GHG emissions.

CEQA Conclusion

As stated in Section 2.2.8.1 above, the project would not lead to an increase in operational GHG emissions (i.e., increased emissions from vehicles in the project area); and short-term GHG emissions resulting from construction activities would not lead to long-term adverse effects. Therefore, the impact would be less than significant. the project Caltrans is firmly committed to implementing measures to help reduce GHG emissions. These measures are outlined in the following section.

[1] Gases are converted to CO_2e by multiplying by their GWP. Specifically, GWP is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period, relative to the emissions of 1 ton of CO_2.

2.3.2 Greenhouse Gas Emissions Reduction Strategies

2.3.2.1 Statewide Efforts

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

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

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

In addition, SB 1386 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 CO_2 from the atmosphere through biological processes and sequester the carbon in above- and below-ground matter.

Subsequently, Governor Gavin Newsom issued EO N-82-20 to combat the crises in climate change and biodiversity. This order instructs state agencies to use existing authorities and resources to identify and implement near- and long-term actions to accelerate natural removal of carbon and build climate resilience in our forests, wetlands, urban greenspaces, agricultural soils, and land conservation activities in ways that serve all communities and in particular low-income, disadvantaged, and vulnerable communities. To support this order, the California Natural Resources Agency released Natural and Working Lands Climate Smart Strategy Draft for public comment in October 2021.

2.3.2.2 Caltrans Activities

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

Climate Action Plan for Transportation Investments

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

California Transportation Plan

The CTP is a statewide, long-range transportation plan to meet our future mobility needs and reduce GHG emissions. It serves as an umbrella document for all the other statewide transportation planning documents. The CTP 2050 presents a vision of a safe, resilient, and universally accessible transportation system that supports vibrant communities, advances racial and economic justice, and improves public and environmental health. The plan's climate goal is to achieve statewide GHG emissions reduction targets and increase resilience to climate change. It demonstrates how GHG emissions from the transportation sector can be reduced through advancements in clean fuel technologies; continued shifts toward active travel, transit, and shared mobility; more efficient land use and development practices; and continued shifts to telework (Caltrans 2021a).

Caltrans Strategic *Plan*

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

Caltrans Policy Directives and Other Initiatives

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

2.3.2.3 Project-Level GHG Reduction Strategies

Implementation of Caltrans Standard Specifications—such as complying with air pollution control rules, regulations, ordinances, and statutes that apply to work performed under the project contract—and the use of construction BMPs would result in reducing GHG emissions from project construction activities.

In addition, with innovations such as longer pavement lives, improvement in traffic management, and changes in materials, construction-related GHG emissions that are produced during construction can be offset to some degree by longer intervals between

maintenance and rehabilitation activities. The following measures would be implemented for the project, to reduce GHG emissions and potential climate change impacts from the project:

- regular vehicle and equipment maintenance;
- limiting idling of vehicles and equipment on site;
- if practicable, recycling nonhazardous waste and excess material, and if recycling is not practicable, disposing the material; and
- using solar-powered signal boards, if feasible.

Caltrans Standard Specifications Sections 7-1.02A and 7-1.02C, Emissions Reduction, require contractors to comply with all laws applicable to the project, and to certify that they are aware of and would comply with all ARB emissions reduction regulations (see PF-AQ-03 in Table 1-2).

A TMP will be prepared during the design phase to minimize traffic disruptions from project construction. Minimizing traffic delays during construction will help reduce GHG emissions from idling vehicles (see avoidance and minimization measure TRANS-01).

BMPs for air quality will be incorporated during construction activities (e.g., limiting the idling of vehicles and equipment on site, and maintaining vehicles and equipment).

2.3.3 Adaptation

Reducing GHG emissions is only one part of an approach to addressing climate change. Caltrans must plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and their intensity, and in the frequency and intensity of wildfires. Flooding and erosion can damage or wash out roads; longer periods of intense heat can buckle pavement and railroad tracks; and 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.

2.3.3.1 Federal Efforts

Under NEPA Assignment, Caltrans is obligated to comply with all applicable federal environmental laws and FHWA NEPA regulations, policies, and guidance.

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

The United States Department of Transportation (U.S. DOT) Policy Statement on Climate Adaptation in June 2011 committed the federal Department of Transportation to "integrate

consideration of climate change impacts and adaptation into the planning, operations, policies, and programs of U.S. DOT 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).

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

2.3.3.2 State Efforts

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

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

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

In 2008, then-governor Arnold Schwarzenegger recognized the need when he issued EO S-13-08, focused on sea-level rise. Technical reports on the latest sea-level rise science were first published in 2010 and updated in 2013 and 2017. The 2017 projections of sea-level rise and new understanding of processes and potential impacts in California were incorporated into the State of California Sea-Level Rise Guidance Update in 2018. This EO also gave rise to the California Climate Adaptation Strategy (2009), updated in 2014 as Safeguarding California: Reducing Climate Risk (Safeguarding California Plan), which addressed the full range of climate change impacts and recommended adaptation strategies. The Safeguarding California Plan was updated in 2018 and again in 2021 as the California Climate Adaptation Strategy, incorporating key elements of the latest sector-specific plans such as the Natural and Working Lands Climate Smart Strategy, Wildfire and Forest Resilience Action Plan, Water Resilience Portfolio, and the CAPTI (described above). Priorities in the 2021 California Climate

Adaptation Strategy include acting in partnership with California Native American Tribes, strengthening protections for climate-vulnerable communities that lack capacity and resources, nature-based climate solutions, use of best available climate science, and partnering and collaboration to best leverage resources (California Natural Resources Agency 2021).

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

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

2.3.4 Caltrans Adaptation Efforts: Vulnerability Assessments

Caltrans completed climate change vulnerability assessments to identify segments of the state highway system that are vulnerable to climate change effects of precipitation, temperature, wildfire, storm surge, and sea-level rise.

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

2.3.5 Project Adaptation Analysis

The January 2018 *Caltrans Climate Change Vulnerability Assessments* for the District 4 region (Caltrans 2018), which covers the nine-county San Francisco Bay Area, was consulted regarding climate stressors in the project area. The report and accompanying Climate Change Vulnerability Assessment map tool (Caltrans 2017) identified the following climate change conditions for the project area for the analysis years 2025, 2055, and 2085.

2.3.5.1 Sea-Level Rise Analysis

The California Ocean Protection Council (OPC) provides the most current accepted estimates for sea-level rise in California. Projected sea-level rise based on the OPC State of California Sea Level Rise Guidance 2018 Update (OPC 2018) at the nearest tide gauge (San Francisco)—assuming a high emissions scenario to the end of the century (i.e., 2100), with a 1-in-20 (5 percent) probability—indicates that sea-level rise will rise to meet or exceed 4.4 feet above current conditions. To analyze how this level of rise would impact the project area, the NOAA Sea-Level Rise viewer (https://coast.noaa.gov/digitalcoast/tools/slr.html) and Point Blue's Our Coast Our Future viewer (https://ourcoastourfuture.org/hazard-map/) were used to review SR 1 in the project area. Both tools were examined using the nearest sea-level rise

scenario to the OPC projection (identified above) that was available in each viewer (5 feet of modeled sea-level rise above the current MHHW tidal elevation using the NOAA viewer, and 4.9 feet [with a 100-year storm event] using the Point Blue viewer). Caltrans reviewed the entire SR 1 corridor using both tools and determined that the project area is not subject to sea-level rise inundation at current tidal elevations and is not in an area that would be subject to inundation under the estimated potential sea-level increase by the end of the century under a scenario of reasonably likely sea level rise and storm surge.

Caltrans notes that Surfer's Beach adjacent to SR 1 in the community of El Granada is vulnerable to erosion and wave run up at locations under the sea level rise scenarios examined for this analysis. However, the projected sea level rise scenario to the end of the century would extend beyond the service life of the proposed pavement work at this location. In the projected scenarios reviewed for this analysis, there is potential for inundation of the beach and pedestrian path on the west side of SR 1 by end of century. Low levels of inundation are projected to skirt the SR 1 shoulder at Coronado Street by the year 2100. Flood risk management at Surfer's Beach to address inundation of these adjacent features over the long term would require substantial shoreline protection efforts that are outside the purpose and need, and the service life of the work proposed for the project. Caltrans welcomes coordination and expects to participate in discussions with stakeholder groups to identify long term solutions to address sea level rise at Surfer's Beach that may also affect the existing transportation facilities.

Based on Caltrans review, no direct impacts on transportation facilities from sea-level rise are anticipated from the project.

2.3.5.2 Floodplains

Three FEMA Flood Insurance Report Maps, all dated August 2, 2017, overlap the project area. These include map numbers 06081C0119F, 06081C0138F, and 06081C0252F. The project is not expected to have any impact on the base floodplains that are identified in the maps.

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Chapter 3 Comments and Coordination

Early and continuing coordination with the general public and public agencies is an essential part of the environmental process. This helps planners to determine the necessary scope of environmental documentation and the level of analysis required; and to identify potential impacts, avoidance and minimization measures, and related environmental requirements. Consultation and public participation for this project will be accomplished through a variety of formal and informal methods. This chapter summarizes the results of Caltrans' preliminary efforts to fully identify, address, and resolve project-related issues through early and continuing coordination.

3.1 Consultation and Coordination with Public Agencies

3.1.1 United States Fish and Wildlife Service Consultation Summary

Caltrans is the lead federal agency for Section 7 consultation. Consultation with USFWS has not begun yet. Official species lists were acquired on April 21, 2022 (Appendix D).

Designated critical habitat is presented in the BSA for California red-legged frog, and the project may have indirect adverse effects on California red-legged frog and San Francisco garter snake. Caltrans has made the following preliminary determinations for USFWS jurisdictional resources:

- the project *may affect, but is not likely to adversely affect,* California red-legged frog;
- the project *may affect, but is not likely to adversely affect*, federally designated critical habitat for California red-legged frog; and
- the project *may affect, but is not likely to adversely affect*, San Francisco garter snake.

A Biological Assessment is being prepared, pursuant to Section 7 of FESA, for potential project effects on California red-legged frog. Take (including harassment, harm, wound, and kill) is anticipated with project implementation. No effects on any other listed, candidate, or proposed wildlife species are anticipated. Caltrans biologists have worked closely with project engineers to limit the size and scope of the project. The project is proposing specific avoidance and minimization measures that would be implemented to reduce impacts on listed, candidate, and proposed wildlife species and their habitats (Appendix C). By implementing these measures, Caltrans anticipates minimal adverse direct impacts on California red-legged frog and its habitat, and San Francisco garter snake.

3.1.2 National Marine Fisheries Service Consultation Summary

Caltrans obtained official National Marine Fisheries Service (NMFS) species lists on April 21, 2022 (Appendix D) The project overlaps with several waterways that may or are known to support federally listed California Central Coast DPS steelhead (*Oncorhynchus mykiss irideus*) and its critical habitat. No other federally listed fish species have potential to occur in the project area. Caltrans has identified in the BSA two waterways that are known to support steelhead (Pilarcitos Creek and Arroyo Leon), three waterways that may support steelhead (Frenchman's Creek, Denniston Creek, and Deer Creek), and two waterways that are not likely to support steelhead (Arroyo de en medio and an unnamed tributary to Denniston

Creek). The actions proposed by the project are not anticipated to impact individuals or habitat for NMFS regulated species. Caltrans has determined that the project would have no effect on steelhead or its critical habitat, and Section 7 consultation with NMFS is not required.

Caltrans had determined that NMFS-regulated EFH is present in the Pilarcitos Creek BSA for Coho salmon. However, the project would have no effect on Coho salmon. Work in the vicinity of this waterway would be limited to guardrail replacement in the current footprint of road shoulder areas, and there would be no impacts to aquatic or riparian habitat at those locations. Implementation of the project features would prevent siltation or water quality degradation from impacting EFH. No effects to EFH are anticipated, and consultation with NMFS will not be needed.

3.1.3 California Department of Fish and Wildlife Consultation Summary

State-listed species that have the potential to occur in the BSA include San Francisco garter snake. Coordination with CDFW will occur during the project planning phase, as part of a CFGC Section 1602 Lake and Streambed Alteration Agreement. No state-level take of CESA species is anticipated.

3.1.4 Coastal Zone Coordination

As stated in Section 2.2.11, the project is under the jurisdiction of the CCC, San Mateo County LCP (San Mateo County 2013b), and City of Half Moon Bay local coastal land use plan (City of Half Moon Bay 2020).

Caltrans' coordination in the Coastal Zone has included discussing potential locations for project components with various public agencies. Caltrans had a discussion with the City of Half Moon Bay regarding potential variable message sign locations that were previously requested by the City along SR 92. This discussion was held when variable message signs were still being considered by the project. Variable message signs on SR1 and SR 92 have been removed from the project's Build Alternative design.

On September 23, 2021, Caltrans hosted a joint preliminary stakeholder outreach meeting to provide a summary of the project, as well as the nearby San Mateo SR 1 Safety Barrier Project (EA 0Q610/Project ID 0418000123). Attendees included representatives from the following agencies:

- CCC
- San Mateo County
- City of Half Moon Bay
- Midcoast Community Council
- Half Moon Bay Coastside Chamber of Commerce

Caltrans presented an overview of both projects and solicited feedback and questions from the meeting attendees. Attendees voiced both support and concerns, and asked questions regarding the project components. Caltrans will continue to coordinate with all stakeholders as the project moves forward.

On March 28, 2022, Caltrans hosted a follow-up stakeholder outreach meeting to provide updates on the project ahead of the public circulation of the draft environmental document. Attendees included representatives from the following offices and agencies:

- The Office of Assemblymember Kevin Mullin
- San Mateo County Sheriff's Department
- California Department of Forestry and Fire Protection (CAL FIRE)
- CCC
- San Mateo County
- City of Half Moon Bay
- Midcoast Community Council
- Half Moon Bay Coastside Chamber of Commerce

Caltrans gave a slide presentation that included an overview of the 0Q130 project scope, visual simulations, schedule, and budget to coastal stakeholder groups for follow-up outreach and project coordination. The second half of the meeting was open discussion. Attendees asked questions about project components, and voiced concerns regarding the proposed variable message signs. Caltrans determined that it would carry this project forward without including the variable message signs, but will continue to consider them on future efforts along the SR 1 corridor. Caltrans will continue to coordinate with all stakeholders as the project moves forward.

On April 13 and 14, 2022, Caltrans held three separate meetings with stakeholder groups, including the CCC, CAL FIRE, the California State Assembly, California Highway Patrol, San Mateo County Planning Department, the City of Half Moon Bay, the Half Moon Bay Coastside Chamber of Commerce, and the Midcoast Community Council. These meetings were held to receive feedback on the project.

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This document was prepared by the following Caltrans staff and consultants.

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Chapter 6 References

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6.1 List of Technical Studies

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Appendices

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Appendix A. Project Element Mapbook

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AECOM, 2021
Caltrans, 2021
San Mateo County Imagery, 2018

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Caltrans, 2021
San Mateo County Imagery, 2018

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AECOM, 2021
Caltrans, 2021
San Mateo County Imagery, 2018

AECOM
Caltrans District 4
State Route 1 Multi-Asset Roadway Rehabilitation Project
San Mateo County, CA
PM 27.5/34.8
EA 04-0Q130 / Project ID 0418000053

APPENDIX A
Project Work Areas

AECOM Oakland CA 6/26/2022 USER alexander.remar PATH \\na.aecomnet.com\ifs\AMER\Oakland\415\OAK01\DCS\Projects\GIS\Projects\Caltrans On-Call\02_Maps\0Q130_SM1SM2_CAPM_VMS\02_Map_Production_and_Reports\Appendix\Appendix_A_ProjectWorkAreas.mxd

AECOM, 2021
Caltrans, 2021
San Mateo County Imagery, 2018

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Caltrans, 2021
San Mateo County Imagery, 2018

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Caltrans, 2021
San Mateo County Imagery, 2018

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San Mateo County Imagery, 2018

AECOM
Caltrans District 4

State Route 1 Multi-Asset Roadway Rehabilitation Project
San Mateo County, CA
PM 27.5/34.8
EA 04-0Q130 / Project ID 0418000053

APPENDIX A

Project Work Areas

AECOM, 2021
Caltrans, 2021
San Mateo County Imagery, 2018

AECOM, 2021
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AECOM, 2021
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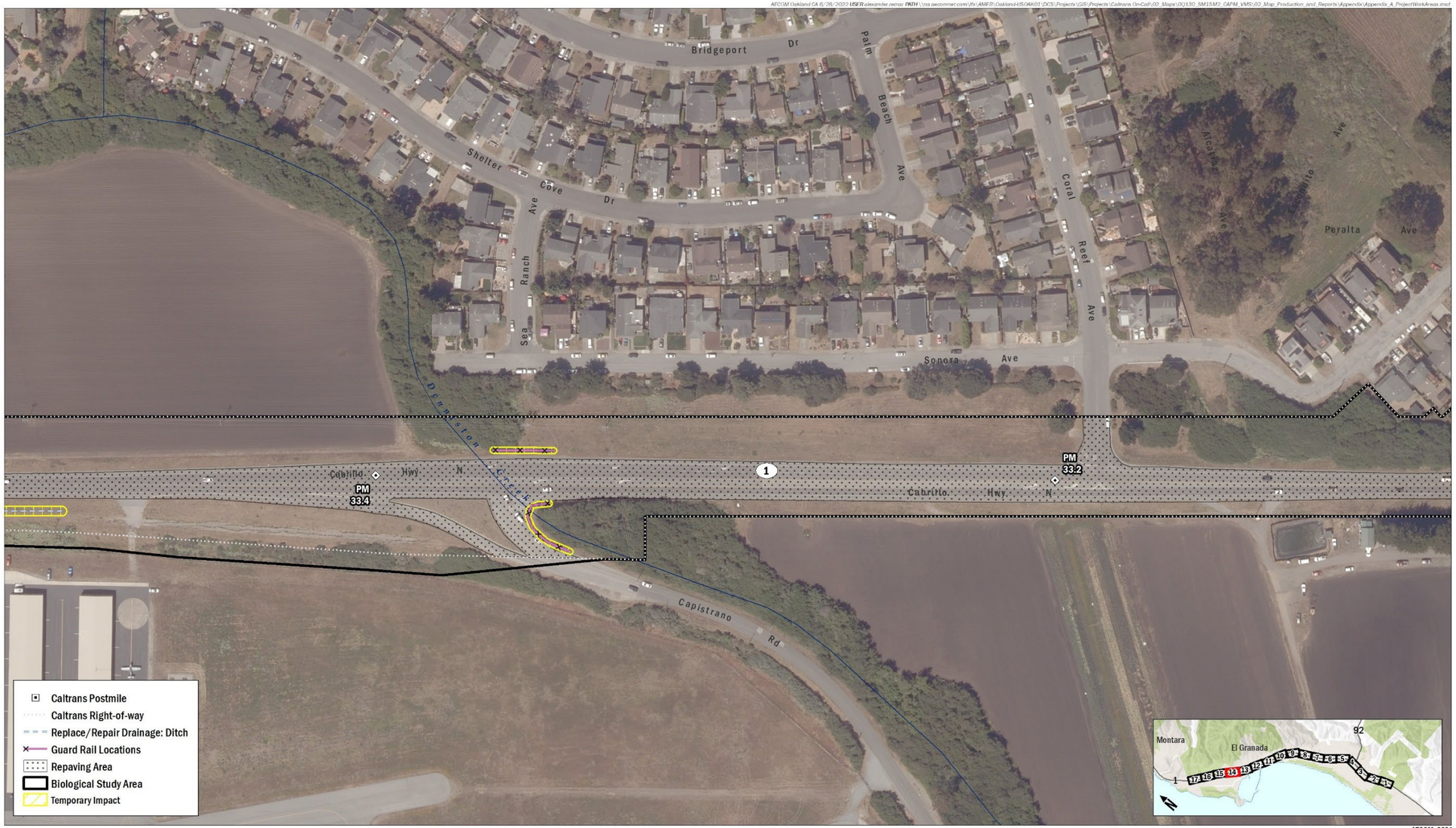
San Mateo County Imagery, 2018



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State Route 1 Multi-Asset Roadway Rehabilitation Project
San Mateo County, CA
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APPENDIX A
Project Work Areas

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APPENDIX A

Project Work Areas

Appendix B Potential for Special-Status Plant and Animal Species to Occur in the BSA

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Potential for Special-Status Plant Species to Occur in the BSA

Table B-1 Special-Status Plant Species: Listed or Proposed Species Potentially Occurring or Known to Occur in the Biological Study Area

Common Name	Scientific Name	Status	General Habitat Description/ Bloom Period/Elevation Range	Habitat Present/ Absent	Potential to Occur/Rationale
San Mateo thorn-mint	*Acanthomintha duttonii*	FE/SE/CRPR List 1B.1	Serpentinite, chaparral and valley and foothill grassland. Blooms: April through June. Elevation range 50 to 300 m.	Absent	**None.** Outside the elevation range and no suitable habitat. Not observed during botanical surveys.
Blasdale's bent grass	*Agrostis blasdalei*	--/--/CRPR List 1B.2	Coastal bluff scrub, coastal dunes, coastal prairie. Blooms: May through July. Elevation range 0 to 150 m.	Absent	**None.** No suitable habitat. Not observed during botanical surveys.
Franciscan onion	*Allium peninsulare* var. *franciscanum*	--/--/CRPR List 1B.2	Clay, volcanic, often serpentinite, cismontane woodland and valley and foothill grassland. Blooms: May and June. Elevation range 52 to 3,000 m.	Present	**Low.** Outside the elevation range and habitat is limited; nearest CNDDB occurrence is 7 miles away and not observed during botanical surveys.
Bent-flowered fiddleneck	*Amsinckia lunaris*	--/--/CRPR List 1B.2	Clay, volcanic, often serpentinite, cismontane woodland and valley and foothill grassland. Blooms: May through June. Elevation range 52 to 3,000 m. Blooms March through June. Elevation range 3 to 500 m.	Absent	**None.** There is no suitable habitat and no CNDDB occurrences within 10 miles and not observed during botanical surveys.
Anderson's manzanita	*Arctostaphylos andersonii*	--/--/CRPR List 1B.2	Broad-leafed upland forest, chaparral, north coast coniferous forest. Blooms November through May. Elevation range 60 to 760 m.	Absent	**None.** Outside the elevation range and the nearest CNDDB occurrence is over 3 miles away. Not observed during botanical surveys.
Montara manzanita	*Arctostaphylos montaraensis*	--/--/CRPR List 1B.2	Chaparral (maritime), Coastal scrub. Blooms January through March. Elevation range 80 to 500 m.	Absent	**None.** Outside the elevation range and no suitable habitat. Not observed during botanical surveys.
Kings Mountain manzanita	*Arctostaphylos regismontana*	--/--/CRPR List 1B.2	Broad-leafed upland forest, chaparral, north coast coniferous forest. Blooms December through April. Elevation range 305 to 730 m.	Absent	**None.** Outside the elevation range and not observed during botanical surveys.

Common Name	Scientific Name	Status	General Habitat Description/ Bloom Period/Elevation Range	Habitat Present/ Absent	Potential to Occur/Rationale
Coastal marsh milk-vetch	*Astragalus pycnostachyus* var. *pycnostachyus*	--/--/CRPR List 1B.2	Coastal dunes (mesic), coastal scrub, marshes and swamps (coastal salt, streamsides). Blooms (April) June through October. Elevation range 0 to 30 m.	Absent	**None.** Outside the elevation range and no coastal dunes, coastal scrub or marshes and therefore no suitable habitat. Not observed during botanical surveys.
Franciscan thistle	*Cirsium andrewsii*	--/--/CRPR List 1B.2	Broad-leafed upland forest, coastal bluff scrub, coastal prairie, coastal scrub. Blooms: March through July. Elevation range 0 to 150 m.	Present	**Low.** Nearest CNDDB occurrence is over 7 miles away and not observed during botanical surveys.
Fountain thistle	*Cirsium fontinale* var. *fontinale*	FE/SE/CRPR List 1B.1	Serpentinite seeps, chaparral (openings), Cismontane woodland and valley and foothill grassland. Blooms: May through October. Elevation range 45 to 175 m.	Absent	**None.** Outside the elevation range and no suitable habitat; nearest CNDDB occurrence is 5 miles away. Not observed during botanical surveys.
San Francisco collinsia	*Collinsia multicolor*	--/--/CRPR List 1B.2	Sometimes serpentinite, closed-cone coniferous forest, coastal scrub. Blooms: (February) March through May. Elevation range 30 to 250 m.	Absent	**None.** Outside the elevation range and no suitable habitat; nearest CNDDB occurrence is over 4.8 miles away. Not observed during botanical surveys.
Western leatherwood	*Dirca occidentalis*	--/--/CRPR List 1B.2	Broad-leafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, riparian forest, riparian woodland. Blooms January through March. Elevation ranges 50 to 400 m.	Present	**Low.** Nearest CNDDB occurrence is less than a mile away. Habitat is present but none were observed during botanical surveys.
San Mateo woolly sunflower	*Eriophyllum latilobum*	FE/SE/CRPR List 1B.1	Cismontane woodland (often serpentinite, on roadcuts). Blooms: May and June. Elevation range 45 to 150 m.	Absent	**None.** Outside the elevation range and no suitable habitat; nearest CNDDB occurrence is 5 miles away and not observed during botanical surveys.
Hillsborough chocolate lily	*Fritillaria biflora* var. *ineziana*	--/--/CRPR List 1B.1	Cismontane woodland, valley and foothill grassland. Blooms: March and April. Elevation range 150 to 150 m.	Absent	**None.** Outside the elevation range and nearest CNDDB occurrence is over 3 miles away.
Fragrant fritillary	*Fritillaria liliacea*	--/--/CRPR List 1B.2	Often serpentinite, Cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grassland. Blooms: February through April. Elevation range 3 to 410 m.	Absent	**None.** Nearest CNDDB occurrence is over 4 miles away and habitat is not suitable nor observed during botanical surveys.

Common Name	Scientific Name	Status	General Habitat Description/ Bloom Period/Elevation Range	Habitat Present/ Absent	Potential to Occur/Rationale
Short-leaved evax	*Hesperevax sparsiflora* var. *brevifolia*	--/--/CRPR List 1B.2	Coastal bluff scrub (sandy), coastal dunes and coastal prairie. Blooms: March through June. Elevation range 0 to 215 m.	Absent	**None.** Outside the elevation range and habitat is not suitable; not observed during botanical surveys.
Marin western flax	*Hesperolinon congestum*	FT/ST/CRPR List 1B.1	Serpentinite, chaparral and valley and foothill grassland. Blooms: April through July. Elevation range 5 to 370 m.	Absent	**None.** No suitable habitat at either site, the nearest CNDDB occurrence is over 5 miles away and none were observed during botanical surveys.
Kellogg's horkelia	*Horkelia cuneata* var. *sericea*	--/--/CRPR List 1B.1	Closed-cone coniferous forest, chaparral (maritime), coastal dunes, coastal scrub. Blooms: April through September. Elevation range 10 to 200 m.	Absent	**None.** No suitable habitat and none were observed during botanical surveys.
Point Reyes horkelia	*Horkelia marinensis*	--/--/CRPR List 1B.2	Coastal dunes, coastal prairie, and coastal scrub. Blooms: May through September. Elevation range 5 to 755 m.	Absent	**None.** No suitable habitat and none were observed during botanical surveys.
Island tube lichen	*Hypogymnia schizidiata*	--/--/CRPR List 1B.3	Closed-cone coniferous forest, chaparral. No blooming period. Elevation range 360 to 755 m.	Absent	**None.** Outside the elevation range and no suitable habitat. None were observed during botanical surveys.
Perennial goldfields	*Lasthenia californica* ssp. *macrantha*	--/--/CRPR List 1B.2	Coastal bluff scrub, coastal dunes and coastal scrub. Blooms: January through November. Elevation range 5 to 520 m.	Absent	**None.** No suitable habitat and none were observed during botanical surveys.
Coast yellow leptosiphon	*Leptosiphon croceus*	--/CC/CRPR List 1B.1	Coastal bluff scrub and coastal prairie. Blooms: April through June. Elevation range 10 to 150 m.	Absent	**None.** Outside the elevation range and no suitable habitat. None were observed during botanical surveys.
Crystal Springs lessingia	*Lessingia arachnoidea*	--/--/CRPR List 1B.2	Cismontane woodland, coastal scrub and valley and foothill grassland. Blooms: July through October. Elevation range 60 to 200 m.	Absent	**None.** Outside the elevation range; no CNDDB occurrences within 10 miles. None were observed during botanical surveys.
Ornduff's meadowfoam	*Limnanthes douglasii* ssp. *ornduffii*	--/--/CRPR List 1B.1	Meadows and seeps. Blooms: November through May. Elevation range 10 to 20 m.	Present	**High.** Suitable habitat and known occurrences in northern section of the alignment. These occurrences represent a portion of the only known population of this species.

Common Name	Scientific Name	Status	General Habitat Description/ Bloom Period/Elevation Range	Habitat Present/ Absent	Potential to Occur/Rationale
Arcuate bush-mallow	*Malacothamnus arcuatus*	--/--/CRPR List 1B.2	Chaparral and Cismontane woodland. Blooms: April through September. Elevation range 15 to 355 m.	Absent	**None.** No suitable habitat and none were observed during botanical surveys.
Woodland woolythreads	*Monolopia gracilens*	--/--/CRPR List 1B.2	Serpentine, broad leafed upland forest (openings), chaparral (openings), Cismontane woodland, North Coast coniferous forest (openings), and valley and foothill grassland. Blooms: February through July. Elevation range 100 to 1,200 m.	Absent	**None.** Outside the elevation range and none were observed during botanical surveys.
White-rayed pentachaeta	*Pentachaeta bellidiflora*	FE/SE/CRPR List 1B.1	Cismontane woodland, Valley and foothill grassland (often serpentinite). Blooms: March through May. Elevation range 35 to 620 m.	Absent	**None.** No suitable habitat; nearest CNDDB occurrence is over 5 miles away. None were observed during botanical surveys
Choris' popcornflower	*Plagiobothrys chorisianus* var. *chorisianus*	--/--/CRPR List 1B.2	Chaparral, coastal prairie, coastal scrub. Blooms: March through June. Elevation range 3 to 160 m.	Present	**Low.** The nearest CNDDB occurrence to the Pilarcitos Creek is 0.5 mile away. The habitat at Pilarcitos Creek is marginal for this species, however none were observed during botanical surveys.
Oregon polemonium	*Polemonium carneum*	--/--/CRPR List 2B.2	Coastal prairie, coastal scrub and lower montane coniferous forest. Blooms: April through September. Elevation range 0 to 1,830 m.	Absent	**None.** There are no nearby CNDDB occurrences within 10 miles of the project site.
Hickman's cinquefoil	*Potentilla hickmanii*	FE/SE/CRPR List 1B.1	Coastal bluff scrub, closed-cone coniferous forest, meadows and seeps (vernally mesic), marshes and swamps (freshwater). Blooms: April through August. Elevation range 10 to 149 m.	Absent	**None.** Outside the elevation range; nearest CNDDB occurrence is over 5 miles away. The habitat at Pilarcitos Creek seems to be unsuitable for this species. None were observed during botanical surveys.
Chaparral ragwort	*Senecio aphanactis*	--/--/CRPR List 2B.2	Chaparral, cismontane woodland and coastal scrub. Blooms: January through April (May). Elevation range 15 to 800 m.	Absent	**None.** No suitable habitat; nearest CNDDB occurrence is over 5 miles away. None were observed during botanical surveys.
Scouler's catchfly	*Silene scouleri* ssp. *scouleri*	--/--/CRPR List 2B.2	Coastal bluff scrub, Coastal prairie and valley and foothill grassland. Blooms: (March through May)June through August (September). Elevation range 0 to 600 m.	Absent	**None.** No suitable habitat; nearest CNDDB occurrence is over 5 miles away. None were observed during botanical surveys.

Common Name	Scientific Name	Status	General Habitat Description/ Bloom Period/Elevation Range	Habitat Present/ Absent	Potential to Occur/Rationale
San Francisco campion	*Silene verecunda* ssp. *verecunda*	--/--/CRPR List 1B.2	Coastal bluff scrub, chaparral, coastal prairie, coastal scrub, valley and foothill grassland. Blooms: (February) March through June (August). Elevation range 30 to 645 m.	Absent	**None.** The nearest CNDDB occurrence to the Pilarcitos Creek is 4 miles away. The habitat at either site does not seem suitable for the species. None were observed during botanical surveys.
San Francisco owl's-clover	*Triphysaria floribunda*	--/--/CRPR List 1B.2	Coastal prairie, coastal scrub, valley and foothill grassland. Blooms: April through June. Elevation range 10 to 160 m.	Present	**Low.** The nearest CNDDB occurrence to the Pilarcitos Creek is 4.6 miles away. The habitat at Pilarcitos Creek does not seem suitable for the species. None were observed during botanical surveys.
Coastal triquetrella	*Triquetrella californica*	--/--/CRPR List 1B.2	Coastal bluff scrub and coastal scrub. No bloom period. Elevation range 10 to 100 m.	Absent	**None.** Outside the elevation range; nearest CNDDB occurrence is over 9 miles away. The habitat does not appear to be suitable for this species and none were observed during botanical surveys.

Notes:

CNDDB = California Natural Diversity Database
CRPR = California Rare Plant Rank:
- List 1B.1 = Rare throughout range; more than 80 percent of occurrences threatened
- List 1B.2 = Rare throughout range; 20 to 80 percent of occurrences threatened
- List 1B.3 = Rare throughout range; less than 20 percent of occurrences threatened
- List 2B.2 = Plants rare, threatened, or endangered in California, but more common elsewhere, 20 to 80 percent of occurrences threatened.

FE = federal endangered
FT = federally threatened
m = meters
SE = state endangered
ST = state threatened

Table B-2 Special Status Bird Species with Potential to Occur in the Biological Study Area

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Potential to Occur/Rationale
Long-eared owl	*Asio otus*	--/SSC	They build stick nests in trees or cliffs, in abandoned squirrel nests or on the ground and forage in grasslands, shrublands, coniferous forests or deciduous forests.	Present	**Low.** The nearest CNDDB occurrence is over 10 miles. Despite the low numbers of occurrences, the trees and forest habitat in the project footprints could be potentially suitable habitat for them to build their stick nests.
Burrowing owl	*Athene cunicularia*	-- /SSC	Inhabits open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Typically nests in mammal burrows.	Absent	**None.** Not suitable habitat for this species.
Marbled murrelet	*Brachyramphus marmoratus*	FT/SE	[Nesting Trees] Nests inland from coast in old-growth redwood dominated forests.	Absent	**None.** No suitable nesting habitat. Surveys indicate that suitable old growth redwood trees, or large redwood trees with suitable platforms for nesting are not present.
Western snowy plover	*Charadrius nivosus*	FT/SSC	Nests on sandy beaches, salt pond levees, and shores of large alkali lakes.	Absent	**None.** None of these nesting habitats are present in the BSA.
Black swift	*Cypseloides niger*	--/SSC	Requires specialized forested areas near rivers where nests are behind waterfalls or damp cliffs.	Absent	**None.** No suitable waterfalls or damp cliffs occur in the BSA for suitable nesting habitat.
American peregrine falcon	*Falco peregrinus anatum*	FD/SD, FP	[Nesting Habitat] Open country including tundra, coastal, mountainous, and forested regions; nests on rocky cliff ledges, large trees or tall urban structures near water	Absent	**Low.** There are no cliff ledges or tall urban structures. There are large alder trees at Pilarcitos Creek near the coastline and some open habitat areas nearby which are marginally suitable for this species.
Saltmarsh common yellowthroat	*Geothlypis trichas sinuosa*	--/SSC	Resident of San Francisco Bay region in fresh and saltwater marshes and riparian areas.	Absent	**None.** There are no saltmarshes or riparian areas near San Francisco Bay in BSA.
Bald eagle	*Haliaeetus leucocephalus*	FD/SE, FP	Nests primarily in large trees, usually within 1 mile of water; forages along ocean shore, lake margins, and large rivers.	Present	**Low.** The closest CNDDB occurrence is from 6 miles away. Pilarcitos Creek is nearby the Pacific Ocean shoreline. However due to lack of large trees with stick nests, it is unlikely that this species would nest here.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Potential to Occur/Rationale
California black rail	*Laterallus jamaicensis coturniculus*	--/ST, FP	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays.	Absent	**None.** There are no freshwater or saltwater marshes, meadows or shallow margins.
Alameda song sparrow	*Melospiza melodia pusillula*	--/SSC	Resident of the borders between saltmarsh and upland habitats within the south arm of San Francisco Bay.	Absent	**None.** BSA is near San Francisco Bay or near saltmarsh habitats. The habitat is not suitable for this species.
California Ridgway's rail	*Rallus obsoletus*	FE/SE, FP	Saltwater and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay.	Absent	**None. P**roject sites are not near San Francisco Bay or near saltmarsh habitats. The habitat is not suitable for this species in BSA.
Bank swallow	*Riparia riparia*	--/ST	[Nesting] Bank Swallows nest in fresh banks or earthen walls, and on occasion buildings, and forage insects over fields, streams, wetlands, farmlands, and still water.	Absent	**None.** There are no fresh banks of earthen walls or buildings for this species to nest in BSA. The nearest CNDDB occurrence is over 6 miles away.
California least tern	*Sterna antillarum browni*	FE/SE, FP	Nests along the coast on open beaches from San Francisco Bay south to northern Baja California. Forages in coastal and estuarine waters	Absent	**None.** There are no beaches in BSA for this species to nest.
Short-tailed albatross	*Phoebastria albatrus*	FE/SSC	Nests off islands in Japan and spend most of their lives at sea.	Absent	**None.** The BSA is not close to areas where this species nests.

Notes:

BSA = biological study area
CNDDB = California Natural Diversity Database
FD = Federally Delisted
FE = federal endangered
FP = fully protected
FT = federally threatened
SD = State Delisted
SE = state endangered
SSC = state species of special concern
ST = state threatened

Table B-3 Special Status Mammal Species with Potential to Occur in the Biological Study Area

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present /Absent	Potential to Occur/Rationale
Pallid bat	*Antrozous pallidus*	--/SSC	Found in low elevations in California, foraging in grasslands, scrub, open woodlands, and forests. Roosts in caves, crevices, mines, and hollow trees.	Present	**Low**. The BSA provides marginal potential foraging and roosting habitat in trees and forests. However, the nearest CNDDB occurrences is over 4 miles away.
Townsend's big-eared bat	*Corynorhinus townsendii*	--/SSC	Throughout California in a wide variety of habitats, but almost always near caves or abandoned mines, and other roosting areas (sometimes in abandoned buildings or large tree cavities). They can be found in pine forests and arid desert scrub habitats. Most common in mesic sites.	Absent	**None.** No caves or abandoned mines have been found in the BSA and there are no abandoned buildings. Unlikely for them to use any tree cavities.
Southern sea otter	*Enhydra lutris nereis*	FT/FP	In marine environments along the California coast from Half Moon Bay to Santa Barbara.	Absent	**None.** There are no marine environments in the BSA.
Hoary bat	*Lasiurus cinereus*	--/--	Prefers open habitats or habitat mosaics, with access to trees for roosting and open areas or habitat edges for feeding	Absent	**Low.** The trees in the BSA are in forested areas lacking open areas that are not preferred by this species.
San Francisco dusky-footed woodrat	*Neotoma fuscipes annectens*	--/SSC	Occupies forested habitats of moderate canopy and moderate to dense understory. May prefer chaparral and redwood habitats.	Present	**Low.** The riparian woodland and forested habitats in the BSA provides potential habitat for this species. However, no stick nests were observed in the BSA during project field surveys.
Big free-tailed bat	*Nyctinomops macrotis*	--/SSC	Breeds in Mexico, Texas, New Mexico and southern Arizona. Prefers rugged, rocky terrain. Roosts in buildings, caves and occasionally in holes in trees.	Absent	**None.** There is no suitable habitat for this species in BSA.
Salt-marsh harvest mouse	*Reithrodontomys raviventris*	FE/SE, FP	Occurs only in saline emergent wetlands and tributaries of San Francisco Bay. Associated with stands of pickleweed (Salicornia).	Absent	**None.** There is no suitable habitat for this species in BSA.
American badger	*Taxidea taxus*	--/SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	Absent	**Low.** This species prefers open habitats whereas the habitats in the BSA are dense with vegetation and in moister areas.

Notes:

BSA = biological study area
CNDDB = California Natural Diversity Database
FE = federal endangered
FP = fully protected
FT = federally threatened
SE = state endangered
SSC = state species of special concern

Table B-4 Special Status Reptile Species with Potential to Occur in the Biological Study Area

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Potential to Occur/Rationale
Green sea turtle	*Chelonia mydas*	FT/--	Shallow tropical and subtropical waters and coastlines.	Absent	**None.** There is no suitable marine aquatic habitat or beaches for this species in BSA.
Western pond turtle	*Emys marmorata*	--/SSC	Northern California and Oregon. Occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies, or other aquatic vegetation. Nests in nearby uplands.	Present	**Low.** Aquatic habitat in creeks is potentially suitable for this species, however, will not be adversely affected by this project.
San Francisco garter snake	*Thamnophis sirtalis tetrataenia*	FE/SE, FP	Heavily vegetated freshwater wetlands and ponds with available basking habitat. Known range limited to San Mateo and Santa Cruz counties. Feeds on amphibians such as California red-legged frog.	Present	**Moderate.** The riparian area at Pilarcitos Creek is heavily disturbed and frequented by human activity. The freshwater creeks and riparian zones may provide potential dispersal habitat.

Notes:

BSA = biological study area
FE = federal endangered
FP = fully protected
FT = federally threatened
SE = state endangered
SSC = state species of special concern

Table B-5 Special Status Amphibian Species with Potential to Occur in the Biological Study Area

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Potential to Occur/Rationale
California tiger salamander	*Ambystoma californiense*	FT/ST	Occupies underground mammal burrows in grasslands and woodlands and migrates to freshwater ponds and vernal pools to reproduce.	Absent	**None.** There are no grassland or woodland areas with mammal burrows that would provide suitable upland habitat nor are there suitable freshwater ponds or vernal pools for breeding habitat for this species at BSA. The nearest CNDDB occurrence is over 8 miles away.
Santa Cruz black salamander	*Aneides niger*	--/SSC	Occurs in mixed deciduous woodland, coniferous forests, coastal grasslands. Found under rocks near streams, in talus, under damp logs, and other objects (CalHerps 2019).	Absent	**None.** The project is located outside of the known range of the species, and suitable habitat is not present.
California giant salamander	*Dicamptodon ensatus*	--/SSC	Occurs in wet coastal forests in or near clear, cold permanent and semi-permanent streams and seepages.	Absent	**None.** Habitat for adults and sub-adults is not present in the BSA in the form of cold permanent, semi-permanent stream and coastal forest habitats.
Foothill yellow-legged frog	*Rana boylii*	--/SE, SSC	Partly shaded, shallow streams and riffles with a rocky substrate in a variety of habitats.	Absent	**None.** The creeks in the BSA lack rocky substrate to be suitable for this species.
California red-legged frog	*Rana draytonii*	FT/SSC	Dense, emergent, and riparian vegetation associated with deep (0.7 m), still or slow-moving water.	Present	**High.** Habitat for adults and sub-adults are present in the creeks, pools and riparian vegetation and variety of habitats present at each BSA. Multiple CNDDB occurrences within 1 mile of Pilarcitos Creek Bridge.
Red-bellied newt	*Taricha rivularis*	--/SSC	Rapid flowing streams with rocky substrate in proximity to redwood forests. Known range from Humboldt County to Sonoma County along the coast with potential isolated population in Stevens Creek watershed in Santa Clara County.	Absent	**None. o**utside the known range for this species**.**

Notes:

BSA = biological study area
CNDDB = California Natural Diversity Database
FT = federally threatened
m = meters
SE = state endangered
SSC = state species of special concern
ST = state threatened

Table B-6 Special Status Fish Species with Potential to Occur in the Biological Study Area

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Potential to Occur/Rationale
Tidewater goby	*Eucyclogobius newberryi*	FE/SSC	Inhabits estuaries of the Pacific Coast in areas of aquatic vegetation.	Absent	**None.** There are no estuaries in the BSA or suitable habitat for this species.
Delta Smelt	*Hypomesus transpacificus*	FT/SE	Sacramento/San Joaquin Delta, seasonally in Suisun Bay, Carquinez Strait, and San Pablo Bay.	Absent	**None.** No suitable habitat in the BSA and outside the known range of this species.
Coho salmon – Central California Coast ESU	*Oncorhynchus kisutch pop. 4*	FE/SE	Unimpeded, anadromous coastal watercourses, from Punta Gorda to San Francisco Bay, including the bay.	Absent	**None. T**his species is not expected to occur in any of the watersheds within the BSA.
Steelhead – Central California Coast DPS	*Oncorhynchus mykiss irideus pop. 8*	FT/--	Unimpeded, anadromous coastal watercourses, from Russian River, south to Soquel to, but not including, Pajaro River. Also San Francisco and San Pablo Bay basins.	Present	**High.** This species is known to occur in portions of the Pilarcitos Creek watershed, and is likely to occur is Frenchman's and Denniston Creeks.
Steelhead – Central California Coast DPS designated critical habitat			Critical Habitat for this species was designated in 2005. Includes many streams in San Mateo County.	Present	**High.** Designated Critical habitat is present at Pilarcitos, Frenchman's, and Denniston Creek.
Longfin smelt	*Spirinchus thaleichthys*	FC/ST	Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15 to 30 ppt, but can be found in completely freshwater to almost pure seawater	Absent	**None.** No suitable habitat for this species in the BSA and outside its known range.

Notes:

BSA = biological study area
DPS = distinct population segment
ESU = evolutionarily significant unit
FC = federal candidate
FE = federal endangered
FT = federally threatened
ppt = parts per thousand
SE = state endangered
SSC = state species of special concern
ST = state threatened

Table B-7 Special Status Invertebrate Species with Potential to Occur in the Biological Study Area

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Potential to Occur/Rationale
obscure bumble bee	*Bombus caliginosus*	--/--/--	Grassy coastal prairies and coast range meadows along the Pacific Coast, from southern California to southern British Columbia.	Absent	**Low.** There is not suitable habitat in the BSA for this species.
Crotch bumble bee	*Bombus crotchii*	--/SC	Inhabits open grassland and scrub habitats and nesting occurs underground. Occurs from northern California to Mexico border.	Absent	**Low.** There is not suitable open habitat in the BSA for this species.
Western bumble bee	*Bombus occidentalis*	--/SC	Inhabits open grassy areas, urban parks and gardens, chaparral and shrub areas, and mountain meadows. Typically nests in underground burrows or other cavities.	Absent	**Low.** There is not suitable open habitats in the BSA for this species.
San Bruno Elfin Butterfly	*Callophrys mossii bayensis*	FE/--	Inhabits rocky outcrops and cliffs in coastal scrub on the San Francisco Peninsula, endemic to this habitat in California.	Absent	**None.** There are no rocky outcrops and cliffs in coastal scrub in the BSA; outside the known range of this species.
Bay checkerspot butterfly	*Euphydryas editha bayensis*	FT/--	Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco bay.	Absent	**None.** There are no serpentine grasslands or any of the host plants for this species in the BSA. The BSA is outside the known range of this species.
Edgewood Park micro-blind harvestman	*Microcina edgewoodensis*	--/--	Serpentine rocks in grassland adjacent to scrub oaks.	Absent	**None.** There are no serpentine grasslands or any of the host plants for this species in the BSA; outside the known range of this species.
Mission blue butterfly	*Plebejus icarioides missionensis*	FE/--	Coastal chaparral and grasslands where host plants (lupine spp.) and nectar plants occur.	Absent	**None.** There are no chaparral or grassland habitats or any of the host plants for this species in the BSA; outside the known range of this species.
Myrtle's silverspot butterfly	*Speyeria zerene myrtleae*	FE/--	Coastal sand dunes or prairie habitat within 3 miles of the coast that are sheltered by wind. Range is from San Mateo County to mouth of Russian River.	Absent	**None.** There are no coastal sand dunes or prairie habitat that is suitable for this species in the BSA.

Notes:

BSA = biological study area
FE = federal endangered
FT = federally threatened
SC = state candidate

Appendix C. Avoidance, Minimization, and/or Mitigation Summary

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Table C-1. SR 1 0Q130 Avoidance and Minimization Measures

Category	Number	Task	Description	Timing	Mitigation for significant impacts under CEQA?
Biology	BIO-01	Riparian Vegetation Protection	All riparian habitat in the project area will be delineated as an environmentally sensitive area (ESA), and no construction activities will occur outside of the immediate work area in riparian habitat ESAs. At the roadway crossings of Denniston, Frenchman's, and Pilarcitos Creeks, the California Department of Transportation (Caltrans) will limit riparian vegetation removal to the immediate work area. Trees or shrub trimming at those locations will be limited to removing only branches that overhang the roadway.	• Project Approval and Environmental Document (PAED) • Plans, Specifications, and Estimates (PS and E) • Construction	No
Biology	BIO-02	Seasonal Avoidance	Construction activities off paved surfaces in areas of potential California red-legged frog habitat (ESAs) will be performed between June 15 and October 15 to minimize impacts on this species. Designated staging areas may be used outside of this work window once cleared by a USFWS-approved biologist or their designee and fenced, as appropriate.	Construction	No
Biology	BIO-03	Proper Use of Erosion Control Devices	To avoid entanglement or injury of California red-legged frog or San Francisco garter snake, erosion control materials that use plastic or synthetic monofilament netting will not be used.	• PS and E • Construction	No
Biology	BIO-04	Avoidance of Entrapment	To prevent inadvertent entrapment of animals during construction, all excavated, steep-walled holes or trenches more than 1 foot deep will be covered at the close of each working day with plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks at an angle no greater than 30 degrees. Before such holes or trenches are filled, they must be thoroughly inspected for trapped animals. All replacement pipes, hoses, culverts, or similar structures less than 12 inches in diameter will be closed, capped, or covered upon entry to the project site. All similar structures greater than 12 inches must be inspected before they are subsequently moved, capped, and/or buried.	Construction	No
Biology	BIO-05	Biological Monitor	The names and qualifications of proposed biological monitor(s) will be submitted to the USFWS for approval prior to the start of construction. The USFWS-approved biological monitor(s) will keep a copy of the USFWS biological opinion in their possession when on site. Through communication with the resident engineer, the USFWS-approved biological monitor(s) will be on site during all work that could reasonably result in take of California red-legged frog or other special-status species. The USFWS-approved biological monitor(s) will have the authority to stop work that may result in the unauthorized take of special-status species. If the USFWS-approved biological monitor exercises this authority, the USFWS will be notified by telephone and e-mail message within one working day.	• PAED • PS and E • Construction	No
Biology	BIO-06	Pre-Construction/Daily Surveys	Pre-construction surveys for special-status species will be conducted by the USFWS-approved biological monitor no more than 14 calendar days prior to any initial ground disturbance and immediately prior to ground-disturbing activities (including vegetation removal and fence installation) in the project footprint. These efforts will consist of walking surveys of the project limits and, if possible, accessible adjacent areas within at least 50 feet of the project limits. The USFWS-approved biological monitor will investigate potential cover sites when it is feasible and safe to do so. This includes thorough investigation of mammal burrows, rocky outcrops, appropriately sized soil cracks, tree cavities, and debris. Native vertebrates found in the cover sites within the project limits will be documented and relocated to an adequate cover site in the vicinity, with the exception of fully protected species. Safety permitting, the USFWS-approved biological monitor will also survey areas of disturbed soil for signs of California red-legged frog or San Francisco garter snake within 30 minutes following initial disturbance of the given area. The need for further pre-construction surveys will be determined by the biologist based on site conditions and realized construction timelines.	• PAED • PS and E • Construction	No

Category	Number	Task	Description	Timing	Mitigation for significant impacts under CEQA?
Biology	BIO-07	Protocol for Species Observation	The USFWS-approved biological monitor(s) will have the authority to halt work through coordination with the resident engineer if California red-legged frog or San Francisco garter snake are observed in the project footprint. The resident engineer will keep construction activities suspended in a 50-foot radius of the California red-legged frog or San Francisco garter snake in any construction area where the biologist has determined that a potential take of the species could occur. Work will resume after observed listed individuals leave the site voluntarily, the biologist determines that no wildlife is being harassed or harmed by construction activities, or the wildlife is relocated by the biologist to a release site using USFWS-approved handling techniques.	Construction	No
Biology	BIO-08	Handling of California Red-Legged Frog	If a California red-legged frog is discovered, the resident engineer and USFWS-approved biological monitor will be immediately informed. • If a California red-legged frog gains access to a construction zone, work will be halted immediately within 50 feet until the animal leaves the site or is captured and relocated by the USFWS-approved biological monitor. • The USFWS will be notified within one working day if a California red-legged frog or San Francisco garter snake is discovered in the construction site. • The captured California red-legged frog will be released in appropriate habitat outside of the construction area but near the capture location. The release habitat will be determined by the USFWS-approved biological monitor. • The USFWS-approved biological monitor will take precautions to prevent introduction of amphibian diseases in accordance with the Revised Guidance on Site Assessments and Field Surveys for the California Red-Legged Frog (USFWS 2005).	Construction	No
Biology	BIO-09	Rare Plant Survey	Caltrans will conduct a rare plant survey in the Biological Study Area (BSA) to determine the presence or absence of special-status plant species. To ensure that surveys are conducted at an appropriate time to identify all the target species, as many as three survey replicates will be performed. The survey replicates will be timed based on target species blooming periods and rainfall levels, but are targeted to occur in March, late April/May, and June of 2022. All plants will be identified to a level needed to verify protected status. Any listed plants discovered in the field will be mapped and included as ESAs in the final plans and specifications. Caltrans will consult with the appropriate wildlife agency with jurisdiction and will obtain necessary permits or authorizations if unavoidable take of a listed plant species incidental to the proposed work would occur.	• PAED • PS and E	No
Biology	BIO-10	Pre-Construction Plant Survey	A project biologist with appropriate botany experience will perform a site survey in ESAs where construction disturbance could occur before start of work. Special-status plants will be flagged and avoided where possible. Caltrans will coordinate with appropriate wildlife agencies with jurisdiction prior to construction if incidental take of a listed plant species is unavoidable, and will obtain any necessary permits or authorizations for direct impacts. Caltrans will adhere to the requirements of all permits and authorizations issued for the project.	• PAED • PS and E • Construction	No
Biology	BIO-11	Drainage Work Exclusion for Ornduff's Meadowfoam	Caltrans will avoid drainage system rehabilitation or other work in unpaved areas within that could affect soil hydrology on within 3,000 feet of where Ornduff's meadowfoam is known to occur. If Caltrans later determines that rehabilitating the drainage system at this location is necessary, it will complete a soil hydrology study, drainage system design, and mitigation plan in coordination with the California Department of Fish and Wildlife that results in no net loss of this species or its habitat.	• PAED • PS and E • Construction	No
Biology	BIO-12	Wetlands and Waters Construction Work Windows	Work in wetlands, waters, and riparian habitat will be limited to June 15 through October 15 to avoid or minimize impacts to waters of the United States, waters of the state, riparian habitat, and special-status species habitat.	Construction	No
Biology	BIO-13	ESAs	Wetlands, waters, riparian habitat, designated critical habitat, and special-status species habitat—including that of Ornduff's meadowfoam—will be delineated as ESAs on contract plans and defined in contract specifications. ESAs outside of the proposed work areas will be specifically identified to avoid during construction. Where work must occur in or adjacent to an ESA, an approved biologist with stop-work authority will be present.	• PAED • PS and E • Construction	No
Biology	BIO-14	ESA Fencing	Caltrans will install fencing to outline and protect ESAs prior to the start of construction. ESA provisions will be implemented as a first order of work and will remain in place until all construction activities are completed in the work area.	• PAED • PS and E • Construction	No

Category	Number	Task	Description	Timing	Mitigation for significant impacts under CEQA?
Cultural Resources	CUL-01	ESA Action Plan	• An ESA Action Plan will be developed for the project to protect the two archaeological resources in the APE in their entirety. Before construction, the ESA Action Plan will be reviewed and approved by the Cultural Studies Office (CSO) at Caltrans' headquarters. The Caltrans archaeologist will ensure that the ESAs are included and described clearly in the environmental document. The ESAs will be included in the project's Environmental Commitment Record. • The Caltrans archaeologist will work in coordination with the other responsible parties to ensure that the ESA is represented and depicted in the plans, specifications, and estimates package. The package and plans will be reviewed throughout the design process, so that the ESAs are accurately represented and depicted. The Caltrans archaeologist will ensure that the ESA Action Plan is included in the resident engineer's pending file. • All responsible parties will ensure that the ESAs are discussed during the preconstruction meeting, led by a qualified archaeologist and Native American tribes who may want to administer the training as well. The importance of the ESAs will be discussed with construction personnel, stressing that no construction activity (including storage of equipment or materials) may occur in the ESAs, and that workers must remain outside of the ESAs at all times. In addition, historic preservation laws that protect archaeological sites and artifacts against any disturbance or removal will be discussed. • The resident engineer will notify the Caltrans Office of Cultural Resource Studies staff (Caltrans project archaeologist) at least 2 weeks in advance of the start of construction. A field review of the ESA locations will be conducted. The Caltrans project archaeologist will mark the ESA locations with the contractor.	• PAED • PS and E • Construction	No
Cultural Resources	CUL-02	Construction Activities for ESA Protection	• Temporary, high-visibility fencing will be installed by the contractor at least 1 week before beginning any ground disturbance. The Caltrans archaeologist will coordinate this activity with the resident engineer. The Caltrans archaeologist will be present to supervise and monitor this activity. • The Caltrans archaeologist will conduct spot inspections and site visits to ensure the integrity of the ESAs. The Caltrans archaeologist will notify the State Historic Preservation Officer, CSO, and consulting Native American parties within 48 hours of any ESA, post-review discovery, or inadvertent effect, to immediately determine how the breach or discovery will be addressed.	Construction	No
Cultural Resources	CUL-03	Post-Construction Activities:	The resident engineer will inform the Caltrans archaeologist when construction is completed. The contractor, in coordination with the resident engineer and the Caltrans archaeologist, will remove the ESA fencing at the completion of construction.	Construction	No
Visual Resources	VIS-01	Guard Rail Finish	Caltrans will include a matte finish on guard rail exposed metal surfaces to reduce glare.	PS and E	No
Other	TRANS-01	Development of Transportation Management Plan	Caltrans will develop a project-specific traffic management plan (TMP) during the final design phase of the project. The TMP will be prepared in accordance with Caltrans requirements and guidelines to minimize construction-related delays and impacts on emergency vehicles and the traveling public. The TMP will include the following provisions: • Coordination with San Mateo County, the City of Half Moon Bay, and any other applicable local jurisdictions for notification of closures and detours • Coordination with California Highway Patrol (CHP) and other local law enforcement • Use of portable changeable message signs, the CHP construction zone enhanced enforcement program, one-way traffic controls, and flaggers • Continued access for emergency services • Continued access to any residential driveways	PS and E	No

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Appendix D. U.S. Fish and Wildlife Service and National Marine Fisheries Service Official Species Lists for the Project

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: April 22, 2022
Project Code: 2022-0034779
Project Name: State Route 1 Multi-Asset Roadway Rehabilitation Project, PM 27.5/34.8

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

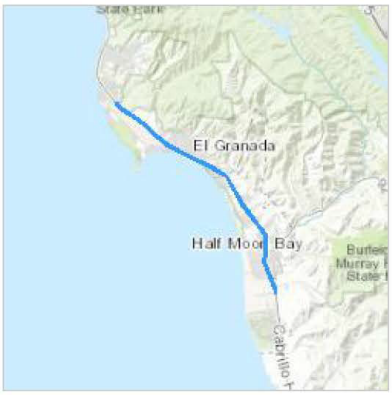
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Project Code: 2022-0034779
Event Code: None
Project Name: State Route 1 Multi-Asset Roadway Rehabilitation Project, PM 27.5/34.8
Project Type: Road/Hwy - Maintenance/Modification
Project Description: San Mateo County, CA
The California Department of Transportation (Caltrans) proposes the State Route (SR) 1 Multi-Asset Roadway Rehabilitation Project (proposed project) to rehabilitate the existing pavement, improve existing traffic facilities, install complete streets elements, and install traffic operations system elements along SR 1 in San Mateo County, California. The proposed project would include pavement rehabilitation; replacing existing drainage inlets, culverts, and dikes; replacing existing guardrails with Midwest guardrail systems; replacing existing crash cushions; upgrading curb ramps; implementing complete street elements; upgrading signal poles; installing conduits; installing traffic operation system elements (intersection cameras, closed-circuit television cameras, variable message signs, and traffic monitoring stations); and relocating and/or replacing utility cabinets.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@37.4879598,-122.44942245162632,14z



Counties: San Mateo County, California

Endangered Species Act Species

There is a total of 14 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Salt Marsh Harvest Mouse *Reithrodontomys raviventris* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/613	Endangered

Birds

NAME	STATUS
California Clapper Rail *Rallus longirostris obsoletus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4240	Endangered
California Least Tern *Sterna antillarum browni* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104	Endangered
Marbled Murrelet *Brachyramphus marmoratus* Population: U.S.A. (CA, OR, WA) There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Western Snowy Plover *Charadrius nivosus nivosus* Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened

Reptiles

NAME	STATUS
Green Sea Turtle *Chelonia mydas* Population: East Pacific DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened
San Francisco Garter Snake *Thamnophis sirtalis tetrataenia* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5956	Endangered

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened
Tidewater Goby *Eucyclogobius newberryi* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/57	Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Hickman's Potentilla *Potentilla hickmanii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6343	Endangered
San Mateo Woolly Sunflower *Eriophyllum latilobum* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7791	Endangered
White-rayed Pentachaeta *Pentachaeta bellidiflora* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7782	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency:	California Department of Transportation District 4
Name:	David Pecora
Address:	300 Lakeside Drive
Address Line 2:	Suite 400
City:	Oakland
State:	CA
Zip:	94612
Email	david.pecora@aecom.com
Phone:	5107546453

Pecora, David

From: Pecora, David
Sent: Thursday, April 21, 2022 7:40 PM
To: nmfs.wcrca.specieslist@noaa.gov
Subject: Caltrans State Route 1 Multi-Asset Roadway Rehabilitation Project, PM 27.5/34.8

The California Department of Transportation (Caltrans) proposes the State Route (SR) 1 Multi-Asset Roadway Rehabilitation Project (proposed project) to rehabilitate the existing pavement, improve existing traffic facilities, install complete streets elements, and install traffic operations system elements along SR 1 in San Mateo County, California. The proposed project would include pavement rehabilitation; replacing existing drainage inlets, culverts, and dikes; replacing existing guardrails with Midwest guardrail systems; replacing existing crash cushions; upgrading curb ramps; implementing complete street elements; upgrading signal poles; installing conduits; installing traffic operation system elements (intersection cameras, closed-circuit television cameras, variable message signs, and traffic monitoring stations); and relocating and/or replacing utility cabinets.

Quad Name **Montara Mountain OE W**
Quad Number **37122-E5**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) - X
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) - X
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) - X

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat - X
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat - X

SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat - X

ESA Marine Invertebrates

Range Black Abalone (E) - X
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat - X

ESA Sea Turtles

East Pacific Green Sea Turtle (T) - X
Olive Ridley Sea Turtle (T/E) - X
Leatherback Sea Turtle (E) - X
North Pacific Loggerhead Sea Turtle (E) - X

ESA Whales

Blue Whale (E) - X
Fin Whale (E) - X
Humpback Whale (E) - X
Southern Resident Killer Whale (E) - X
North Pacific Right Whale (E) - X
Sei Whale (E) - X
Sperm Whale (E) - X

ESA Pinnipeds

Guadalupe Fur Seal (T) - X
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH - X
Chinook Salmon EFH -
Groundfish EFH - X

Coastal Pelagics EFH - X
Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans - X
MMPA Pinnipeds - X

Quad Name **Half Moon Bay**
Quad Number **37122-D4**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) - X
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) - X
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) - X

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat - X
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat - X
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -

sDPS Green Sturgeon Critical Habitat - X

ESA Marine Invertebrates

Range Black Abalone (E) - X
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat - X

ESA Sea Turtles

East Pacific Green Sea Turtle (T) - X
Olive Ridley Sea Turtle (T/E) - X
Leatherback Sea Turtle (E) - X
North Pacific Loggerhead Sea Turtle (E) - X

ESA Whales

Blue Whale (E) - X
Fin Whale (E) - X
Humpback Whale (E) - X
Southern Resident Killer Whale (E) - X
North Pacific Right Whale (E) - X
Sei Whale (E) - X
Sperm Whale (E) - X

ESA Pinnipeds

Guadalupe Fur Seal (T) - X
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH - X
Chinook Salmon EFH -
Groundfish EFH - X
Coastal Pelagics EFH - X
Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office
562-980-4000

MMPA Cetaceans - X
MMPA Pinnipeds - X

NOTE NEW PHONE # BELOW

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Appendix E. Title VI Policy Statement

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY Gavin Newsom, Governor

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
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SACRAMENTO, CA 94273-0001
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FAX (916) 653-5776
TTY 711
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Making Conservation a California Way of Life.

August 2020

NONDISCRIMINATION POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964, ensures "*No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.*"

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

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

For information or guidance on how to file a complaint, or obtain more information regarding Title VI, please contact the Title VI Branch Manager at (916) 324-8379 or visit the following web page: https://dot.ca.gov/programs/civil-rights/title-vi.

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

Toks Omishakin
Director

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

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