San Mateo State Route 1 Safety Barrier Project

San Mateo County, California
District 04 SM-1 (36.49/38.31)
EA: 04 0Q610/ Project ID 0418000123

Initial Study with Negative Declaration

Prepared by the
California Department of Transportation

May 2022

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General Information about this Document

The California Department of Transportation (Caltrans) has prepared this Initial Study with Negative Declaration for the proposed project located in San Mateo County, California. Caltrans is the lead agency under the California Environmental Quality Act (CEQA). The document tells you 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 alternatives, and the proposed avoidance and minimization measures. The Initial Study was circulated to the public for 30 days between January 12, 2022 and February 11, 2022. Comments received during this period are included in Chapter 3. Elsewhere throughout this document, a vertical line in the margin indicates a change made since the draft document circulation. Minor editorial changes and clarifications have not been so indicated. This document may be downloaded at the following website: https://dot.ca.gov/caltrans-near-me/district-4/d4-popularlinks/d4-environmental-docs.

Alternative Formats:

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04-SM-1-PM 36.49/38.31
EA No 04-0Q610
Project No. EFIS 0418000123

San Mateo State Route 1 Safety Barrier Project
(Post Miles 04 SM-1-36.49 /38.31)

INITIAL STUDY WITH 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 Local Coastal Program
United States Fish and Wildlife Service
California Department of Fish and Wildlife

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California Department of Transportation
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April 29, 2022
Date of Approval

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Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes a safety barrier project (project) along State Route (SR) 1, from post mile (PM) 36.49 to PM 38.31 north of the community of Montara in San Mateo County, California.

Determination

Caltrans has prepared an Initial Study (IS) for this project, and has determined 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 on aesthetics and biological resources, including the California red-legged frog, and San Francisco garter snake. 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.

for

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

April 30, 2022
Date

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Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) is the California Environmental Quality Act (CEQA) lead agency and sponsor for the proposed San Mateo (SM) 1 Safety Barrier Project (project) and has prepared this Initial Study with Negative Declaration (IS/ND).

1.1.1 CEQA Lead Agency Status

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 and sponsor for the project and has prepared this IS/ND for the project.

1.1.2 Project Location

The project is along State Route (SR) 1 in San Mateo County, from post mile (PM) 36.49 to PM 38.31 (from 0.09 mile south of 2nd Street in the community of Montara to 0.38 mile north of the Gray Whale Cove State Beach parking lot) (Figure 1-1).

Along the San Mateo County coastline from Pacifica to Santa Cruz, SR 1 is known as the “Cabrillo Highway” and operates as a conventional highway. The route provides primary access to several communities as well as access to beaches, parks, and other attractions along the coast, making it a popular route for tourists. Within the project limits, SR 1 is an undivided two-lane conventional highway that runs north-south with 11- to 12-foot lanes and 1- to 4-foot outside shoulders. New barriers would be installed at 11 locations along SR 1 within the project limits.

Figure 1-1 Project Location

1.1.3 Local Planning

The project is within the permitting jurisdiction of the San Mateo County Local Coastal Program (SMLCP). Development in the Coastal Zone will require a Coastal Development Permit (CDP) or an exemption from CDP requirements. For a permit to be issued, the development must comply with the policies of the SMLCP. The CDP to be issued by San Mateo County will be appealable to the California Coastal Commission (CCC) because the project is located between the sea and the first through public road paralleling the sea. Accordingly, the SMLCP and the public access/recreation policies of the Coastal Act will be the standard of review for the proposed project.

1.2 Purpose and Need

The purpose of the project is to enhance traffic safety by reducing run-off-the-road accidents from errant vehicles within the project limits.

The project is needed because there were 33 run-off-the-road accidents (including 24 injuries and one fatality) occurred on this segment of SR 1 between October 10, 2017 and September 30, 2020 (the most recent 3-year data reporting period) (Caltrans Office of Traffic Safety 2021). The accident rates within the project limits were more than 1.5 times greater than the statewide average for similar facilities. Run-off-the-road accidents are more common within the project limits for three reasons: edge of pavement condition, steep drop offs, and lack of permanent barriers. Some portions of the roadway have little to no shoulder backing (a slight slope) along the edge of the pavement (Caltrans 2006). These sections of roadway instead have a non-tapered edge, which can be more difficult to recover from if vehicle tires come into contact with the edge of the pavement. In addition, many places along the southbound side of SM 1 within the project limits have a steep drop off to the ocean below the roadway. Lastly, some sections of the roadway adjacent to the steep drop offs are missing permanent barriers. If these issues are not addressed, there is a risk that vehicles may continue to drive off the highway, causing severe injury or death to motorists and passengers as well as Caltrans maintenance workers.

1.3 Project Description

The project would be constructed along SR 1 in San Mateo County, from PM 36.49 to PM 38.31 (from 0.09 mile south of 2nd Street in the community of Montara to 0.38 mile north of the Gray Whale Cove State Beach parking lot). The proposed scope of work includes replacing all existing nonstandard existing metal-beam guardrail (MBGR) with

standard Midwest Guardrail System (MGS); replacing temporary K-rail with safety barriers; installing retaining walls and safety barriers at multiple locations; and upgrading existing regulatory (white color) and warning (yellow color) signs to current standards.

Three different barrier types are under consideration for the build alternatives: MGS, Concrete Barrier (CB) Type 85, and Type ST-75. All proposed safety barriers would be “see-through” barriers. Examples of these three barrier types are shown in Figure 1-2. New safety barrier approach and departure ends would require new end treatments unless they are buried into existing embankments.

Table 1-1 describes the locations where existing barriers would be removed and where new barriers would be constructed as part of Build Alternative 1. Figure 1-3 shows the locations of each barrier and Figure 1-4 shows the types of barriers proposed at each location.

Table 1-1 Proposed New Safety Barrier Locations for Build Alternative 1

Location Number	Direction: Northbound/ Southbound (NB/SB)	Remove Existing MBGR; Parapet Wall[1]; or K-Rail (Linear Feet)	Proposed Barrier Type and Length (Feet)
1	SB	MBGR (139)	MGS (140)
2	NB	MBGR (135)	MGS (220)
3	SB	Parapet Wall (93)	CB Type 85 or ST-75 (110)
4	SB	K-Rail (59)	MGS (60)
5	SB	MBGR (147)	MGS (280)
6	SB	MBGR (158) Parapet Wall (88) K-Rail (113)	MGS (130) and either CB Type 85 or ST-75 (87)
7	SB	MBGR (123) K-Rail (146)	MGS (279)
8	SB	MBGR (80)	MGS (730)
9	SB	MBGR (409)	MGS (409)
10	SB	N/A	MGS (520)
11	NB	N/A	MGS (590)

CB = concrete barrier
K-rail = temporary safety barrier
MBGR = metal beam guardrail
MGS = Midwest guardrail system
N/A = not applicable
NB = northbound
SB = southbound
ST = Steel
1. A parapet is a barrier that is an extension of a retaining wall at edge of the roadway.

Simulation of MGS at Locations 10 and 11

Simulation of CB Type 85 at Location 3

Figure 1-2 Barrier Types Under Consideration (Page 1 of 2)

Simulation of Type ST-75 at Location 6

Figure 1-2 Barrier Types Under Consideration (Page 2 of 2)

Figure 1-3 Barrier Locations (Page 1 of 4)

Figure 1-3 Barrier Locations (Page 2 of 4)

Figure 1-3 Barrier Locations (Page 3 of 4)

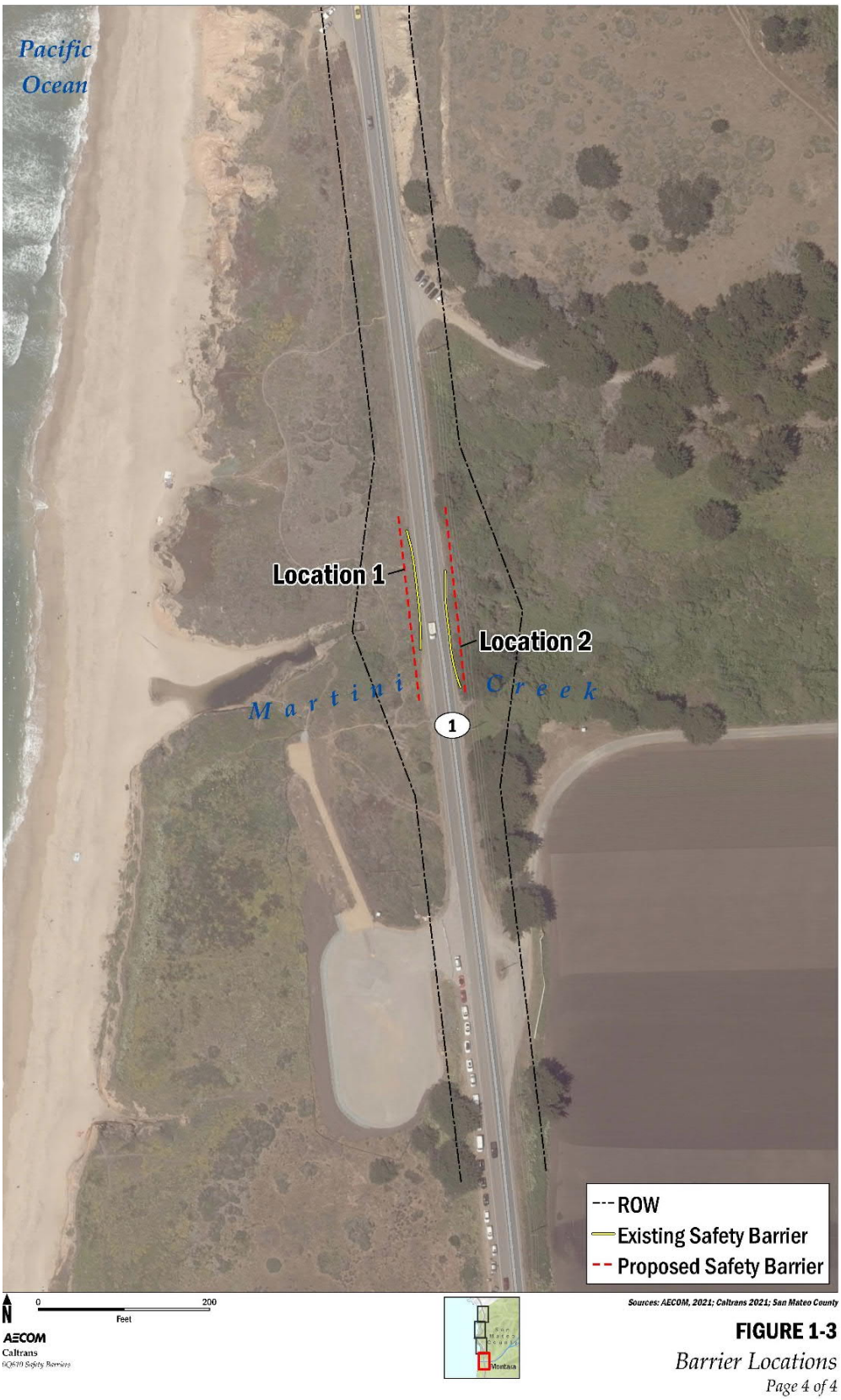

Figure 1-3 Barrier Locations (Page 4 of 4)

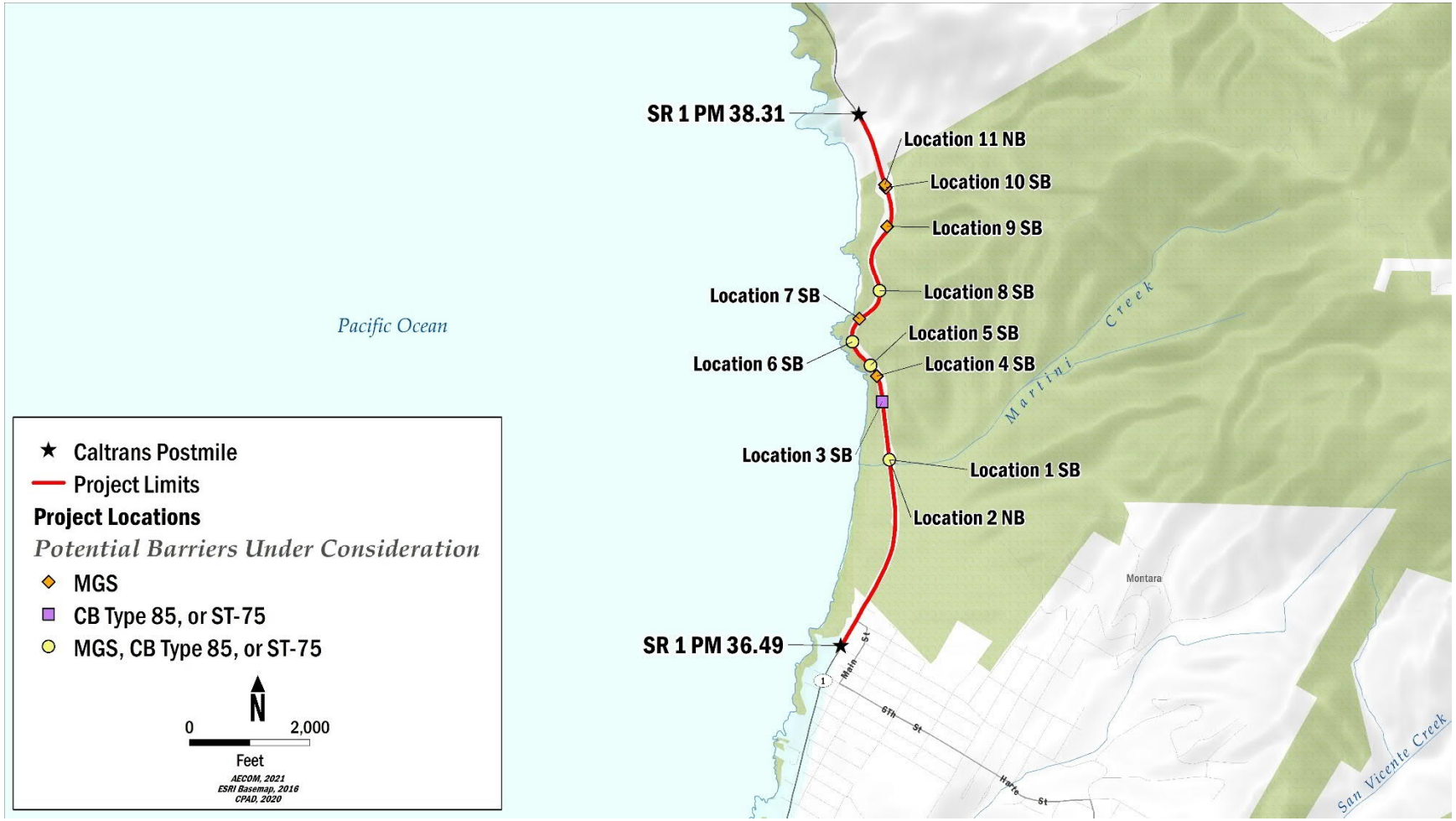

Figure 1-4 Barrier Types Under Consideration by Location

1.4 Build Alternatives – Proposed Project

This section describes project features common to both build alternatives as well as the unique features of Build Alternative 1 and Build Alternative 2.

1.4.1 Common Design Features of the Build Alternatives

The following features would be included in the project with the selection of either Build Alternative:

- All existing nonstandard MBGR would be replaced with standard MGS or safety barrier.
- Existing temporary safety barrier (K-rail) would be replaced with safety barriers at three locations.
- Existing regulatory (white color) and warning (yellow color) signs would be upgraded to current standards.

1.4.2 Build Alternative 1

Under Build Alternative 1, all existing nonstandard MBGR and K-rail at 7 locations (1, 2, 4, 5, 7, 8, and 9) would be replaced with new MGS. New safety barriers (either CB Type 85 [see-through] or California ST-75 [see-through]) would be installed at locations 3 and 6. MGS would also be installed at two locations (locations 10 and 11) that currently do not have barriers. Build Alternative 1 would not include shoulder widening (see Table 1-1 in Section 1.3 above).

- Existing MBGR and K-rail would be replaced with MGS.
- New safety barriers would be installed at locations that currently do not have safety barriers.
- The maximum foundation dimensions for the new safety barriers would be 3 feet deep by 3 feet, 2 inches wide.
- A minimum 3-foot horizontal clearance from the outside face of the safety barrier to the shoulder backing hinge point would be provided.
- Existing parapet walls would be removed to a depth of 1 foot, 8 inches below the existing edge of shoulder elevation. The top of the existing wall would be replaced with the proposed safety barrier.

- The existing non-standard shoulder width would stay approximately the same.

During the public review process for the proposed project, CCC demonstrated a preference for Build Alternative 1. Additionally, CCC recommends that for those locations at which CB Type 85 or California ST-75 are under consideration, that Type ST-75 is selected due to fewer viewshed impacts. A final decision on barrier type selection will be made during the design phase and the coastal permitting process with the County.

1.4.3 Build Alternative 2

Under Build Alternative 2, all existing nonstandard MBGR would be replaced with new MGS, and new safety barriers (either CB Type 85 [see-through] or California ST-75 [see-through]) would be installed. In addition, the existing shoulder would be widened to a maximum of 5 feet in some locations to meet the standard horizontal clearances from the inside face of the new safety barrier to the existing edge of the traveled way (i.e. edge of pavement).

Where necessary, existing parapet walls would be removed to a depth of 1 foot 8 inches below the existing edge of shoulder elevation.

To accommodate shoulder widening, soldier pile retaining walls would be constructed at some locations. They would range from 5 to 12 feet high. The solider pile walls would require cast-in-drilled-hole (CIDH) piles, which would be drilled to a depth of 15 to 40 feet with timber lagging connecting the piles. On top of the soldier pile walls, a 1-foot-8-inch-deep by a maximum 10-foot-wide concrete slab would be constructed. An example of a soldier pile retaining wall from another Caltrans project is shown in Figure 1-5.

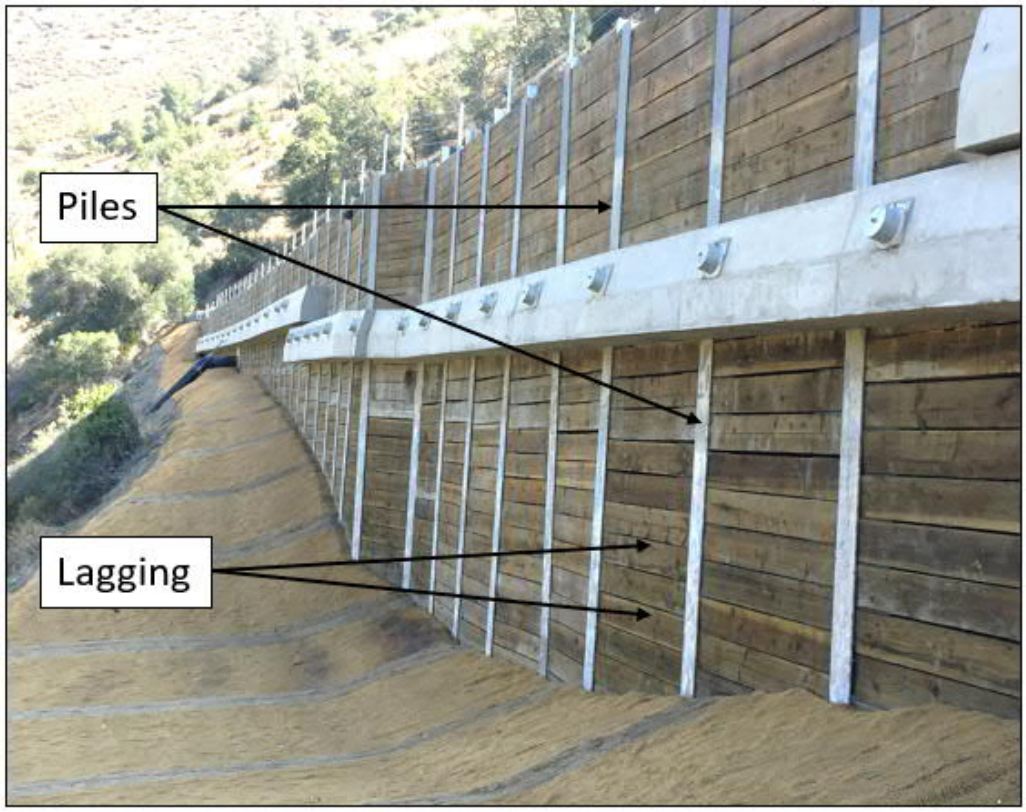

Figure 1-5 Example Soldier Pile Retaining Wall

Table 1-2 describes the locations where existing barriers would be removed and where new barriers would be constructed as part of this Build Alternative.

Table 1-2 Proposed New Safety Barrier Locations under Build Alternative 2

Location Number	Direction: Northbound/ Southbound (NB/SB)	Remove Existing MBGR; Parapet Wall; or K-Rail (Linear Feet)	Proposed Barrier Type and Length (Feet)	Proposed Shoulder Widening (Feet) CB Type 85 or ST-75 Only	Proposed Length of New Retaining Wall (Feet)* CB Type 85 or ST-75 Only
1	SB	MBGR (139)	MGS (150)	N/A	N/A
2	NB	MBGR (135)	CB Type 85 or ST-75 or (170) MGS (50)	1 to 2	170
3	SB	Parapet Wall (93)	CB Type 85 or ST-75 (100) MGS (50)	2 to 3	100
4	SB	K-rail (59)	MGS (109)	N/A	N/A
5	SB	MBGR (147)	MGS (100) or CB Type 85 or ST-75 (100)	2 to 3	100
6	SB	106 MBGR (158) Parapet Wall (88) K-rail (113)	MGS or (50) or CB Type 85 or ST-75 (293)	0 to 3	293
7	SB	125 MBGR (123) K-rail (146)	MGS (269)	2 to 3	N/A
8	SB	MBGR (80)	MGS (630) or CB Type 85 or ST-75 (100)	2 to 3	100
9	SB	MBGR (409)	MGS (409)	N/A	N/A
10	SB	N/A	MGS (520)	3 to 5	N/A
11	NB	N/A	MGS (590)	3 to 4	N/A

* The actual length and the type of proposed retaining walls would be determined during detailed design, following project approval.

CB = concrete barrier
K-rail = temporary safety barrier
MBGR = metal beam guardrail
MGS = Midwest guardrail system
N/A = not applicable
NB = northbound
SB = southbound
ST = Steel

1.4.4 No Build Alternative

Under the No Build Alternative, the existing barriers would remain unchanged. The No Build Alternative would not address the purpose and need of the project. If no action is taken, there would be continued risk that vehicles may drive off the highway, causing severe injury or death to the motorists/passengers or maintenance workers.

1.4.5 Identification of a Preferred Alternative

After the public circulation period, all comments from the public and reviewing agencies were considered, the Project Development Team (PDT) selected a preferred alternative, and Caltrans made a final determination of the project's effect on the environment.

The PDT identified Build Alternative 1 as the Preferred Alternative on March 1, 2022. The following summarizes the reasons for choosing Build Alternative 1 over Build Alternative 2 or the No Build Alternative.

While Caltrans received many public comments during the public review period, no new substantive information was received leading to the identification of new alternatives that meet the scope, need, and purpose of the project; or new or more severe environmental impacts than were disclosed in the Initial Study (see Chapter 3 for public comments and Caltrans' responses).

Also, no new information was received to substantially change Caltrans' environmental commitments record for the project (Appendix B). Thus, on March 1, 2022, the PDT identified Build Alternative 1 as the Preferred Alternative for the following reasons:

- Build Alternative 1 would best meet the need and purpose of the project over the No Build Alternative.
    - Compared to the No Build Alternative, Build Alternative 1 would enhance traffic safety by reducing run-off-the-road accidents from errant vehicles within the project limits while minimizing environmental impacts.
- Build Alternative 1 does not include shoulder widening and would minimize impacts to special-status wildlife species.
    - Compared to Build Alternative 2 (which does include shoulder widening at some locations), Build Alternative 1 would minimize impacts to California red-legged frog and San Francisco garter snake habitat.

  - Compared to Build Alternative 2, Build Alternative 1 would result in no impacts to potentially jurisdictional California Coastal Commission wetlands. However, construction of Build Alternative 2 would result in 0.82 acre of total impacts to wetlands.

- The construction schedule for Build Alternative 1 is shorter.
  - Compared to Build Alternative 2, Build Alternative 1 could be constructed in one season (approximately 55 working days) rather than two seasons (approximately 230 working days).
- Build Alternative 2 raises a wider array of and more adverse impacts to coastal resources and permitting challenges within the SMLCP compared to Build Alternative 1.
  - Given potentially substantial impacts to coastal resources and comments received from the County and CCC during the public circulation period, Build Alternative 2 does not appear to be a viable alternative.

With the identification of Build Alternative 1 as the Preferred Alternative, mitigation measures are no longer necessary. Therefore, a Negative Declaration (as opposed to a Mitigated Negative Declaration) has been adopted for the project.

1.5 Right-of-Way Requirements

The project would occur completely within Caltrans' right-of-way. No temporary easements or permanent acquisitions would be needed to construct the project.

1.6 Construction Methodology, Schedule, and Equipment

The details described in this section represent the most likely procedure for the construction of the project. Construction procedures would continue to be refined during detailed design in coordination with regulatory agencies, if required. Although some details of project construction would be left to the discretion of the contractor who is awarded the project, every effort has been made to articulate project details with the potential to affect the environment.

Due to limited roadway and shoulder widths, the existing use of temporary K-rail, and the presence of overhead utility lines, there may be limitations on the types of equipment and vehicles that can be used during construction. Although staging areas

are anticipated, construction work would also be along the outside shoulders. Construction crews would access the construction sites from the existing roadway. During construction of the project, the lane adjacent to active work areas would need to be closed on a temporary basis; this would require one-way reverse traffic control during working hours, with temporary K-rail to protect the work area. Existing pullouts would most likely be needed to stockpile construction material and for use as construction staging area. These plans will be finalized during the detailed design phase.

1.6.1 Staged Construction and Traffic Management

To minimize potential impacts on the traveling public, construction would be limited to only one or two locations at any time. Access to construction locations would be from shoulders and in the travel lanes using one-way reverse traffic control. At the beginning of each stage, traffic on the highway would be shifted either west or east away from the work area. Then K-rail would be installed or repositioned to provide protection for construction workers from active traffic. In areas with steep slopes, a temporary containment platform may be required as fall-protection for workers as well as containment for debris. The containment platform would prevent construction debris from falling outside the construction area. Existing MBGR would be removed with hand tools. The pressure-treated post would be pulled out using a 10-ton truck with mounted auger. The contractor would then drill and install the MGS posts using a 10-ton truck with mounted auger. Examples of barrier installations from other projects are depicted in Figure 1-6.

Figure 1-6 Examples of Barrier Installations (Page 1 of 2)

Figure 1-6 Examples of Barrier Installations (Page 2 of 2)

1.6.2 Schedule

Work will be conducted between June 1 and October 15 to avoid the times when California red-legged frog (*Rana draytonii*) and San Francisco garter snake (*Thamnophis sirtalis tetrataenia*) are most active. Work may be conducted as early as April 15 but will be determined in consultation with the U.S. Fish and Wildlife Service (USFWS). The construction schedule may be shifted to stay within the work window restrictions. It is anticipated that the implementation of Build Alternative 1 (the Preferred Alternative) would require one construction season (approximately 55 working days).

1.6.3 Bicycle and Pedestrian Access Options

SR 1 within the project limits is open to pedestrians and cyclists. During construction, access to the roadway for pedestrians and cyclists would be maintained. Appropriate signage would be placed at the ends of the project limits to share the road. Cyclists would be able to share the road with normal traffic. Because the shoulders would not be available to the cyclists, proper temporary signs would be installed. The proposed project would not result in a narrowing of existing shoulder widths within the project limits. After construction, bicycle and pedestrian access would be returned to its existing condition. In addition, during the design phase, Caltrans will explore options to improve

shoulder widths where feasible and where such widening would not impact sensitive resources.

1.6.4 Equipment

Typical construction equipment potentially used during construction of the project is listed below:

- Rock drill
- Paver
- Scraper
- Jackhammer
- Concrete mixer truck
- Pneumatic tools
- Chain saw
- Roller
- Tractor
- Concrete pump truck
- Generator
- Compactor (ground)
- Compressor (air)
- Backhoe
- Vibratory concrete mixer
- Pumps
- Truck-mounted drill/drill rig truck
- Front-end loader
- Excavator
- Mini-excavator
- Mini-loader
- Dump truck
- Water truck

Construction equipment and materials would be stored in opened areas within the project limits that would be identified by Caltrans maintenance and right-of-way staff during the detailed design phase.

1.7 Project Funding

This project is funded by the State Highway Operation and Protection Program (SHOPP) under 201.010 “safety improvements” for the 2023/2024 fiscal year.

1.8 Project Features

The project contains several standardized project features that are employed on most, if not all, of Caltrans projects and were not developed in response to any specific potential environmental impact resulting from the project. Project features are separated out from avoidance and minimization measures (AMMs), which directly relate to the impacts resulting from the proposed project. AMMs and other measures are discussed separately within each environmental section.

Table 1-3 lists the features of the project that would be implemented by Caltrans to reduce or avoid potential impacts to the human and natural environment.

Table 1-3 Project Feature Summary

Resource Area	Project Feature Reference	Project Feature
Aesthetics/ Visual	Feature AES-1	**Construction Work Areas.** 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 avoid light trespass in residential areas through directional lighting, shielding, and other measures as needed. • All disturbed ground surfaces would be restored and treated with erosion control.
Air Quality	Feature AQ-1	**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	Feature AQ-2	**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.
Biological Resources	Feature BIO-1	**Worker Environmental Training:** Construction personnel will attend a mandatory environmental education program delivered by a qualified Caltrans biologist prior to taking part in site construction. The program will focus on the conservation measures that are relevant to an employee's job-specific responsibilities and will include an explanation as how to best avoid take of California red-legged frog and San Francisco garter snake. At a minimum, the training will include a description of species; how they might be encountered within the project area; their status and protection. 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 California red-legged frog and San Francisco garter snake, compliance reminders, and relevant contact information. Documentation of the training, including sign-in sheets, will be kept on file and made available to regulatory agencies upon request.
Biological Resources	Feature BIO-2	**Proper Use of Erosion Control Devices.** To avoid entanglement or injury of susceptible, protected biological resources, erosion control materials that use plastic or synthetic monofilament netting will not be used during the project's construction.

Resource Area	Project Feature Reference	Project Feature
Biological Resources	Feature BIO-3	**Bird Protection Measures.** To avoid take of migratory birds during the bird nesting season (February 1 to September 30): a qualified biologist(s) would conduct preconstruction nesting bird surveys no more than three days prior to construction. If an active nest is discovered, the biologists would establish an appropriate exclusion buffer around the nest. The area within the buffer would be avoided until the young are no longer dependent on the adults or the nest is no longer active. If a nesting special-status bird species is discovered, an agency approved biologist would notify the USFWS and/or California Department of Fish and Wildlife (CDFW) for further guidance. Partially constructed and inactive nests would be removed to prevent occupation.
Biological Resources	Feature BIO-4	**Night Lighting.** Artificial lighting during nighttime hours will be minimized to the maximum extent practicable. Lighting must be directed to illuminate the immediate work area only, while minimizing spillage into adjacent areas.
Biological Resources	Feature BIO-5	**Trash Control.** Food and food related trash items would be secured in sealed trash containers and removed from the site at the end of each day.
Biological Resources	Feature BIO-6	**Pets.** Pets would be prohibited from entering the project limits.
Biological Resources	Feature BIO-7	**Firearms.** Firearms would be prohibited within the project limits except for those carried by authorized security personnel or local, state, or federal law enforcement.
Cultural Resources	Feature CULT-1	**Stop Work Upon Discovery of Cultural Materials.** If cultural materials are discovered during construction, all earth-moving activities within a sixty-foot radius would be halted until a Caltrans Professionally Qualified Staff (PQS) can assess the nature and significance of the find.
Cultural Resources	Feature CULT-2	**Additional Actions if Cultural Materials Contain Human Remains.** If Caltrans PQS determines that cultural materials contain human remains, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains. Caltrans' Office of Cultural Resource Studies (OCRS) would contact the San Mateo County Coroner. Pursuant to Public Resource Code (PRC) Section 5097.98, if the remains are thought by the coroner to be Native American, the coroner would notify the Native American Heritage Commission, which would then notify the Most Likely Descendent. OCRS would work with the Most Likely Descendent on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.
Greenhouse Gas Emissions	Feature GHG-1	**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.
Hazardous Materials	Feature HAZ-1	**Unanticipated Hazardous Waste.** Caltrans standards will be followed for the proper handling and disposal of any unanticipated hazardous waste discovered during construction.

Resource Area	Project Feature Reference	Project Feature
Hazardous Materials	Feature HAZ-2	**Aerial Deposited Lead (ADL).** The project will implement Best Management Practices (BMPs) according to Caltrans specifications special provision 12-11.09 “Minimal Disturbance of Regulated Material Containing ADL.”
Hydrology and Water Quality	Feature WQ-1	**Water Quality Best Management Practices (BMPs).** The potential for adverse effects to water quality will be avoided by implementing temporary and permanent BMPs outlined in Section 7-1.01G 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 storm water and non-stormwater discharges from Caltrans facilities. A Water Pollution Control Plan would be developed for the project, as one is required for all projects that have less than one acre of soil disturbance. Protective measures will be included in the contract, including, at a minimum: • No discharge of pollutants from vehicle and equipment cleaning are allowed into the storm drain or water courses. • Vehicle and equipment fueling and maintenance operations must be 50 feet away from water courses. • Concrete wastes are collected in washouts and water from curing operations is collected and disposed of and not allowed into water courses. • Dust control will be implemented, including use of water trucks and tackifiers to control dust in excavation and fill areas, rocking temporary access roads entrances and exits, and covering temporary stockpiles when weather conditions require.
Tribal Cultural Resources	Feature TRIBE-1	**Protect Discovered Tribal Cultural Resources with Temporary Fencing:** If any tribal cultural resources are found during construction, a Caltrans PQS archaeologist shall determine whether the resources can be avoided by the project. If the resources can be avoided, the resources would be delineated on the ground with temporary fencing and avoided by construction. No construction-related activities or staging are permitted within these areas.

1.8.1 Permits and Approvals Needed

Table 1-4 describes the permits and approvals needed for the project.

Table 1-4 Permits and Approvals

Agency	Permit, Authorization, or Agreement	Permit Status
San Mateo County	Coastal Development Permit	Application submittal anticipated during the design phase
U.S. Fish and Wildlife Service	Biological Opinion for California red-legged frog and San Francisco garter snake	Consultation ongoing

Chapter 2 California Environmental Quality Act Evaluation

The proposed project by Caltrans is subject to CEQA and project documentation has been prepared in compliance with CEQA. Caltrans is the lead agency under CEQA. This chapter evaluates potential environmental impacts of the proposed project, as described in Chapter 1 as they relate to the CEQA checklist to comply with State CEQA Guidelines (Title 14 California Code of Regulations, Division 6, Chapter 3, Section 15091). Unless otherwise noted, the analysis and conclusions in this chapter apply to both alternatives under consideration.

2.1 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by the project. Please see the full CEQA Environmental Checklist for additional information.

Table 2-1 Environmental Factors Potentially Affected

Potentially Affected	Environmental Factor
Yes	Aesthetics
No	Agriculture and Forestry
No	Air Quality
Yes	Biological Resources
No	Cultural Resources
Yes	Energy
Yes	Geology/Soils
Yes	Greenhouse Gas Emissions
Yes	Hazards and Hazardous Materials
Yes	Hydrology/Water Quality
Yes	Land Use/Planning
No	Mineral Resources
No	Noise
No	Population/Housing
No	Public Services
No	Recreation
Yes	Transportation/Traffic
No	Tribal Cultural Resources
No	Utilities/Service Systems
No	Wildfire
No	Mandatory Findings of Significance

2.2 CEQA Environmental Checklist

This checklist (presented at the beginning of each resource section below in the form of a table listing the pertinent questions applicable to the resource and four columns where the degree of impact is indicated) identifies physical, biological, social, and economic factors that might be affected by the project. In many cases, technical studies performed in connection with the project indicate that there are no impacts to a particular resource. A “no impact” answer in the last column reflects this determination. The words “significant” and “significance” used throughout the checklist are related to CEQA impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

Both project features and AMMs will be part of this project. Project features, which can include both design elements of the project, and standardized measures that are applied to all or most Caltrans projects such as best management practices (BMPs) and measures included in Caltrans’ Standard Plans and Specifications or as Standard Special Provisions, are considered to be an integral part of the project and have been considered prior to any significance determinations documented below; see Section 1.9 for a detailed discussion of these features. All proposed measures are provided in Appendix B.

Potentially affected environmental factors are indicated in Table 2-1. All environmental factors that could be potentially affected are marked with a yes. All of the environmental factors that would not be affected by the project are marked with a no.

2.3 Aesthetics

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	No	No	Yes	No
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	No	No	No	Yes
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?	No	No	No	Yes
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	No	No	No	Yes

The Caltrans Office of Landscape Architecture prepared the “Visual Impact Assessment: Bridge Rail Replacement” (VIA; Caltrans 2021a) for the project. The findings of the VIA are analyzed as they apply to CEQA in this section.

The project corridor is defined as the land that is visible from, adjacent to, and outside the highway right-of-way. Within the project limits, SR 1 is an undivided two-lane conventional highway. It is eligible for state scenic highway designation and is recognized as a county scenic corridor. The highway winds around sandstone cliffs directly above the Pacific Ocean, which allows travelers expansive views to the water and horizon, sometimes narrowed by steep hills abutting the highway. Natural features dominate the visual landscape of the predominantly undeveloped project corridor. The narrow shoulders and the scale of the steep slopes against the highway accentuate the natural features and dramatic views to the ocean. The continuity of the coastline contrasts with the changing form of the inland topography, which varies from gentle,

rolling hills set back behind coastal plains at the southern end to dramatic steep hillside cut slopes abutting the highway, creating a diversity of visual experiences.

The project corridor maintains moderate to high vividness as the highway travels between sandstone coastal bluffs along the shore and the rolling hills and high peaks in the coast hills on the inland side. This area exhibits a moderate to high degree of intactness, with invasive vegetation prevalent, but sparse built features that are mostly limited to overhead utility lines; parking areas for recreational access; and traffic safety features, including safety barriers and traffic signs. Two existing downslope retaining walls are visible from nearby beaches and can be glimpsed from the highway. Unity is moderate to high as the highway winds through the terrain, and signs and other built elements are of a character and scale suitable to the landscape. Some segments of K-rail occur along the segment, partially obstructing views to the ocean and reducing intactness and unity.

The VIA included visual simulations depicting changes with the proposed project at areas that would most clearly demonstrate the potential change in the visual resources within the project limits. These areas include locations 1 and 2, 3, 5, 6, 8, and 10 and 11. Simulations for these locations are shown in Figure 2-1 through Figure 2-6 for select build alternatives/options and are typical of the changes that are anticipated as a result of this project. Potential changes in the visual resources at locations 4, 7, and 9 would be similar to that depicted in the figures.

a) Less than Significant Impact

The permanent changes most likely to be noticed by the traveling public would include the new railing and safety barrier types within the project limits. In addition to the permanent changes, the traveling public would be exposed to temporary visual impacts due to construction activities, containment platforms, equipment storage, and one-way traffic control.

Temporary impacts during construction could have a negative impact to the public views from the project site and its surroundings, but these impacts would be less than significant due to their limited duration and the implementation of Project Features and AMMs listed in Appendix B.

Existing Conditions

Build Alternative 2 with Shoulder Widening and CB Type 85

Figure 2-1 Looking North towards Martini Creek near Locations 1 and 2 (Page 1 of 2)

Build Alternative 2 with Shoulder Widening and ST-75

Figure 2-1 Looking North towards Martini Creek near Locations 1 and 2 (Page 2 of 2)

Existing Conditions

Build Alternative 1 with CB Type 85

Figure 2-2 Looking South toward Montara Beach near Location 3 (Page 1 of 3)

Build Alternative 1 with Steel Barrier ST-75

Build Alternative 2 with Shoulder Widening and CB Type 85

Figure 2-2 Looking South toward Montara Beach near Location 3 (Page 2 of 3)

Build Alternative 2 with Shoulder Widening and ST-75

Figure 2-2 Looking South toward Montara Beach near Location 3 (Page 3 of 3)

Existing Conditions

Build Alternative 2 with Shoulder Widening and CB Type 85

Figure 2-3 Looking South toward Montara Beach near Location 5 (Page 1 of 2)

Build Alternative 2 with Shoulder Widening and ST-75

Figure 2-3 Looking South toward Montara Beach near Location 5 (Page 2 of 2)

Existing Conditions

Build Alternative 1 with CB Type 85

Figure 2-4 Looking South toward Montara Beach near Location 6 (Page 1 of 3)

Build Alternative 1 with ST-75

Build Alternative 2 with Shoulder Widening and CB Type 85

Figure 2-4 Looking South toward Montara Beach near Location 6 (Page 2 of 3)

Build Alternative 2 with Shoulder Widening and ST-75

Figure 2-4 Looking South toward Montara Beach near Location 6 (Page 3 of 3)

Existing Conditions

Build Alternative 2 with Shoulder Widening and CB Type 85

Figure 2-5 Looking South near Location 8 (Page 1 of 2)

Build Alternative 2 with Shoulder Widening and ST-75

Figure 2-5 Looking South near Location 8 (Page 2 of 2)

Existing Conditions

Build Alternative 1 with MGS

Figure 2-6 Looking North near Locations 10 and 11 (Page 1 of 2)

Build Alternative 2 with 5-foot shoulders and MGS

Figure 2-6 Looking North near Locations 10 and 11 (Page 2 of 2)

The project would replace existing MBGR with MGS and install new MGS at multiple locations. MGS would not block existing views. In addition, new safety barriers would be constructed at the outside shoulder edge along the southbound lane at four locations within the project limits. These new segments of safety barrier would be taller and visually bulkier than the existing MBGR. However, open, see-through type barriers would be constructed to maintain scenic views to the ocean beyond. Due to their limited quantity and scale, along with their "see-through" design that maintains views of the ocean and the surrounding landscape, they would not fundamentally alter the scenic character or quality. Impacts would be less than significant.

b) No Impact

The project corridor is not within a designated state scenic highway. The project corridor is eligible for scenic designation, but neither of the build alternatives would substantially damage visual resources within the project limits. No impact would occur.

c) No Impact

The project would be constructed along nonurbanized segments of SR 1 in San Mateo County. Visual change resulting from construction of new MGS and safety barriers,

construction of replacement retaining walls, and upgrading of existing traffic signs would not substantially degrade the existing character and quality of the roadway. Project features will be in character with existing built features within the project limits.

d) No Impact

The project does not include new lighting. Exposed metal in new MGS and safety barriers installed as part of the project will be treated with a matte finish to avoid creating a new source of substantial glare. No impact would occur.

2.4 Agriculture and Forest Resources

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	No	No	No	Yes
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	No	No	No	Yes
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	No	No	No	Yes
d) Result in the loss of forest land or conversion of forest land to non-forest use?	No	No	No	Yes
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	No	No	No	Yes

a), b), c), and d) No Impact

The project would be constructed entirely within Caltrans' right-of-way. The project includes the replacement of existing guardrails and safety barriers, as well as the construction of new retaining walls and additional safety barriers at eleven locations along SR 1 between PM 36.49 to 38.31. There is no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance within the project footprint. The project footprint does not contain land zoned for agricultural uses, land under the Williamson Act, or land zoned as forest land, timber land, or timberland production. There would be no loss or conversion of forest land to non-forest land, or any other changes to the existing environment that would convert farmland to nonagricultural use or forest land to non-forest use. Therefore, there would be no impact to agriculture and forest resources as a result of the project.

2.5 Air Quality

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

a) No Impact

The project is in the San Francisco Bay Area Air Basin and is within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD), the ARB, the San Mateo County General Plan (San Mateo County 1986), and the San Mateo County Local Coastal Program (San Mateo County 2013a). The project would not conflict with or obstruct the implementation of the pertinent air quality policies and goals of these agencies. The project would not add capacity and would therefore not result in operational degradation of air quality. Although construction is anticipated to result in short-term emissions, construction air pollutants are expected to be minimal to negligible, and construction practices would conform to the performance standards outlined in the applicable plans. Additionally, the project is federally exempt from the requirement to determine air quality conformity, in accordance with 40 Code of Federal Regulations (CFR) 93.126 – Exempt Projects: guardrails, median barriers, crash cushions.

b) No Impact

The project is not capacity-increasing, because it does not add a lane to the roadway and would therefore not result in long-term degradation of air quality, due to additional

traffic, that could be cumulatively considerable. During project construction, there would be short-term emissions from the use of diesel- and gasoline-powered construction equipment and vehicles. San Mateo County is in nonattainment zone for 8-Hour ozone (2015) and particulate matter equal to or less than 2.5 microns in diameter ($PM_{2.5}$) (2006), according to federal 2021 standards (EPA 2021). However, project construction would only result in short-term emissions, which would not result in a cumulatively considerable net increase of criteria pollutants. In addition, Project Features AQ-1 and AQ-2 would help ensure that there are no impacts from fugitive dust.

c) No Impact

Sensitive receptors include children, elderly, people with asthma, and other members of the population who are at a heightened risk of negative health outcomes due to exposure to air pollution. Schools, childcare facilities, hospitals, nursing homes, and residential communities are where sensitive receptors typically occur. However, such locations are not present in or near the project area, and the project would not increase emissions of criteria pollutants or mobile source air toxics (MSATs) over existing conditions or exceed BAAQMD's recommended thresholds for construction emissions. Therefore, the project is not anticipated to expose sensitive receptors to substantial pollutant concentrations.

d) No Impact

Typical odors associated with construction equipment may be present temporarily. However, the project would not lead to other emissions, such as odors, that would adversely affect a substantial number of people.

2.6 Biological Resources

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service, or NOAA Fisheries?	No	No	Yes	No
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	No	No	Yes	No
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	No	No	No	Yes
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	No	No	No	Yes
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	No	No	No	Yes
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	No	No	No	Yes

The Office of Biological Sciences and Permits prepared a Natural Environmental Study (NES) (Caltrans 2021b) for the project. The following text summarizes the information included in the NES.

Literature searches for biological resources were conducted in five U.S. Geological Survey (USGS) 7.5-minute quadrangles of the project footprint; however, for the

purposes of this project, the biological study area (BSA) was narrowed down to the extent of the project's starting and ending post miles, plus a rough 400-foot buffer. This buffer was used to account for potential impacts to wildlife that could be caused by earthwork, noise, visual disturbance, and vibration. Potential impacts (or effects) could include direct effects, indirect effects, and interrelated and interdependent activities.

The BSA extends about 400 feet from the center of the project impact area and includes portions of McNee Ranch State Park on the east, Montara State Park on the west, residential and private property south of location 1, and Caltrans property north of location 11. The natural environment in the BSA was evaluated through a combination of field surveys, database searches, and literature reviews.

a) Less than Significant Impact

Special-Status Plant Species

Plants considered to be of special concern are based on (1) federal, state, or local laws regulating their development; (2) limited distributions; and/or (3) the presence of habitat required by the special-status plants occurring on site. Ten plants of special concern were previously documented in the BSA and have potential to be affected by the project. Two additional plants (yellow pansy [*Viola pedunculata*] and pacific stone crop [*Sedum spathulifolium*]) that are host plants for special-status butterflies are also likely to occur in the BSA. Yellow pansy is a host to callippe silverspot butterfly (*Speyeria callippe callippe*). Pacific stone crop is the host plant for the San Bruno elfin butterfly (*Callophrys mossii bayensis*). However, none of these twelve plants were observed during the initial site visit on March 2, 2021, nor were they observed during the early- and mid-season rare plant surveys that were conducted on March 26 and April 30, 2021.

Special-status plant species were not observed during the early- and mid-season 2021 rare plant survey and are not anticipated to occur in the project footprint, and historic occurrence records are vague and/or outside the project footprint. Project Features and AMMs listed in Appendix B will be in place during construction. Compliance with these measures will ensure that effects to sensitive plants will be avoided or minimized, and the impact would be less than significant.

Habitats and Natural Communities of Special Concern

Seaside Daisy Alliance (*Eriophyllum staechadifolium – Erigeron glaucus – Eriogonum latifoli* Alliance) was found in multiple locations throughout the project limits.

Implementation of Build Alternative 1 would result in 0.03 acre of temporary impacts and 0.03 acre of permanent impacts to this sensitive natural community. Implementation of Build Alternative 2 would result in 0.02 acre of temporary impacts and 0.05 acre of permanent impacts. Project Features and AMMs listed in Appendix B will be in place during construction. Compliance with these measures will ensure that effects to Seaside Daisy Alliance are minimized though the loss of habitat cannot be completely avoided. The impact would be less than significant.

Special-Status Wildlife Species

Animals are of special concern based on (1) federal, state, or local laws regulating their development; (2) limited distributions; and/or (3) the habitat requirements of special-status animals occurring on site. The following species were previously documented in the BSA and have a moderate to high likelihood to occur within the project footprint: California red-legged frog and its critical habitat, San Francisco garter snake, and American badger (*Taxidea taxus*). Potential effects to these three species are further described below.

San Francisco garter snake: The San Francisco garter snake is federally and state-listed as endangered. The garter snake is considered a Fully Protected Species under California Fish and Game Code (CFGC) Section 5050. Fully Protected Species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research or if they are a covered species whose conservation and management is provided for in a Natural Community Conservation Plan (NCCP).

The San Francisco garter snake was not observed onsite during reconnaissance site visits. Protocol-level San Francisco garter snake surveys were not conducted as part of the background information collected for the project. A review of the California Natural Diversity Database (CNDDB) revealed 9 occurrences of San Francisco garter snake within 5 miles of the project footprint. The online application iNaturalist was also used to find approximate locations of San Francisco garter snake. There are 4 iNaturalist occurrences within 5 miles of the project footprint.

According to a review of USFWS dispersal data, the San Francisco garter snake has been known to move on average between 328 feet and 656 feet from pond foraging habitat to upland wintering sites, and some individuals have been observed to move over 2,200 feet. Typically, San Francisco garter snakes do not appear to move distances of more than 0.60 mile; although longer San Francisco garter snake

movements may occur in pursuit of prey. San Francisco garter snakes are not known to exhibit the wide-ranging movements associated with California red-legged frog.

The San Francisco garter snake has a moderate likelihood to occur in the BSA. Wetlands and adjacent uplands (both of which are present in BSA) are known to be used by both California red-legged frogs and San Francisco garter snakes for dispersal or migration. This specific habitat is of moderate quality with more preferable grassland dominated areas less than 0.5 mile from SR 1. It is interspersed with shrub-dominated habitat as well as some agricultural lands; this may contribute to smaller home ranges and lower abundances of the garter snake.

A small restoration pond a few hundred feet from SR 1 which California red-legged frog are known to inhabit could increase the likelihood of San Francisco garter snake also occurring in the vicinity. The nearest documented occurrences of the San Francisco garter snake is over 2 miles away from the BSA, and recent studies provide evidence of a growing population that could inevitably lead to formations of metapopulations and increased migratory distances by sexually mature individuals. Further, there are no impassable barriers from the undeveloped foothills east of this pond (where occurrences of San Francisco garter snake are documented) that would invariably negate San Francisco garter snake from accessing this potential foraging habitat. Both San Francisco garter snake and California red-legged frog are known to occur along the San Mateo Coast and federally designated habitat for the California red-legged occurs throughout the BSA.

Despite no recent occurrences within the taxon’s known average dispersal distance, this species could still occur in the project footprint and be affected by project activities. However, due to its more limited distribution than the red-legged frog, Caltrans anticipates a low likelihood of encountering the snake within the project footprint. Additionally, avoidance and minimization measures will be in place to avoid direct impacts consistent with “take” of the species as prohibited by its fully protected status under CFGC.

Table 2-2 and Table 2-3 provide an estimate of impacts to different types of San Francisco garter snake habitat within the project area. Temporary impacts are those that result in habitat disturbances or loss for less than one year. Permanent habitat impacts are any habitat disturbances or loss that exceed one year. As shown, construction of Build Alternative 2 would result in a greater impact to San Francisco garter snake habitat when compared to Build Alternative 1.

Table 2-2 Impacts to San Francisco Garter Snake Habitat Build Alternative 1

Habitat Type	Temporary Impacts (Acres)	Permanent Impacts (Acres)
Aquatic	0	0
Upland/Dispersal	0.15	0.03

Table 2-3 Impacts to San Francisco Garter Snake Habitat Build Alternative 2

Habitat Type	Temporary Impacts (Acres)	Permanent Impacts (Acres)
Aquatic	0	0
Upland/Dispersal	0.26	0.57

California red-legged frog: The California red-legged frog is federally listed as threatened and is a State Species of Special Concern (SSC). Protocol-level surveys for California red-legged frog were not performed. Rather, its presence was inferred based on a literature review, recorded observations, and habitat evaluations during site visits on March 3, March 26, and April 30, 2021. There are no ponds or saturated areas within the project limits and no California red-legged frogs were observed or heard. However, the vegetated parts of the project footprint may provide suitable upland habitat (shelter and dispersal) for the California red-legged frog. Proximity to current recorded California red-legged frog observations and known breeding habitat areas suggest that the California red-legged frog is likely to be present and active within the project limits. However, no project work would occur within the breeding pond. Aquatic non-breeding habitat is present near location 2. Upland habitat is found throughout the BSA on both sides of SR 1.

The project has the potential to adversely affect individual California red-legged frogs that occur in the project footprint during construction, which may result in injury, mortality, or harassment. Indirect effects to California red-legged frog could come from ground disturbance during vegetation removal, equipment and vehicle staging, trampling of vegetation, construction-related dust, increases in noise and light, and impacts to water quality during construction. Direct effects to California red-legged frog could come from trampling of individual California red-legged frogs.

Table 2-4 and Table 2-5 provide an estimate of impacts to different types of California red-legged frog habitat within the project area. Temporary impacts are those that result in habitat disturbances or loss for less than one year. Permanent habitat impacts are

any habitat disturbances or loss that exceed one year. As shown, construction of Build Alternative 2 would result in a greater impact to California red-legged frog habitat when compared to Build Alternative 1.

Table 2-4 Impacts to California Red-legged Frog Habitat Build Alternative 1

Habitat Type	Temporary Impacts (Acres)	Permanent Impacts (Acres)
Aquatic Breeding	0	0
Aquatic Non-Breeding	0	0
Upland/Dispersal	0.02	0.00
Designated Critical Habitat	0.13	0.03

Table 2-5 Impacts to California Red-legged Frog Habitat Build Alternative 2

Habitat Type	Temporary Impacts (Acres)	Permanent Impacts (Acres)
Aquatic Breeding	0	0
Aquatic Non-Breeding	0	0
Upland/Dispersal	0.26	0.57
Designated Critical Habitat	0.22	0.53

Technical assistance with the USFWS Coast-Bay division was requested on May 26, 2021. Designated critical habitat is present in the BSA for California red-legged frog, and the project may adversely affect the California red-legged frog. Caltrans has made the following determinations pursuant to section 7 of the federal Endangered Species Act:

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

A Biological Assessment was prepared pursuant to FESA and was submitted to USFWS on April 15, 2022 to initiate Section 7 consultation. Project Features and AMMs listed in Appendix B will be in place during construction. Section 7 consultation will be completed during the design phase of this project. Compliance with these measures will

ensure that effects to California red-legged frog and San Francisco garter snake will be minimized, and the impact would be less than significant.

American Badger: The American badger is a SSC. The nearest California Natural Diversity Database (CNDDB)-occurrence of the American badger is 1.4 miles from the project area. It was recorded in May 1948 and detailed that one male was "collected" in September and one in October of 1933 as well as one individual in May of 1948 near Peak Mountain. The next nearest CNDDB-documented occurrence is more than 13 miles to the south. The nearest occurrence found on the online nature observation reporting application iNaturalist is within the project footprint. The observation is from June 5, 2020, and recorded as a deceased juvenile male that was hit by a car. Individuals and dens were not observed during any site visit.

Construction activity, including lighting, noise, vibration, human presence, and moving and stationary equipment could directly or indirectly impact the badger, if present. Because badgers are solitary and have a large territory, it is not likely that one will be encountered; however, Project Features and AMMs listed in Appendix B will be in place during construction. Compliance with these measures will ensure that effects to American badger will be avoided or minimized, and the impact would be less than significant.

b) Less than Significant Impact

California Coastal Commission Wetlands: Two wetlands (as defined by the CCC and the SMLCP) were identified in the project footprint; one at location 8 and one at location 11. These wetlands are dominated by arroyo willow (*Salix lasiolepis*) which is a facultative wetland species. The wetland at location 8 is located on a west facing steep slope on the southbound side of SR 1, and the wetland at location 11 on an east facing slope on the northbound side of SR 1. Anticipated impacts to these wetlands that would result from both of the build alternatives are provided in Table 2-6.

Table 2-6: Impacts to Potentially Jurisdictional California Coastal Commission Wetlands

Alternative	Temporary Impacts (Acres)	Permanent Impacts (Acres)	Total Impacts
Build Alternative 1	0.00	0.00	0.00
Build Alternative 2	0.63	0.19	0.82

As shown in Table 2-6, construction of Build Alternative 1 would not impact CCC wetlands. However, construction of Build Alternative 2 would result in 0.82 acre of total impacts to wetlands. Both temporary and permanent impacts would result due to highway shoulder widening and construction of soldier pile retaining walls associated with the construction of either CB Type 85 or ST-75 barriers at location 8.

Environmentally sensitive area fencing, seasonal work restrictions, and best management practices to protect water quality will be implemented to protect wetlands within and adjacent to the project area. Temporarily impacted areas will be revegetated; compensatory mitigation is not currently proposed.

The project would not impact riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations, or by CDFW or USFWS.

c) No Impact

No United States Army Corps of Engineers (USACE) jurisdictional wetlands or other waters were observed within the project footprint. Although several culverts draining potentially jurisdictional intermittent riverine features cross through the project footprint via culverts under SR 1, no open water portions of these features will be impacted, and no drainage work will occur within culverts. Therefore, the project would not impact federally-protected wetlands.

d) No Impact

The coastal bluff west of SR 1 is a narrow strip of land (50 to 150 feet wide) that connects north to the entrance of San Francisco Bay, and south to Moss Beach and El Granada. It is bordered to the west by the Pacific Ocean, and to the east by SR 1. Montara State Beach and Gray Whale Cove State Beach are in the BSA but not part of the project footprint—except at location 7, where a temporary construction easement would be required to install the safety barrier. Due to the steep, sandy, rocky, soils of the western bluff and its proneness to landslides, the ground cover consists of invasive succulents, annual forbs, and short shrubs.

SR 1 currently acts as a potential barrier for wildlife movement along the project corridor. The high daytime traffic volumes of the highway likely deter and prevent the crossing of wildlife throughout the project limits. Lower nighttime traffic volumes may not pose a total barrier to the movement of wildlife across SR 1.

There is an existing fish passage barrier to anadromous salmonids on Martini Creek at locations 1 and 2. The creek flows 10 to 20 feet below SR 1 through a large concrete box with metal culvert inside. The project would not affect fish passage because it does not propose any drainage work. Proposed retaining walls in this area would not affect fish passage because they would not be in the creek.

None of the proposed barriers would affect wildlife crossings or exacerbate existing conditions. The addition of safety barriers and replacement of guardrails would represent some new infrastructure on the landscape. Wildlife species may have trouble negotiating new manmade obstacles. However, the SR 1 corridor would continue to support an abundance of protected lands and habitat on both sides of the highway. Additionally, areas impacted by temporary work will be regraded and reseeded with a local seed mix and will continue to provide habitat for native wildlife species post-project. The project is not anticipated to substantially worsen or degrade the ability of wildlife to move across the landscape. The project would have no impact on the movement of native resident or migratory fish.

e) No Impact

San Mateo County regulates the removal of significant trees and heritage trees. Chapter 2 Section 12,012, Part 3 of Division 8 of the San Mateo County Ordinance Code defines a significant tree as any live woody plant rising above the ground with a single stem or trunk of a circumference of 38 inches or more at 4.5 feet vertically above the ground or immediately below the lowest branch, whichever is lower, and having the inherent capacity of naturally producing one main axis continuing to grow more vigorously than the lateral axes. Chapter 2 Section 11,050 of the San Mateo County Ordinance Code defines a heritage tree as any tree or grove of trees so designated after Board inspection, advertised public hearing and resolution by the Board of Supervisors, or one of 17 trees of varying sizes measured by diameter at breast height in inches.

Although tree removal is not anticipated, any tree removal would necessitate coordination between the County of San Mateo and Caltrans. Permits to remove trees may be subject to the SMCLCP and/or local tree ordinances. Compliance with these permits would ensure that there would be no impact.

f) No Impact

There is no Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan in the project area. Therefore, there would be no impact.

2.7 Cultural Resources

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to in §15064.5?	No	No	No	Yes
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	No	No	No	Yes
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	No	No	No	Yes

a), b), and c) No Impact

Caltrans' Office of Cultural Resource Studies completed a Section 106 review of the project consistent with Caltrans' regulatory responsibilities under the January 2014 First Amended Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it pertains to the Administration of the Federal-Aid Highway Program in California (Programmatic Agreement).

The review consisted of a detailed search of records, maps, plans, and digital files found in Caltrans' Cultural Resources Database and a pedestrian survey of the project area. Additionally, Caltrans consulted with local Native American tribes and individuals about the project. Consultation under Section 106 and Assembly Bill (AB) 52 was initiated on May 11, 2020, with the following tribes and individuals: Ms. Irene Zwierlein of the Amah Mutsun Tribal Band of Mission San Juan Bautista, Mr. Tony Cerda of the Costanoan Rumsen Carmel Tribe, Ms. Ann-Marie Sayers of the Indian Canyon Mutsun Band of Costanoan, Ms. Monica Arellano of the Muwekma Ohlone Tribe of the SF Bay Area, Mr. Andrew Galvan of The Ohlone Indian Tribe, and Ms. Ann Marie Sayers of Indian Canyon Mutsun Band of Costanoan.

In accordance with stipulation VIII.A and Attachment 3 of the PA, under the delegated authority of Federal Highway Administration (FHWA), the Area of Potential Effects (APE) was developed in consultation with Caltrans PQS Kristina Montgomery (PQS Co-Principal Investigator, Historic Archaeology), Charles Palmer (PQS Principal

Architectural Historian), and Kerry Morgan, Caltrans Project Manager, and was signed on February 16, 2021. The APE is limited to the entirety of Caltrans' right-of-way within the project limits and a temporary construction easement at one location. The architectural and archaeological APE are the same.

Based on the results of the review, Caltrans has determined that there are no historic properties within the project APE and the project's finding is No Historic Properties Affected (Caltrans 2021c). The review also determined that there are no historical resources present for the purposes of CEQA. Project Features CULT-1 and CULT-2 would help ensure that there would be no impact to previously unknown cultural resources found during construction.

2.8 Energy

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

a) Less than Significant Impact

The project would not result in significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy. Project construction would be a temporary, one-time commitment of energy, necessary for any infrastructure improvement project. Energy consumption during construction would be conserved and minimized to the extent feasible through the implementation of BMPs. Additionally, the project does not add roadway capacity and would therefore not increase energy usage during operation. Energy usage during operation is typically 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 (BTU). Because the project would not influence traffic volumes or otherwise affect VMT, there would be no quantifiable increase in energy usage during operations other than routine maintenance. The impact would be less than significant.

b) No Impact

The project does not include changes in the current capacity or use of the roadway within the project limits. Therefore, the project would not result in long-term changes to energy consumption. Neither construction nor operation of the project would conflict with the implementation of local and state plans related to energy and energy efficiency.

2.9 Geology and Soils

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

a(i) No Impact

The project is intended to enhance vehicle traffic safety by replacing and adding guardrails within the project limits. The project area is approximately 2 miles away from the San Gregorio Fault, and according to the California Department of Conservation the project area is not in an Earthquake Fault Zone. The project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death due to rupture of a known fault. There would be no impact.

a(ii) No Impact

Due to the historical seismic activity in the Bay Area and numerous major fault lines including the San Gregorio fault, which is closest to the project area, the project area has the potential to experience moderate to strong ground shaking during a seismic event. The project includes the replacement and installation of guardrails and safety barriers at 11 locations along SR 1 to improve vehicle safety within the project limits. The project would be designed to resist ground-shaking associated with the nearby fault 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. There would be no impact.

a(iii) No Impact

The project does not overlap with areas that are susceptible to liquefaction, according to California Department of Conservation's California Earthquake Hazards Zone Application (California Department of Conservation 2019). Although there are liquefaction zones relatively close to the project area, the project would not install, replace, or construct any element of the project in a liquefaction area (San Mateo County 2005). The project would not increase the risk of loss, injury, or death due to liquefaction; there would be no impact.

a(iv) No Impact

The project is in an area that is susceptible to landslides. According to the Department of Conservation, the project area is a landslide prone area. According to the County of San Mateo Hazards map, the project area is an area mapped as "few existing" landslides. Design and construction guidelines would incorporate engineering standards that address seismic risks, including ground failure related to liquefaction, landslides, and lateral spreading. Therefore, although the project would be in a landslide-prone

area, the project would not increase the risk of loss, injury, or death due to landslides; impacts would be less than significant.

b) Less than Significant Impact

Caltrans would design the project so that erosion or loss of topsoil would be minimized as much as possible. Construction of the project would occur within the Caltrans' right-of-way on previously disturbed ground and would include excavation, vegetation clearing, and grubbing. These earth-disturbing activities could cause some minor erosion of the topsoil; however, implementation of standard Caltrans practices and BMPs for erosion control would be incorporated. Project Feature WQ-1 would be implemented to reduce any erosion or loss of topsoil that may occur. Native topsoil removed for the project would be stockpiled for reuse. Following construction and earth-disturbing activities, all areas of disturbed soil would be revegetated to stabilize the topsoil to prevent any erosion post construction. It should be noted that the project area may be subject to the effects of cliff retreat; this topic is discussed further in Section 2.24.7 below. Based on the project's design and included features, there would be a less than significant impact.

c) No Impact

Discussion of earthquake-induced landslides and other seismic-related ground failures is discussed previously under Impact (a). Caltrans will conduct geotechnical subsurface and design investigations required during the design phase to ensure that the project addresses geologic concerns. The project would not increase the risk of on- or offsite landslides, lateral spreading, subsidence, liquification, or collapse. There would be no impact.

d) No Impact

The project would be constructed within Caltrans' right-of-way on nonnative soils, which are not expansive. Expansive soils are soils that expand when wet and shrink when dry due to mineralogical composition. The project is not on expansive soil (as defined in Table 18-1-B of the Uniform Building Code [1994]) and would not include construction of habitable structures; therefore, it would not create substantial risk to life or property. Additionally, Caltrans design and construction guidelines incorporate engineering standards that address expansive soils. There would be no impact.

e) No Impact

The project includes the replacement and installation of safety barriers along SR 1 for increased vehicle safety and would not include the use of septic tanks or alternative wastewater disposal systems. There would be no impact.

f) No Impact

Although the project would include ground-disturbing activities, it is not expected to result in the disturbance of or overlap with paleontological resources because it would not impact native soil or rock. Caltrans does not anticipate the discovery or destruction of any unique paleontological resources during construction. There would be no impact.

2.10 Greenhouse Gas Emissions

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	No	No	Yes	No
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	No	No	Yes	No

a) and b) Less than Significant Impact

The project would not increase the capacity of the existing roadway and would therefore 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 stems from materials processing by onsite construction equipment, workers commuting to and from the project site, and potential traffic delays due to construction. These emissions would be produced at different rates throughout the construction phase, depending on the activities involved at various phases of project construction.

A construction-related GHG emission analysis was conducted for the project, focusing on vehicle-emitted GHG (Caltrans 2021d). Carbon dioxide (CO_2) is the single most important GHG pollutant due to its abundance when compared with other vehicle-emitted GHGs, including methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbon (HFCs), and black carbon (BC).

Construction-related GHG emissions were calculated using the Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model (RCEM), version 9.0.0. The analysis estimated that, for a construction period of 12 months, construction would produce a total of 395 tons of CO_2. Additionally, the analysis quantified total GHG emissions—including CO_2, CH_4, and 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 will 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. The total GHG emissions for construction would be 362.73 metric tons of CO_2e.

Because construction activities are short-term, the GHG emissions resulting from construction activities would not result in long-term adverse effects. Implementation of Caltrans Standard Specifications—such as complying with air-pollution-control rules, regulations, ordinances, and statutes that apply to work performed under the contract and the use of construction best management practices—would result in reducing GHG emissions from construction activities.

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, the ARB implements measures to achieve emission reductions of GHG in response to AB 32 and Senate Bill (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.

All construction contracts include Caltrans Standard Specifications Section 7-1.02A and 7-1.02C, Emissions Reduction, which require contractors to comply with all laws applicable to the project and to certify that they are aware of and would comply with all ARB emission reduction regulations; and Section 14-9.02, Air Pollution Control, which requires contractors to comply with all air pollution control rules, regulations, ordinances, and statutes. Certain common regulations, such as equipment idling restrictions, that reduce construction vehicle emissions also help reduce GHG emissions. Additionally, implementation of Project Features and TRANS-1: Develop and Implement a Traffic Management Plan (TMP) would reduce the potential for GHG emissions due to construction-induced traffic. Therefore, the impact would be less than significant.

2.11 Hazards and Hazardous Materials

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	No	No	No	Yes
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	No	No	No	Yes
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	No	No	No	Yes
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	No	No	Yes	No
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	No	No	Yes
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	No	No	Yes	No
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	No	No	Yes	No

a) and b) No Impact

During construction, the project would use vehicles and equipment that would be powered with fuels such as gasoline and diesel, which are hazardous. Caltrans Standard Specifications 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. If hazardous materials are found during construction, the appropriate measures would be taken, and the project would comply with Caltrans Standard Specification 14-11, Hazardous Waste and Contamination, which outlines handling, storing, and disposing of hazardous waste. Construction of the project is not expected to create a hazard to construction workers, the public, or the environment. Operation of the project would not involve the use of hazardous materials. The project would have no impact.

c) No Impact

There are no schools within 0.25 mile of the project area. The closest school, Farallone View Elementary, is approximately 0.85 mile from location 1. Project construction would be limited to the 11 locations areas along SR 1 within the project limits, and a relatively small amount of emissions from vehicles and equipment would occur during project construction. Adherence to local, federal, and state regulations during project construction would reduce the risk of exposure to hazardous materials and accidental hazardous materials released, such as fuel. Therefore, the project would not result in the spread of hazardous materials or expose sensitive receptors, such as schools. There would be no impact.

d) Less than Significant Impact

Screening of environmental regulatory databases (the State Water Resources Control Board's Geotracker and the California Department of Toxic Substances Control's [DTSC's] EnviroStor) revealed no known hazardous waste sites within the project footprint; however, there are several sites within 0.25 mile of the project area (California Department of Toxic Substances Control 2021).

The EnviroStor database indicated two military evaluation cleanup sites within 0.25 mile of the Gray Whale Cove State Beach parking lot, which is near locations 9, 10, and 11 of the project. The military evaluation cleanup site approximately 2,000 feet north of the

Gray Whale Cove State Beach parking lot, Little Devil's Slide Military Reservation (J09CA0855), was used for harbor defense of San Francisco and was deactivated in 1958. A team of researchers with the Coast Defense Study Group visited the site in 2005 to assess the condition of existing facilities and found no evidence of the powerhouse, underground electrical wiring, or barbed wire fences. In 2018, an Earth Day Cleanup crew at the beaches around Gray Whale Cove found a rusted abandoned steel tank on the hillside above this beach, and the United States Army Corps of Engineers (USACE) was notified.

The other Military Evaluation cleanup site, Camp Montara, is approximately 2,000 feet east of the Gray Whale Cove State Beach parking lot. Currently, the State of California Department of Parks and Recreation operates and maintains the site as part of McNee Ranch State Park. No evidence of hazards was found during a site visit in 2007.

If site investigations conducted during the design phase of the project show evidence of hazardous materials, Caltrans would require the contractor to follow the appropriate standard specifications for any contaminants. There would be a less than significant impact.

e) No Impact

Project locations 1, 2, and 3 are within 2.5 miles of Half Moon Bay Airport. However, due to 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. There would be no impact.

f) Less than Significant Impact

SR 1 is a major north-south highway for the communities near the project area, and it is assumed that SR 1 would be used as an evacuation route in the event of an emergency. The project would be subject to the San Mateo County's Emergency Operations Plan (EOP). The EOP provides guidelines for emergency response planning, preparation, training, and execution throughout the county. Project construction would result in minor increases in short-term construction-related traffic on SR 1; however, Caltrans would prepare a 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. There would be a less than significant impact.

g) Less than Significant Impact

The project is within zones 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 therefore have a limited susceptibility to fires. The project includes the installation of soldier pile retaining walls on the downslope side of SR 1. This installation would not affect occupants nor would it require the installation of associated infrastructure that would exacerbate fire risk. The project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. The impact would be less than significant.

Please refer to the Wildfire section for more details and discussion regarding wildfire hazards.

2.12 Hydrology and Water Quality

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	No	No	Yes	No
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such the project may impede sustainable groundwater management of the basin?	No	No	No	Yes
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: (i) result in substantial erosion or siltation on- or off-site;	No	No	No	Yes
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	No	No	No	Yes
(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	No	No	Yes
(iv) impede or redirect flood flows?	No	No	No	Yes
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	No	No	No	Yes
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	No	No	No	Yes

Caltrans investigated impacts to hydrology and water quality from the project and prepared a *Water Qualify Study* (Caltrans 2021e). This section summarizes the findings of that review.

The project is within the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (Region 2), which is responsible for implementation and enforcement of state and federal laws and regulations concerning water quality.

This project is in the Hydrologic Sub-Area 204.20. There are no base flood plains present in the project area. The receiving waterbodies of the project would be the Ward Creek-Frontal San Francisco Bay Estuaries, Sausal Creek-Frontal San Francisco Bay Estuaries, and San Francisco Bay Estuaries.

a) Less than Significant Impact

Temporary impacts to water quality may result from soil disturbance during construction, including potential changes to localized pH and turbidity of receiving water bodies. The project would include vegetation clearing and grubbing, as well as some minor excavation and trenching. Although temporary impacts from soil disturbance have the potential to impact water quality, with implementation of Project Feature WQ-1, project activities would not substantially degrade surface or groundwater quality or result in violations of water quality standards or waste discharge requirements. Impacts would be less than significant.

b) No Impact

The project would not involve the use of groundwater or interference with groundwater supplies. The project includes the installation of new guardrails, safety barriers, and retaining walls for vehicle safety at 11 locations along SR 1 within the project limits. The amount of added impervious surface in the project area would be relatively negligible and would not impede the infiltration of groundwater. The project would not substantially decrease groundwater supplies or interfere with groundwater recharge so substantially that the project would impede sustainable groundwater management of the basin. There would be no impact.

c) (i), (ii), (iii), and (iv) No Impact

The construction and operation of the project would not alter the drainage patterns or interfere with the course of a stream or river in the project area. The project would replace existing and install new guardrails and safety barriers along SR 1 for increased vehicle protection. The impervious surface that would be added by the project is relatively small when compared to the amount of underdeveloped areas surrounding the project area and would not substantially increase runoff from the project area.

Construction actives are not expected to alter the drainage pattern of the project area. There would be no impact.

d) No Impact

The project is not in a flood hazard, seiche, or tsunami zone. There would be no impact.

e) No Impact

The project would not conflict with or obstruct the implementation of a water quality control plan or sustainable groundwater management plan. The project includes the installation of guardrails and safety barriers for vehicle safety at 11 locations along SR 1 within the project limits. There would be no impact.

2.13 Land Use and Planning

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Physically divide an established community?	No	No	No	Yes
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	No	No	Yes	No

a) No Impact

The project would be constructed within existing state right-of-way in a rural area of San Mateo County. The highway would remain open throughout construction, with either two-way traffic or one-way reversing traffic control during specific periods. The project does not include physical features that would change the configuration of the existing roadway in such a way that new barriers would be created, limiting access to adjacent areas. Therefore, the project would not physically divide an established community. There would be no impact.

b) Less than Significant Impact

SR 1 within the project limits is used as a primary access road to San Mateo County coastal areas, providing access to public parks, beaches, visitor-serving facilities, and coastal residential developments. Land uses along the 2-mile stretch of SR 1 within the project limits include single-family residential development, equestrian areas, and state beaches such as Montara State Beach and Gray Whale Cove State Beach. As discussed above, all project features would be constructed within the existing Caltrans' right-of-way. Therefore, project features would not change existing land uses in the project area and would not conflict with existing or future land use designations.

This section of SR 1 is part of the Pacific Coast Bicycle Route, and sections of the California Coastal Trail (CCT) run adjacent to SR 1 within the project limits. Impacts to segments of the CCT are further discussed under the "Coastal Zone Management Act."

During construction, the highway would remain open; however, one lane would need to be temporarily closed and one-way reversing traffic control would be required in select

areas. Existing pull-out areas may need to be used to stockpile material and for construction staging. However, there would be no effect on public access or tourism and visitor-serving facilities.

Consistency with State, Regional, and Local Plans and Programs

State Scenic Highway Program

SR 1 from the southern limits of the City of Half Moon Bay to Daly City is eligible for state scenic highway designation. This means that the California State Legislature marked the state route as eligible due to its outstanding scenic qualities, and local governments with land use authority have adopted a “scenic corridor protection program” that has been approved by Caltrans. The scenic corridor protection program limits adjacent development and other land uses.

Open, see-through type barriers would be constructed to maintain scenic views to the ocean beyond. Due to their limited quantity and scale, along with their “see-through” design that maintains views of the ocean and the surrounding landscape, the barriers would not fundamentally alter the scenic character or quality of the project area. In addition, the implementation of Project Features and AMMs listed in Appendix B would minimize temporary construction impacts. Therefore, it is not anticipated that the project’s temporary and permanent visual resource impacts would affect the eligibility of the highway for the State Scenic Highway Program, and the impact to this program would be less than significant.

Coastal Zone Management Act

The project is in the California Coastal Zone; resources in this zone are protected by the federal Coastal Zone Management Act of 1972 (16 United States Code [USC] 1451-1464, as amended). States with an approved coastal management plan are able to review federal permits and activities to determine whether they are consistent with the state’s management plan.

California has developed a coastal zone management plan and has enacted its own law, with the passing of the California Coastal Act of 1976 (CCA), to protect the coastal zone. The policies established by the CCA include the protection and expansion of public access and recreation; the protection of agricultural lands; the protection of scenic beauty; and the protection of property and life from coastal hazards. The CCC is responsible for implementation and oversight under the CCA.

The CCA delegates power to local governments to enact their LCPs; in this case, the SMLCP (San Mateo County 2013a). The state-certified LCP includes all LCP policies, with amendments approved through August 8, 2012. The SMLCP requires that planning projects in the Coastal Zone be designed to comply with these requirements. The SMLCP covers the unincorporated areas of San Mateo County that fall within the coastal zone.

The project is within the permitting jurisdiction of the SMLCP and would require a CDP or an exemption from CDP requirements. For a permit to be issued, the project must comply with the policies of the SMLCP and the CCC. The CDP to be issued by San Mateo County will be appealable to the CCC because the project is located between the sea and the first through public road paralleling the sea. Accordingly, the SMLCP and the public access/recreation policies of the Coastal Act will be the standard of review for the proposed project.

The policies of the CCA give the highest priority to the 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. The project feature locations do not overlap with land zoned for either use and there are no agricultural lands or timber lands in the project area. Additionally, the project features would not conflict and do not overlap with land designated as open space. This project would not adversely impact the CCT or its use in the long term. The project features would not conflict with the uses of the trail.

Key provisions of the CCA and San Mateo LCP are provided below, along with an evaluation of permitting activities of the project (see Table 2-77 and Table 2-8).

San Mateo County General Plan 2013

The project would be consistent with the San Mateo County General Plan (San Mateo County 2013b). This project aligns with the following policies, goals, and objectives by providing a safe, reliable highway for motorized vehicles and multi-modal users, while maintaining or enhancing the visual quality of the highway:

- 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 12.11: Balance and attempt to minimize adverse environmental impacts resulting from transportation system improvements in the County.
- GO 4.2 Protection of Shorelines:
    - Protect and enhance the visual quality of and from shorelines of bodies of water, including lakes, reservoirs, streams, bays, ocean, and sloughs.
    - Maximize the preservation of significant public ocean views.
- GO 4.40 – 4.69: Scenic Roads and Corridors. The project area is within a designated scenic corridor, and is therefore subject to the policies of the San Mateo County General Plan Scenic Road Element. These policies regulate development within designated scenic corridors, including architectural design standards and site planning. Caltrans will coordinate with the County of San Mateo during the detailed design phase to ensure that the proposed safety features are context sensitive and comply with the aforementioned policies.

There would be no impact from the project due to inconsistencies with the San Mateo County General Plan. The project would contribute to enhancing the safe movement of people throughout the project corridor.

Table 2-7 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.	This project would not affect access to or recreational opportunities involving the coast. The proposed safety features would not interfere with the public's access to the beach.
Section 30211	Development shall not interfere with public access to the sea.	The project would not interfere with the public's access to the coast.
Section 30212	New development Projects shall provide for public access to the shoreline and along the coast.	Access to the coast already exists near the project location, and this project would not affect this access.
Section 30252	Public Access	The public's access to coastal resources would be preserved as described above. Public access and use of the CCT and recreational areas would not be adversely affected by the project.
Section 30231	Biological activity; water quality	With the proposed Project Features and AMMS, this project would not have any impact on biological activity. The project would not affect water quality either directly or indirectly. Caltrans would implement Project Feature WQ-1 to reduce any potential impact to water quality from the project.

Policy Number	Subject of Policy	Coastal Zone Assessment
Section 30233	Diking, filing, and dredging of wetlands	Caltrans would conduct the project entirely from the highway shoulders and adjacent disturbed areas. Build Alternative 1 would potentially result in temporary impacts to 0.02 acre of coastal wetlands and Build Alternative 2 would potentially result in permanent impacts to 0.03 acre and temporary impacts to 0.03 acre of coastal wetlands.
Section 30235	Construction altering natural shoreline	There would be no alterations to the natural shoreline as part of this project; the work would be confined to the highway lanes and adjacent shoulder areas.
Section 30240	Environmentally Sensitive Habitat Areas	There would be no impact to environmentally sensitive habitat areas because the project would be confined to paved and highly compacted surfaces.
Section 30241-30242	Agricultural land	No Prime Farmland or lands under a Williamson Act contract are present within the project footprint.
Section 30244	Archaeological/Paleontological resources	There would be no impact to any archaeological or paleontological resources as part of the project.
Section 30251	Scenic and visual qualities	There would be no impact to scenic or visual resources as part of the project
Section 30254	Public works facilities	This project would not change the character of SR 1, which would remain a scenic two-lane highway.
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. Creating housing opportunities for low and moderate income persons is outside of the scope of this project.
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.

Notes:

AMMS = Avoidance and Minimization Measure

Caltrans = California Department of Transportation

CCT = California Coastal Trail

SR = State Route

Table 2-8 Key Components of the San Mateo County Local Coastal Program

Component Subject	San Mateo County Local Coastal Program Assessment
Locating and Planning New Development	The project would be considered new development under the definition within the SMLCP. The project would not have any effect on growth, sensitive archaeological or paleontological resources, or require the development of public services and infrastructure as a result of the project. Caltrans would implement BMPs to minimize the project's effect on water quality in the project area.
Public Works	The project involves replacing and installing new safety improvements on SR 1, which is an existing public transportation facility. Highway capacity would not be increased as specified in Section 2.44b in the SMLCP. SR 1 would remain a scenic two-lane road after construction.
Housing	The project is in a rural area of the SR 1 corridor and would have no impacts to housing.
Energy	The project does not include the 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 the existing Caltrans' right-of-way and would not impact agricultural land or land zoned for timber harvest. The project would not conflict with the Agriculture Component in the SMLCP.
Aquaculture	The project would not affect aquaculture facilities or construct any new aquaculture facilities.
Sensitive Habitats	Polices 7.3 – 7.13 of the SMLCP provide general and riparian corridor-specific guidance for the protection of sensitive habitats. As described in Section 2.6, the project is anticipated to have temporary and permanent impacts to sensitive habitat – the specific impacts are shown in Tables 2-2 – 2-5. There are sensitive habitats in the BSA, which may support special-status species such as the San Francisco garter snake and California red-legged frog. It should be noted that upland/dispersal habitat was assumed to overlap for the aforementioned species. However, project activities would be confined to paved or highly compacted surfaces and would not result in impacts to these habitats. SMLCP policies 7.36 and 7.42 provide specific protections for the San Francisco garter snake and rare plant populations, respectively. As described in Section 2.6, Build Alternative 1 (the Preferred Alternative) would have a less then significant impact to San Francisco garter snake and California red-legged frog.
Visual Resources	The project would result in temporary impacts to visual resources during construction. The project is likely to enhance the view from the highway after the project is complete, because the new safety barrier will be an aesthetic improvement over the existing guardrail or K-rail as well as provide a more scenic roadway. SMLCP Policy 8.15, "Coastal Views," is intended to prevent "development (including buildings, structures, fences, unnatural obstructions, signs, and landscaping) from substantially blocking views to or along the shoreline from coastal roads, roadside rests and vista points, recreation areas, trails, coastal accessways, and beaches." As stated in response a) under Section 2.3 above, the project would not have substantial adverse effects on scenic vistas, due to the limited quantity and scale of the proposed safety barriers, along with their "see-through" design. Additionally, SMLCP Policy 9.12 a) and b) limits protective shoreline structures, including retaining walls, that may be constructed within the SMLCP's jurisdiction. Policy 8.4 a) similarly prohibits development on bluff faces "except

Component Subject	San Mateo County Local Coastal Program Assessment
	public access stairways where deemed necessary and erosion control structures which are in conformity with coastal policies on access and erosion." The proposed retaining walls included in Build Alternative 2 may not be a permitted use under these policies. SMLCP Policy 8.30(b) designates County Scenic Roads and Corridors, including SR 1 north of the Half Moon Bay city limits. The project is within this designated scenic corridor, meaning that it is further subject to SMLCP Policy 8.31, which regulates scenic corridors in rural areas. Therefore, the project should comply with the policies of the Scenic Road Element of the San Mateo County General Plan. Caltrans will continue to coordinate with San Mateo County on safety feature design throughout the detailed design phase.
Hazards	The project is not in a high-risk fire area or in an area that is at risk for liquefaction and severe seismic impacts. The project is in an area that could experience tsunamis or flooding. This project would not create features that would worsen impacts on the surrounding areas from such hazards. This project would be consistent with this component of the San Mateo LCP.
Shoreline Access	The project would not construct improvements in or adjacent to existing trails or shoreline access areas. There, the project is not anticipated to impact shoreline access.
Recreation/Visitor Serving Facilities	The project would be constructed within the existing Caltrans' right-of-way and would not impact adjacent recreation/visitor serving facilities.
Commercial Fishing/ Recreational Boating	The project would have no impact on commercial fishing or recreational boating.

BMP = Best Management Practice
BSA = Biological Study Area
Caltrans = California Department of Transportation
K Rails = temporary safety barrier
LCP = Local Coastal Program
SMLCP = San Mateo County Local Coastal Program
SR = State Route

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 any land use plan, policy, or regulation adopted to avoid or mitigate an environmental effect. The impact would be less than significant.

2.14 Mineral Resources

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

a) and b) No Impact

The project would not be constructed in a known mineral resource zone. Construction of the project would take place in previously disturbed soil within existing the Caltrans' right-of-way. According to the United States Geological Survey Mineral Resources On-line Spatial Data, the project is not close to or on a known mineral resource (USGS 2021). There would be no impact.

2.15 Noise

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

a), b), and c) No Impact

The project would be constructed within existing state right-of-way in a rural area of San Mateo County. The closest sensitive noise receptors are residences in Montara, 0.5 mile south of locations 1 and 2. The project is not 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 the roadway, or increase the number of through-traffic lanes on the roadway. It is not a Type II project because it is not a project for noise abatement on an existing highway. Therefore, the project is a Type III project; no significant operational noise impacts are anticipated, and a noise study is not required.

The project could result in increases in noise during construction. However, 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, construction activities are not to exceed 86 A-weighted decibel (dBA) Maximum Noise Level (L_{max}) at a distance of 50 feet from 9 p.m. to 6 a.m.

Groundborne vibration and groundborne noise levels could slightly increase during construction of the project. Vibration would be intermittent, depending on what

construction activities are occurring. This vibration would be minimal, temporary, and short in duration. Therefore, there would be no impact related to vibration.

The nearest airport is Half Moon Bay Airport, which is 1.6 miles south of the project limits. The project is not in an identified noise level contour for the airport (City/County Association of Governments of San Mateo County [C/CAG] 2014). Therefore, the project would not expose construction workers to excessive noise from airports.

2.16 Population and Housing

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	No	No	No	Yes
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	No	No	No	Yes

a) No Impact

The project would not involve the construction of new residential buildings, businesses, or expand transportation services and facilities that could induce population growth. No impact would result from the project.

b) No Impact

The project would not remove or displace existing people or housing and would not necessitate construction of replacement housing elsewhere. No impact would result from the project.

2.17 Public Services

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

a) No Impact

The project would have no effect on the provision or need for public services. Project construction has the potential to increase traffic delays on SR 1 that could affect response times of emergency response vehicles. However, Caltrans would prepare a TMP to ensure that traffic flows are maintained during construction and to ensure accessibility throughout the corridor for emergency service providers. The project does not include construction of new housing or other land uses that could directly or indirectly increase the local population and demand for governmental facilities and services, such as fire protection, police protection, schools, or parks. Because the project would not be growth-inducing, the project would have no effect on existing demands for fire protection, police protection, schools, parks, or other public facilities in the surrounding area. Therefore, the project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or result in the need for new or physically altered governmental facilities.

2.18 Recreation

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	No	No	No	Yes
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	No	No	Yes

a) No Impact

Gray Whale Cove State Beach, Montara State Beach, and McNee Ranch State Park (part of Montara State Beach) are all adjacent to the project limits, with access provided by SR 1. All three parks are owned and managed by the California Department of Parks and Recreation. In general, the parks are open from 8:00 a.m. until sunset and allow hiking, biking, horseback riding, and walking dogs on leash.

The project would involve several safety improvements along SR 1. It does not include features that would directly or indirectly result in an increase in the use of nearby recreational facilities that would result in such an increase in use of these neighborhood and regional parks or other recreational facilities that deterioration would occur or be accelerated. There would be no impact.

b) No Impact

The project does not include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. There would be no impact.

2.19 Transportation

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

SR 1 within the project limits is an undivided two-lane conventional highway with two 12-foot lanes and 1- to 4-foot typical outside shoulders. It is the primary route connecting coastal communities and cities—including Half Moon Bay, Montara, and Pacifica—to one another.

One-way traffic control would be necessary during construction and could cause short-term localized traffic congestion and delays. One-way traffic control would consist of flaggers to regulate traffic. However, the project would not permanently alter the circulation system, nor would it have any effect on vehicle miles traveled (VMT). The project is not capacity-increasing and is therefore VMT-neutral.

a) Less than Significant Impact

The project would not conflict with policies, goals, or objectives regarding the circulation system, public transit, bicycle, or pedestrian facilities in the San Mateo County General Plan or General Plan Policies (San Mateo County 1986, General Plan) (San Mateo County 2013b), nor would it affect access to recreational trails in or near the project area, such as the California Coastal Trail.

SamTrans operates a bus service, Route 17, through the project limits along SR 1. In addition, the project corridor is part of the Pacific Coast Bicycle Route. A TMP would be developed with input from the local community during the design phase. The TMP

would detail how access would be maintained during construction. As part of the TMP, SamTrans would be notified prior to construction to minimize service disruption. Therefore, although delays are anticipated, impacts would be less than significant.

b) Less than Significant Impact

This project is consistent with CEQA Guidelines section 15064.3, subdivision (b), which relates to induced demand and vehicle miles traveled. The project would have no impact on VMT because it is not a capacity-increasing project. Under section 15064.3, subdivision (b), transportation projects that have no impact on VMT should be presumed to cause less than significant transportation impacts.

c) No Impact

This project would not increase hazards, because the existing geometric design of the roadway would not be altered. The project is intended to enhance traffic safety by reducing run-off-the-road accidents from errant vehicles within the project limits and would introduce new safety features to the shoulder without altering the existing design of the roadway.

d) Less than Significant Impact

Under the TMP (TRANS-1), medical and emergency vehicles would be able to continue to use routes in the local area to serve fire, medical, and law enforcement purposes. During one-way reversing traffic control, flaggers would give priority to emergency vehicles. The impact would be less than significant.

Avoidance and Minimization Measure

TRANS-1: Develop a Traffic Management Plan: To offset temporary disruption during construction, a TMP will be developed by Caltrans with input from the local community during the design phase. The TMP would include one-way traffic controls, flaggers, and construction phasing to reduce impacts to local residents and maintain access for emergency services. The TMP would also include coordination with San Mateo County, and public notification in the event of an emergency. The TMP would also ensure access to residential driveways that are near construction activities. The TMP would have the added benefit of reducing construction GHG emissions by limiting traffic delays.

2.20 Tribal Cultural Resources

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

a) and b) No Impact

No tribal cultural resources were reported in record searches or in attempts to consult with Native groups and individuals. There would be no impact to tribal cultural resources.

2.21 Utilities and Service Systems

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

a), b), c), d), and e) No Impact

The project would involve replacing and installing new safety guardrails along SR 1 within the Caltrans' right-of-way for vehicle protection. The project would not require installation of new utilities. There are existing utilities within the project limits that could potentially require relocation. However, any interruption of service associated with these relocations would be temporary and short-term. If necessary, underground utility verification (known as potholing) would be completed during the design phase.

The project does 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 (and its contractor) would comply with all federal, state, and local management and reduction statutes and regulations related to solid waste disposal. No impact would result.

2.22 Wildfire

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project: a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	No	No	Yes	No
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	No	No	Yes
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	No	No	Yes
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	No	No	Yes

a) Less than Significant Impact

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

b) and c) No Impact

The project includes the installation of new guardrails and safety barriers for vehicle safety at 11 locations along SR 1 within the project limits. The project does not include effects to occupied structures, because none exist within the project limits. 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. There would be no impact.

d) No Impact

Frequent landslides and erosion are known to occur along SR 1. The project would replace and install new guardrails and safety barriers at 11 locations along SR 1 within the project area, as well as several retaining walls (depending on the alternative selected). Implementation of erosion control measures, incorporated into the design of the project as part of Caltrans standards and specifications and in compliance with all applicable regulations, would avoid or minimize the project's potential to result in downslope or downstream flooding or landslides as a result of runoff, post-fire slope stability, or drainage changes. Additionally, construction and operation of the project would not alter the existing topography or create slopes that would increase susceptibility to wildfire hazards, including downslope or downstream flooding, or landslides. There would be no impact.

2.23 Mandatory Findings of Significance

	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	No	No	No	Yes
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)?	No	No	No	Yes
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	No	No	No	Yes

a) No Impact

No impact to biological or cultural resources are anticipated as a result of the project with the implementation of Project Features and AMMs. 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.

b) No Impact

The project would be constructed in the vicinity of other past and planned Caltrans projects, as documented in Table 2-9. There are no capacity increasing projects in the vicinity of the project. Additionally, the San Mateo County Transportation Authority (SMCTA) 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 (SMCTA 2015). The potential improvements of this endeavor include designated pedestrian crossings, left-turn lanes, acceleration lanes, and raised medians.

Table 2-9 Past and Planned Projects

Project Number and Title	Project Location	Project Type	Construction Year
EA 04-2K880 – State Route 1 Traffic Operational Systems Improvement Project	SR1 PMs 26.43-47.20	Provide emergency and incident-management related information to the traveling public and Caltrans.	2022
EA 04-0Q130	SR1 PMs 27.5-34.8	Rehabilitate roadway, upgrade guardrail and Transportation Management System (TMS) elements, rehabilitate drainage systems, upgrade facilities to Americans with Disabilities Act (ADA) standards, and make bicycle improvements.	N/A
EA 04-2J790 – State Route 1 and State Route 84 Structures and Scour Mitigation Project	SR1 PM 28.9	Retrofit scour critical bridges at the Pilarcitos Creek Bridge No. 35-0139L/R and on Route 84 at San Gregorio Creek Bridge No. 35-0166.	2022
EA 04-0Q670	SR1 PM 36.2	Repair damaged storm drain and restore eroded embankment near Montara, south of 9th Street.	N/A
EA 04-0Q440	SR1 PMs 44.0-48.0	Construct permanent Best Management Practices (BMPs) to achieve statewide National Pollutant Discharge Elimination system permit compliance units for trash capture and Total Maximum Daily Load.	N/A
EA 1Q130 - Gray Whale Cove Pedestrian Crossing	SR1 PM 37.8-38.0	Modifications to the Gray Whale Cove State Beach parking lot off of SR 1 and the pedestrian crossing from the parking lot across the roadway to the beach, in order to improve pedestrian safety for beach users.	N/A

ADA = Americans with Disabilities Act
BMPs = Best Management Practices
PM = post mile
SR = state route
TMS = Transportation Management System

The project is anticipated to have less than significant or no impacts in all resource areas identified in the checklist above. Construction-related impacts, such as traffic disruptions due to lane closures, would be temporary and minor in nature, and the long-term effects of the project on the environment are negligible. Therefore, the projects listed in Table 2-9, and the potential congestion and safety improvements proposed by SMCTA, do not have the potential to cumulatively contribute to effects on the environment when viewed in connection to this project.

c) Less than Significant Impact

As noted in the previous CEQA checklist items above, the project would have a less-than-significant impact or no impact on the environment, including on aesthetics, habitat and threatened and endangered species, and cultural resources. This project does not have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species or cause a drop in their population below self-sustaining levels.

Caltrans considered a future multi-asset project (EA 04-0Q130K), another Caltrans project, as part of its cumulative analysis. The purpose of the multi-asset project would be to restore the roadway to a condition that would require only minimal maintenance expenditures, and to upgrade existing traffic system infrastructure. The multi-asset project would take place along SR 1 south of the project limits between Wavecrest Road and 0.1 mile south of Marine Boulevard, in San Mateo County. Project elements would include upgraded guardrails, variable message signs at 5 locations, roadway rehabilitation, and improvements to transit, bicycle, and pedestrian facilities. Circulation of the draft CEQA document for the multi-asset project is anticipated in March 2022. Features to be included in the multi-asset project would be similar in scale and style with existing roadway elements in the corridor and no significant impacts are anticipated.

Based on the analysis provided in the CEQA checklist items above, the project would not have impacts that would be cumulatively considerable. The short-term and temporary nature of construction impacts and negligible long-term effects would result in less-than-significant or no impacts for all resource areas evaluated. Therefore, the project, in combination with known past, present, or future projects, would not contribute in a cumulative manner to effects on the environment. This project would not have any environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly.

2.24 Climate Change

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

Although climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change by the United Nations and World Meteorological Organization in 1988 led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity, including CO_2, CH_4, N_2O, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, and various HFCs. CO_2 is the most abundant GHG; although it is a naturally occurring component of the Earth's atmosphere, fossil-fuel combustion is the main source of additional, human-generated CO_2.

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

2.24.1 Regulatory Setting

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

2.24.1.1 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.

The National Environmental Policy Act (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.

The Federal Highway Administration (FHWA) recognizes the threats that extreme weather, sea-level change, and other changes in environmental conditions pose to valuable transportation infrastructure and those who depend on it. 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.

Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects. The most important of these was the Energy Policy and Conservation Act of 1975 (42 USC Section 6201) and Corporate Average Fuel Economy Standards. This act establishes fuel economy standards for on-road motor vehicles sold in the United States. Compliance with federal fuel economy standards is determined through the Corporate Average Fuel Economy program based on each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the United States.

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

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

2.24.1.2 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 (Health and Safety Code 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 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 re-adopted the low carbon fuel standard regulation in September 2015, and the changes went into effect on January 1, 2016. The program establishes a strong framework to promote the low-carbon fuel adoption necessary to achieve the Governor's 2030 and 2050 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: 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) orders 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) establishes an interim statewide GHG emission reduction target of 40 percent below 1990 levels by 2030 to ensure 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 ($MMTCO_2e$). 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, 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, 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."

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

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, 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: This bill requires ARB to prepare a report that assesses progress made by each MPO in meeting their established regional GHG emission reduction targets.

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

EO N-19 19 (September 2019) advances California's climate goals in part by directing the California State Transportation Agency to leverage annual transportation spending to reverse the trend of increased fuel consumption and reduce 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.

2.24.1.3 Environmental Setting

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

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

2.24.1.4 National GHG Inventory

The U.S. EPA has prepared the Inventory of the U.S. Greenhouse Gas Emissions and Sinks every year since the 1990s and submits it to the United Nations in accordance with the Framework Convention on Climate Change (see Figure 2-7). The inventory provides a comprehensive accounting of all human-produced sources of GHGs in the United States, reporting emissions of CO_2, CH_4, N_2O, HFCs, perfluorocarbons, sulfur hexafluoride (SF_6), and nitrogen trifluoride. It also accounts for emissions of CO_2 that are removed from the atmosphere by "sinks" such as forests, vegetation, and soils that uptake and store CO_2 (carbon sequestration). In 2018, GHG emissions from the transportation sector accounted for 28 percent of US GHG emissions (U.S. EPA 2020).

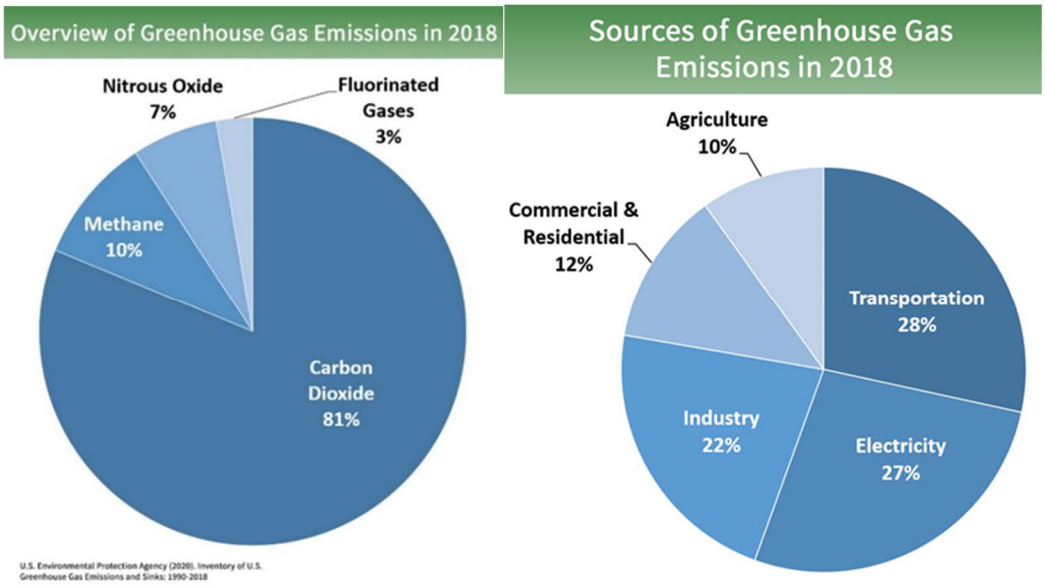

Figure 2-7 U.S. 2016 Greenhouse Gas Emissions

2.24.1.5 State GHG Inventory

ARB collects GHG emissions data for transportation, electricity, commercial/residential, industrial, agricultural, and waste management sectors each year (see Figure 2-8). It then summarizes and highlights major annual changes and trends to demonstrate the state's progress in meeting its GHG reduction goals. The 2019 edition of the GHG emissions inventory found total California emissions of 424.1 $MMTCO_2e$ for 2017, with the transportation sector responsible for 41 percent of total GHGs. It also found that overall statewide GHG emissions declined from 2000 to 2017 despite growth in population and state economic output (ARB 2019a) (see Figure 2-9).

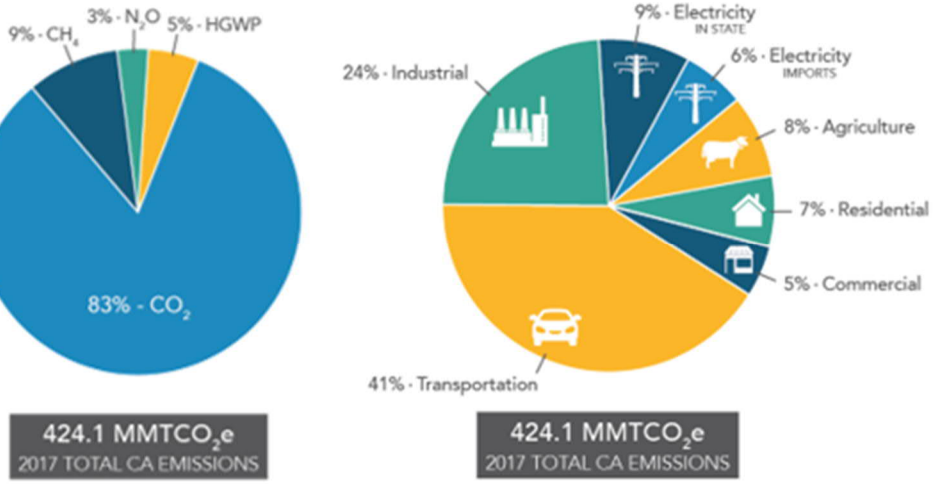

Figure 2-8 California 2017 Greenhouse Gas Emissions

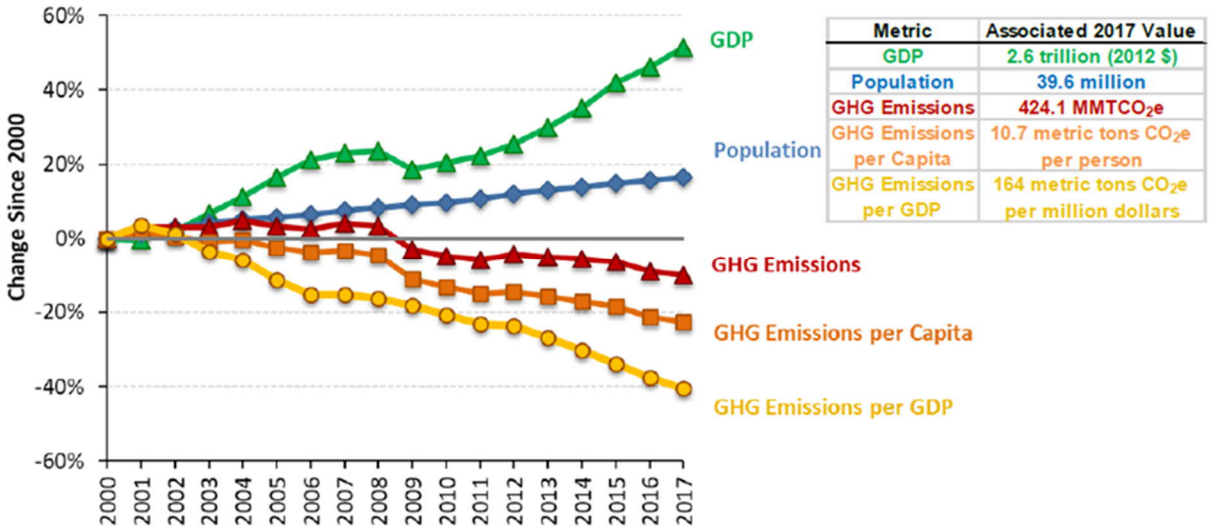

Figure 2-9 Change in California GDP, Population, and GHG Emissions since 2000 (Source: ARB 2019a)

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.

2.24.2 Regional Plans

ARB sets regional targets for California's 18 MPOs to use in their Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS) to plan future projects that will 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 is the MPO and regional transportation planning agency for the project region, for which ARB has established GHG reduction targets of 10 percent by 2020 and 19 percent by 2035. However, the project is not included in the RTP/SCS project list.

Plan Bay Area goals align with those of the California Transportation Plan 2040, which include CO_2 emissions reduction to tackle future climate change and fixing an aging transportation system (ABAG and MTC 2017).

The BAAQMD's 2017 clean air plan, Spare the Air, Cool the Climate, defines strategies for climate protection in the Bay Area that support goals laid out in Plan Bay Area. 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.

San Mateo County adopted an energy efficiency climate action plan in 2013 with a GHG reduction target of 17 percent below 2005 emissions levels by 2020. The climate action plan aligns with GHG-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 2013b).

2.24.2.1 Project Analysis – Construction Emissions

GHG gasses are responsible for causing climate change. As discussed in Section 2.10 Greenhouse Gas Emissions, GHG gasses would be generated during construction of the project. It was estimated that for a construction duration of 12 months, the total amount of CO_2 produced for the construction of the project would be 395.00 tons. Total CO_2e emissions (CO_2, CH_4, and N_2O) would be 362.73 metric tons. The CEQA Guidelines generally address GHG emissions as a cumulative impact due to the global nature of climate change (Pub. Resources Code, § 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. Because GHG emissions associated with the construction of this project are not substantial, this project is not expected to contribute a significant cumulative impact. There may be some GHG emissions 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.

2.24.2.2 Project Analysis – Operational Emissions

The purpose of this project is to enhance traffic safety by reducing run-off-the-road accidents from errant vehicles within the project limits. The project is not a capacity increasing project. Because the project would not increase the number of travel lanes, no increase in VMT would occur as result of project implementation. Although some GHG emissions during the construction period would be unavoidable, no increase in operational GHG emissions is expected.

2.24.3 Greenhouse Gas Reduction Strategies

2.24.4 Statewide Efforts

Major sectors of the California economy, including transportation, will need to reduce emissions to meet the 2030 and 2050 GHG emissions targets. Former Governor Edmund G. Brown promoted GHG reduction goals that involved (1) reducing today's petroleum use in cars and trucks by up to 50 percent; (2) increasing from one-third to 50 percent our electricity derived from renewable sources; (3) doubling the energy efficiency savings achieved at existing buildings and making heating fuels cleaner; (4) reducing the release of methane, black carbon, and other short-lived climate pollutants; (5) managing farms and rangelands, forests, and wetlands so they can store carbon; and (6) periodically updating the state's climate adaptation strategy, Safeguarding California (see Figure 2-10).

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. A key state goal for reducing GHG emissions is to reduce today's petroleum use in cars and trucks by up to 50 percent by 2030 (State of California 2019).

In addition, SB 1386 (Wolk 2016) established as state policy the protection and management of natural and working lands and requires state agencies to consider that policy in their own decision making. Trees and vegetation on forests, rangelands, farms, and wetlands remove CO_2 from the atmosphere through biological processes and sequester the carbon in above- and below-ground matter.

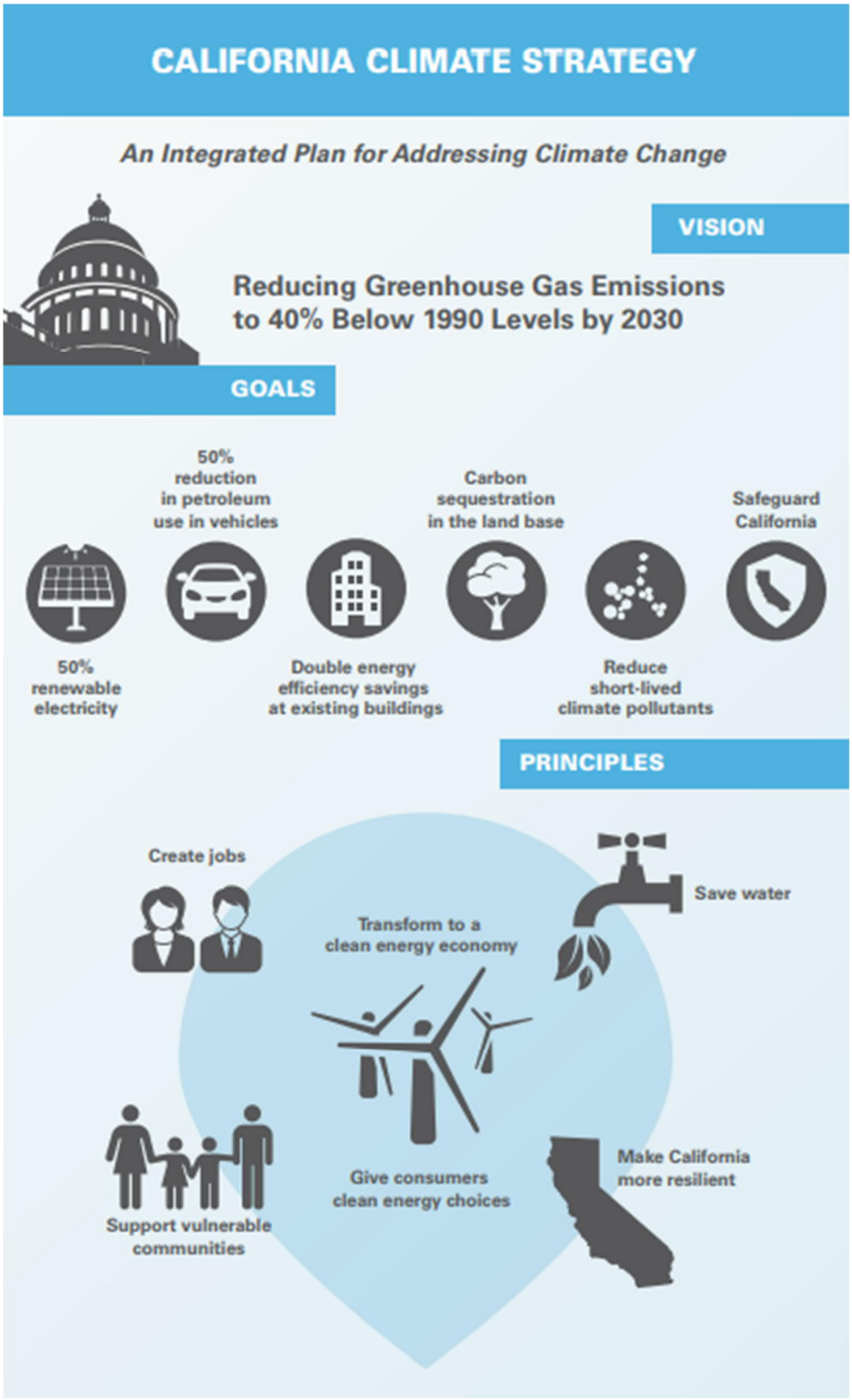

Figure 2-10 California Climate Strategy

2.24.4.1 Caltrans Activities

Caltrans continues to be involved on the Governor's Climate Action Team as the 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.

2.24.4.2 Caltrans Strategic Management Plan

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

- Increasing percentage of non-auto mode share
- Reducing VMT
- Reducing Caltrans' internal operational (buildings, facilities, and fuel) GHG emissions

2.24.4.3 Funding and Technical Assistance Programs

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

2.24.4.4 Caltrans Policy Directives and Other Initiatives

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

2.24.5 Project-Level GHG Reduction Strategies

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

1. 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 (see Feature GHG-1).

2. A TMP will be prepared during the design phase of the project to minimize traffic disruptions from project construction. Minimizing traffic delays during construction will help reduce GHG emissions from idling vehicles (see AMM TRANS-1).

3. BMPs for air quality will be incorporated during construction activities such as limiting the idling of vehicles and equipment onsite and maintaining vehicles and equipment.

2.24.5.1 Adaptation

Adaptation strategies refer to how Caltrans and others can plan for the effects of climate change on the State's transportation infrastructure and strengthen or protect the facilities from damage or, planning and design for resilience. 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; 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.

2.24.5.2 Federal Efforts

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

The U.S. Global Change Research Program delivers a report to Congress and the president every 4 years, in accordance with the Global Change Research Act of 1990 (15 USC Ch. 56A § 2921 et seq). The Fourth National Climate Assessment, published in 2018, presents the foundational science and the "human welfare, societal, and environmental elements of climate change and variability for 10 regions and 18 national

topics, with particular attention paid to observed and projected risks, impacts, consideration of risk reduction, and implications under different mitigation pathways." Chapter 12, "Transportation," presents a key discussion of vulnerability assessments. It notes that "asset owners and operators have increasingly conducted more focused studies of particular assets that consider multiple climate hazards and scenarios in the context of asset-specific information, such as design lifetime" (USGCRP 2018).

The 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).

2.24.5.3 State Efforts

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system. California's Fourth Climate Change Assessment (State of California 2018) is the state's effort to "translate the state of climate science into useful information for action" in a variety of sectors at both statewide and local scales. It adopts the following key terms used widely in climate change analysis and policy documents:

- Adaptation to climate change refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.

- Adaptive capacity is the "combination of the strengths, attributes, and resources available to an individual, community, society, or organization that can be used to prepare for and undertake actions to reduce adverse impacts, moderate harm, or exploit beneficial opportunities."

- Exposure is the presence of people, infrastructure, natural systems, and economic, cultural, and social resources in areas that are subject to harm.
- Resilience is the “capacity of any entity—an individual, a community, an organization, or a natural system—to prepare for disruptions, to recover from shocks and stresses, and to adapt and grow from a disruptive experience”. Adaptation actions contribute to increasing resilience, which is a desired outcome or state of being.
- Sensitivity is the level to which a species, natural system, or community, government, etc., would be affected by changing climate conditions.
- Vulnerability is the “susceptibility to harm from exposure to stresses associated with environmental and social change and from the absence of capacity to adapt.” Vulnerability can increase because of physical (built and environmental), social, political, and/or economic factor(s). These factors include, but are not limited to ethnicity, class, sexual orientation and identification, national origin, and income inequality. Vulnerability is often defined as the combination of sensitivity and adaptive capacity as affected by the level of exposure to changing climate.

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

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

EO S-13 08 also led to the publication of a series of sea-level rise assessment reports and associated guidance and policies. These reports formed the foundation of an interim State of California Sea-Level Rise Interim Guidance Document in 2010, with instructions for how state agencies could incorporate “sea-level rise projections into planning and decision making for projects in California” in a consistent way across agencies. The guidance was revised and augmented in 2013. Rising Seas in California – An Update on Sea-Level Rise Science was published in 2017 and its updated projections of sea-level rise and new understanding of processes and potential impacts

in California were incorporated into the State of California Sea-Level Rise Guidance Update in 2018.

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 other than 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. Representatives of Caltrans participated in the multi-agency, multidisciplinary technical advisory group that developed this guidance on how to integrate climate change into planning and investment.

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

2.24.6 Caltrans Adaptation Efforts

2.24.6.1 Caltrans Vulnerability Assessments

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

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

The climate change data in the assessments were developed in coordination with climate change scientists and experts at federal, state, and regional organizations at the forefront of climate science. The findings of the vulnerability assessments will guide analysis of at-risk assets and development of adaptation plans to reduce the likelihood of damage to the State Highway System, allowing Caltrans to both reduce the costs of storm damage and to provide and maintain transportation that meets the needs of all Californians.

2.24.7 Project Adaptation Analysis

2.24.7.1 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 end of century (i.e., the year 2100) with a 1-in-20 (5 percent) probability indicates that sea level rise would rise to meet or exceed 4.4 feet above current conditions. To analyze how this level of impact would have impact on the project area, the National Oceanic and Atmospheric Administration (NOAA) Sea Level Rise viewer (https://coast.noaa.gov/digitalcoast/tools/slr.html) and Point Blue's Our Coast Our Future viewer (https://data.pointblue.org/apps/ocof/cms/index.php?page=flood-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 using the NOAA viewer and 4.9 feet using the Point Blue viewer). According to the Point Blue viewer, the project area may be at risk of sea level rise, including cliff retreat in this scenario.

Cliff retreat refers to the progressive erosion of the coast due to wave activity. Climate change and its systemic effects are anticipated to accelerate this erosion over time. The project would not exacerbate the effects of climate change. The proposed safety features would be designed to reduce run-off-the road accidents, without affecting the stability of cliff top edges in the project area. Section 2.9 describes the geological considerations of the project further. Accordingly, there are no anticipated direct impacts on transportation facilities due to sea level rise as a result of the project.

2.24.7.2 Floodplains

Reference was made to Federal Emergency Management Agency Flood Insurance Rate Map (FIRM) numbers, 06081C0117F and 06081C0109F, both dated August 2, 2017. Based on these FIRMs, there are no locations where project work is within a base

floodplain. Therefore, the proposed work is not expected to have any impacts to these floodplains.

Chapter 3 Comments and Coordination

Early and continuing coordination with the general public and public agencies is an essential part of the environmental process. It helps planners to determine the necessary scope of environmental documentation and the level of analysis required; and to identify potential impacts and avoidance, minimization, and/or mitigation measures and related environmental requirements. 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 U.S. Fish and Wildlife Service Consultation Summary

Official species lists were acquired on February 10, 2021, June 23, 2021, and November 30, 2021. Technical assistance with the USFWS Coast-Bay division was requested on May 26, 2021.

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

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

A Biological Assessment was prepared pursuant to FESA and was submitted to USFWS on April 15, 2022 to initiate Section 7 consultation. Take (including harassment, harm, wound, and kill) is anticipated with implementation of the Preferred Alternative. No effects to any other listed, candidate, or proposed species are anticipated. Caltrans biologists have worked closely with project engineers to limit the size and scope of the project. In addition, AMMs, including but not limited to, training for construction personnel, seasonal avoidance, environmentally sensitive area fencing, entrapment

avoidance, preconstruction surveys, and biological monitoring, will be implemented to reduce impacts to listed, candidate, and proposed species and their habitats.

By implementing these measures, Caltrans anticipates minimal adverse direct impacts to the California red-legged frog and its habitat, and San Francisco garter snake.

Caltrans obtained official NMFS species lists on February 10, 2021, June 23, 2021, and November 30, 2021. The project does not overlap with any waterways that support listed fish species. Caltrans has determined there will be no effect on listed species under NMFS' jurisdiction.

3.1.2 California Department of Fish and Wildlife Consultation Summary

State-listed species that have the potential to occur within the BSA, including Hickman's cinquefoil (at locations 1 and 6) and coast yellow leptosiphon. Potential to occur is moderate, and plants were not observed during spring 2021 rare plant surveys. State-level take of California Endangered Species Act (CESA) species is not anticipated. However, if project activities are later determined to rise to the level of "take" of state-listed species, Caltrans will coordinate with the California Department of Fish and Wildlife (CDFW) to determine the next steps.

3.1.3 Coastal Zone Coordination

The project is within the jurisdiction of the San Mateo LCP.

On September 23, 2021, Caltrans hosted a preliminary stakeholder outreach meeting to provide a summary of the project. Attendees included representatives from the following agencies:

- California Coastal Commission
- San Mateo County
- City of Half Moon Bay
- Midcoast Community Council
- Half Moon Bay Coastside Chamber of Commerce

Caltrans presented an overview of the project and solicited feedback and questions from the meeting attendees. Although attendees voiced support for the project, they also expressed concerns regarding aesthetic characteristics of the proposed safety barriers.

Caltrans will continue to coordinate with all stakeholders as the project moves forward.

3.2 Circulation, Review, and Comment on the Initial Study

Public input on the project was solicited during the review period for the Initial Study/Proposed Mitigated Negative Declaration, which lasted from January 12, 2022 to February 11, 2022. The public was notified of the availability of the Initial Study/Proposed Mitigated Negative Declaration by a number of methods, including postings on the Caltrans website, local newspapers, postcards, and an emailed announcement to interested agencies and individuals. During the review period, Caltrans held a virtual public meeting on Thursday, January 27, 2022 to share information about the project with interested parties. The review period and instructions for submitting comments were also included on the first page of the Initial Study/Proposed Mitigated Negative Declaration.

As described in Section 1.4.5, subsequent to the circulation of the Initial Study/Proposed Mitigated Negative Declaration, the PDT identified Build Alternative 1 as the Preferred Alternative. Implementation of Build Alternative 1 would not result in adverse effects and mitigation measures are no longer necessary. Therefore, a Negative Declaration (as opposed to a Mitigated Negative Declaration) has been adopted for the project.

All formal comments are addressed and responses published in this Initial Study/ Negative Declaration as described below. Complete copies of all comments received during the public review period are included in Appendix F.

3.2.1 Comments and Responses

The text of each comment received during review of the Initial Study/Proposed Mitigated Negative Declaration is presented below. Comments have been copied directly from comments received and as such may contain spelling and grammatical errors. Responses follow each comment that is related to the adequacy of the IS for addressing environmental effects associated with the proposed project. Caltrans has, in some instances, decided to incorporate changes to the text in response to comments on the IS. These changes are summarized in the responses and incorporated into the IS. Other revisions were made after the public review period to complete coordination with regulatory agencies. All revisions are indicated by a vertical line in the margin of the IS text, similar to the one shown to the left of this paragraph.

3.2.1.1 California Coastal Commission (Rainey Graeven, Senior Coastal Transportation Planner, Central Coast Division)

Comment CCC-1

Thank you for the opportunity to provide comments on the Draft Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed Highway 1 Safety Barrier Project (Safety Barrier Project) located in San Mateo County between post miles 36.49 and 38.31. The Project generally seeks to update existing safety barriers and install new/additional safety barriers in eleven locations along the approximately two-mile stretch of Highway 1 from just north of Gray Whale Cove to the community of Montara in both the northbound and southbound directions. Per the Draft IS/MND, the proposed project is in response to a documented ongoing occurrence of vehicle road runoffs and accidents along this stretch of Highway 1. We would like to offer the following comments on the draft IS/MND to help guide the forthcoming CDP process.

Response to Comment CCC-1

This comment contains introductory statements; no response is required.

Comment CCC-2

CDP Jurisdictions and Permitting

In terms of coastal permitting, it is our understanding that the Safety Barrier Project does not entail any development within the Commission's retained coastal development permit (CDP) jurisdiction, and that the final IS/MND will be updated to reflect that the project is located exclusively within San Mateo County's CDP jurisdiction. The final IS/MND should also note that the CDP issued by San Mateo County will be appealable to the Commission because of its location between the sea and the first through public road paralleling the sea.[1] Accordingly, the San Mateo County Local Coastal Program (LCP) and the public access/recreation policies of the Coastal Act will be the standard of review for the proposed Safety Barrier Project.

[1.] Pursuant to Coastal Act Section 30603(b)(1), the grounds for an appeal "shall be limited to an allegation that the development does not conform to the standards set forth in the certified local coastal program or the public access policies of this division" whereby "this division" refers to Chapter 3 of the Coastal Act.

Response to Comment CCC-2

Sections 1.1.3, 1.1.8, 2.13, and 3.1.3 of the Initial Study have been updated to correct the description of coastal permitting requirements.

Comment CCC-3

Alternatives (Build Alternative 1 and Build Alternative 2)

The draft IS/MND identifies two potential build alternatives, namely Build Alternative 1 and Build Alternative 2. Under Build Alternative 1, all existing nonstandard metal beam guard rail (MBGR) and k-rail would be replaced with Midwest guardrail system (MGS) and new safety barriers (either CB Type 85, Type ST 75, or MGS) would be installed at 11 locations (9 in the SB direction and 2 in the NB direction).[2] Build Alternative 2 is similar to Build Alternative 1 except that Build Alternative 2 also proposes to widen the highway shoulder between 2-5 feet in some locations, which would, per the draft IS/MND, trigger the need for solider pile retaining walls at certain locations that range in height from 5 feet to 20 feet.[3] Per the draft IS/MND, the construction timeline for Build Alternative 1 is only one season,[4] whereas Build Alternative would span two seasons (approximately 14 months in total with construction activities limited to a "summer" work window between either April 15th or June 1st and concluding by October 15th of each year).

The draft IS/MND is somewhat confusing on the use of retaining walls in the two alternatives and this should be clarified. Although Section 1.4.1 "Common Design Features of the Build Alternatives" notes that retaining walls would be constructed in both build alternatives, there is no mention of the proposed locations or type(s) of retaining walls proposed in Build Alternative 1 elsewhere in the draft IS/MND including in Section 1.3 "Project Description", Table 1-1 "Proposed New Safety Barrier Locations for Build Alternative 1", or 1.4.2 "Build Alternative 1." Thus, it appears retaining walls are not actually proposed in Build Alternative 1. If that is the case (i.e., that retaining walls are not proposed in Build Alternative 1), then Section 1.4.1 should be updated to reflect that "retaining walls" are not a feature common to both build alternatives. If, however, retaining walls are proposed in Build Alternative 1, the final IS/MND should be updated to include notations, descriptions, visual simulations, and the corresponding anticipated environmental impact analysis for any retaining walls proposed in Build Alternative 1. As discussed below, there are numerous LCP consistency issues that arise from the retaining walls, and these will need to be analyzed for each alternative that includes them.

[2] In total under Build Alternative 1, approximately 205 feet of K-rail, 1,033 feet of MBGR, and 181 feet of parapet wall would be removed and replaced with roughly 3,358 feet of MGS and 110 feet of CB Type 85 or Type ST-75 or 3,338 feet of MGS and 197 feet CB Type 85 or Type ST-75 (depending on whether CB Type 85/Type ST-75 or MGS is chosen for Location # 6).

[3] In total under Build Alternative 2, approximately 205 feet of K-rail, 1,033 feet of MBGR, and 181 feet of parapet wall would be removed and replaced with between 2,097-2,927 linear feet of MGS, between 200-620 feet of CB Type 85/Type ST-75 (depending on whether MGS or CB Type-85/Type ST-75 is chosen at Locations 2,5,6, and 8), and 763 feet of new retaining walls.

[4] Section 1.6.2 on page 32 of the draft IS/MND notes that; "Depending on the alternative selected, the construction schedule is anticipated to take 200 working days (14 months), from July 2024 through August 2025," and also that "the implementation of Alternative 1 would require one construction season and the implementation of Alternative 2 would require two construction

seasons." We recommend updating the first sentence to better clarify the number of working days anticipated for Build Alternative 1.

Response to Comment CCC-3

Build Alternative 1 (the Preferred Alternative) does not include retaining walls at any of the 11 locations within the project limits. Section 1.4.1 of the Initial Study has been revised to delete reference to retaining walls as a common design feature of the build alternatives.

Section 1.6.2 has been revised to provide more detail on the construction phases for the build alternatives.

In addition, as described in Section 1.4.5, the PDT has selected Build Alternative 1 as the Preferred Alternative. Therefore, retaining walls and shoulder widening are no longer under consideration.

Comment CCC-4

Environmentally Sensitive Habitat Area (ESHA)/Wetlands

In terms of anticipated impacts to ESHA, wetlands, the San Francisco Garter Snake (SFGS), and the California Red Legged Frog (CRLF), Build Alternative 1 would result in an estimated .02 acres of temporary impacts to wetlands, .28 acres of temporary impacts and .3 acres of permanent impacts to the SFGS, and .28 acres of temporary impacts and .3 acres of permanent impacts to upland/dispersal habitat for the CRLG, and .23 acres of temporary impacts and .25 acres of permanent impacts to designated critical habitat for the CRLF. Build Alternative 2 would result in an estimated .03 acres of temporary impacts and .03 acres of permanent impacts to wetlands, .26 acres of temporary impacts and .57 acres of permanent impacts to the SFGS, .26 acres of temporary impacts and .57 acres of permanent impacts to upland/dispersal habitat for the CRLG, and .22 acres of temporary impacts and .53 acres of permanent impacts to designated critical habitat for the CRLF.

The LCP includes strong protections for ESHA, wetlands, and riparian corridors; it prohibits development which would have significant adverse ESHA impacts (see LUP Policy 7.3(a)); requires that development adjacent to ESHA be sited and designed to prevent impacts that could significantly degrade sensitive habitats (see LUP Policy 7.3(b)); allows only resource-dependent uses within ESHA and wetlands (see LUP Policy 7.4(a)); and requires that significant impacts be avoided and/or mitigated (see LUP Policy 7.5(a)). The LCP includes slightly different protections for riparian corridors[5]; it allows for repair/maintenance of roads and bridges when supports are not in significant conflict with corridor resources provided no feasible or practicable alternative exists (see LUP Policy 7.9(b)); requires that vegetation removal be minimized; that erosion, sedimentation, and runoff be minimized through appropriate grading and replanting; that adapted native species be

used in replanting; and that natural vegetation buffer areas that protect riparian habitats be maintained (see LUP Policy 7.10).

Both build alternatives raise LCP consistency questions including in terms of the types of uses proposed, and because both alternatives would result in temporary and permanent impacts to ESHA, wetlands, sensitive species, and/or riparian corridors. The draft IS/MND identifies greater and more significant ESHA/wetland/sensitive species impacts for Build Alternative 2, and thus Build Alternative 2 does not appear to be a viable alternative. Build Alternative 1 also raises significant LCP consistency questions regarding the types of use(s) proposed and the unavoidable impacts, and thus we recommend coordinating closely with Commission staff and County staff to discuss these LCP consistency questions, including to avoid/minimize potential impacts, and to develop a mitigation plan for any unavoidable impacts.

[5] At this time, it is not clear whether the proposed project would bisect or impact riparian corridors; some of the riparian protection LCP policies are cited above in the event the proposed project may result in impacts to riparian corridors. We recommend that final IS/MND clarify whether riparian corridors, in addition to ESHA and wetlands, would be impacted by the proposed Safety Barrier Project including to better understand the full extent of policies that the project will ultimately be evaluated against.

Response to Comment CCC-4

Table 2-7, in Section 2.13, has been revised to directly address the SMLCP policies cited in this comment. It should be noted that upland/dispersal habitat was assumed to overlap for the San Francisco garter snake and California red-legged frog. During the final design and permitting phase, Caltrans will coordinate with San Mateo County to obtain the proper permit, and to ensure that the project complies with the policies of the SMLCP. In addition, measures will be implemented before and during construction to avoid and minimize potential impacts to California red-legged frog and San Francisco garter snake.

Comment CCC-5

Visual Resources Protection

The LCP includes broad protections for public coastal views; LCP Policy 8.15 "Coastal Views" prevents development (including the proposed bridge barriers) from "substantially blocking views to or along the shoreline from coastal roads, roadside rests and vista points […]." Both build alternatives propose to replace and update the existing highway barriers to meet current safety/design standards and the placement of new highway barriers in new locations to minimize the risk of vehicle runoffs. Both build alternatives propose to use a combination of MGS, CB Type 85, and Type ST-75, and Build Alternative 2[6] also proposes the use of retaining walls ranging from 5 feet tall to 20 feet tall. Of the three types of bridge barriers proposed in both build alternatives, MGS is

least impactful to coastal views, and thus we recommend its use instead of CB Type 85 or Type ST-75 wherever possible. Guardrail is also currently used in this highway corridor, and the MGS would be more consistent with existing conditions. Additionally, to avoid further visual impacts, the MGS should not employ associated maintenance cable railing, or visually intrusive reflective tabs that stand atop the railings, at least without substantial justification.

If MGS cannot be used in certain locations, an explanation of why it cannot be used should be provided, such as an explanation of the safety requirements for the use of the more intrusive barriers. For those sections in which MGS is ruled out as a feasible alternative, we would further recommend that Type ST-75 be used instead of CB Type 85 because it has fewer viewshed impacts. Specifically, Type ST-75 is less material/bulky compared to CB Type 85 and offers slightly more articulation and visual connectivity to the blue water views along Highway 1 in this stretch of coast.

As for the retaining walls proposed in Build Alternative 2, we would note that the proposed retaining walls raise a variety of LCP consistency questions given their inherent adverse coastal resource impacts to visual resources, public access/recreation, and sand supply/landform alteration, and in this case, more impacts to ESHA and wetlands compared with Build Alternative 1. Moreover, as discussed directly below, it is not clear that retaining walls would even be allowable here given the accompanying adverse coastal resource impacts, and whether the threshold to allow shoreline armoring can be met. If retaining walls are allowable (which again does not appear to be the case here), the retaining walls would need to be designed to minimize and mitigate any impacts to visual resources, through such strategies as burying the wall and/or obscuring with native plantings.

Visual impacts of this project can also be minimized through the removal of existing but unnecessary infrastructure – such as the white reflective tabs currently used along the highway bluffs, or other random and unnecessary posts, signs, or fencing.

[6] As described in the "Alternatives" section on page 2, it is our understanding that retaining walls are not proposed in Build Alternative 1.

Response to Comment CCC-5

The California Coastal Commission's recommendations on barrier types have been noted. Section 2.13 has been revised to cite LCP Policy 8.15, "Coastal Views," with regard to the project's anticipated effects on visual resources. Response a) under Section 2.3 evaluated whether the project would have "a substantial adverse effect on a scenic vista." As stated in Section 2.3, new segments of safety barrier would feature open, see-through designs to maintain scenic views to the ocean beyond. Due to their limited quantity and scale, along with their "see-through" design that maintains views of the ocean and the surrounding landscape, the proposed safety barriers would not fundamentally alter the scenic character or quality of the project area.

As described in Chapter 1, MGS, ST-75, and CB Type 85 barriers are under consideration at the various locations within the project limits. During the final design and permitting phase, Caltrans will coordinate with San Mateo County and CCC on final barrier selection and design.

As described in Section 1.4.5, the PDT has selected Build Alternative 1 as the preferred alternative. Build Alternative 1 does not include retaining walls in its design, and would be consistent with the SMLCP's policies on visual resources in this regard.

Comment CCC-6

Shoreline Armoring

The LCP limits the use of shoreline protective structures including retaining walls when necessary to serve coastal-dependent uses, to protect existing development, or to protect public beaches in danger of erosion; when designed to eliminate or mitigate adverse impacts of local shoreline sand supply; and when non-structural methods are infeasible or impracticable (see LCP Policy 9.12(a)). The LCP also provides that shoreline protective devices can be used to protect existing roadway facilities which provide access to beaches and recreational facilities when alternative routes are not feasible and when protective devices are designed in accordance with the requirements of the LCP (see LUP Policy 9.12(b)). As applicable here, shoreline armoring devices can only be employed when necessary to protect existing structures, and when non-structural methods are infeasible. Per the draft IS/MND, the shoulder widening proposed in Build Alternative 2 would trigger the need for retaining walls in certain locations. Build Alternative 1 demonstrates that a non-structural and less environmentally damaging alternative exists, thereby eliminating Build Alternative 2 as a viable option. Moreover, as noted above, the added shoulder width and accompanying retaining walls would result in more significant ESHA, wetlands, and sensitive species impacts, raising additional LCP consistency and approvability issues.

Response to Comment CCC-6

Thank you for your comment. As described in Section 1.4.5, the PDT has selected Build Alternative 1 as the preferred alternative. Therefore, retaining walls and shoulder widening are no longer under consideration. In addition, Table 2-7 in Section 2.13 has been revised to address the SMLCP policies cited in this comment.

Comment CCC-7

Preferred Alternative

In terms of the alternatives identified in the draft IS/MND, the no project alternative would not achieve the identified project goals (i.e., to improve safety and reduce vehicle runoffs). Build Alternative 2 raises a wider array and more significant coastal resource impacts, and more

significant LCP consistency questions compared to Build Alternative 1. Given the significant coastal resource impacts and LCP consistency issues, Build Alternative 2 does not appear to be a viable alternative. Build Alternative 1 also raises LCP consistency issues and coastal resource concerns, and thus it will be important to work through these issues to minimize coastal resource impacts and minimize/mitigate any unavoidable impacts to achieve a project that best meets the LCP's requirements.

Response to Comment CCC-7

Thank you for your comment; your preference has been noted. As described in Section 1.4.5, the PDT has selected Build Alternative 1 as the preferred alternative. Caltrans will continue to work with the CCC and San Mateo County during the permitting and design phases to avoid and minimize impacts to coastal resources.

Comment CCC-8

In closing, we would like to thank you for your consideration of these comments, and your active and early coordination on this project. We recognize the safety issues driving the project, and it is our hope that through such early coordination we can minimize potential coastal resource impacts and LCP consistency issues. Please do not hesitate to contact me about these comments or to discuss the project further.

Response to Comment CCC-8

This comment contains concluding statements; no response is required.

3.2.1.2 California Transportation Commission (Jose L. Oseguera)

Comment CTC-1

We received your Notice of Preparation for the Draft Initial Study for the San Mateo Sate Route 1 Safety Barrier Project. At this time, the California Transportation Commission has no comments. Please notify the Commission as soon as the environmental process is complete.

Response to Comment CTC-1

Thank you for your comment. Caltrans will continue to notify the CTC regarding project milestones.

3.2.1.3 County of San Mateo Planning and Building (Melissa Ross, Planning Services Manager)

Comment County of San Mateo-1

Permitting

IS/MND Sections 1.1.3 Local Planning (p.1-3), 2.13 Land Use and Planning (p.2-47), and 3.1.3 Coastal Zone Coordination (p.3-2) acknowledge that project is in the coastal zone and would be governed by the County's Local Coastal Program (LCP) and that it must comply with policies of the LCP. San Mateo County's LCP characterizes the proposed improvements as Public Works (LCP Policy 2.2(b)) and requires that all public works projects within the County's coastal zone obtain a CDP or exemption from CDP requirements. The IS/MND should clarify (Table 1-4) that the proposed Project is located within San Mateo County's CDP permit jurisdiction; however, any issued CDP will be appealable to the California Coastal Commission (CCC) (PRC Section 30603).

Response to Comment County of San Mateo-1

Sections 1.1.3, 1.1.8 (including Table 1-4), 2.13, and 3.1.3 of the Initial Study have been updated to correct the description of coastal permitting requirements.

Comment County of San Mateo-2

LCP Consistency

As part of the CDP process, it will be necessary for Caltrans to demonstrate consistency with the County's LCP. IS/MND Section 2.13 Land Use and Planning (p.2-45) includes a preliminary consistency analysis, with Table 2-7 (p.2-50) summarizing the project's potential impacts per key components of the LCP. LCP Policy 2.48(b) requires roadway improvements be consistent with all applicable policies of the Local Coastal Program, including, but not limited to, the Sensitive Habitats and Agriculture Components. Potential LCP consistency issues are described further below.

Response to Comment County of San Mateo-2

This comment and the potential SMLCP consistency issues described below have been noted. Detailed responses have been provided below for each potential consistency issue raised.

Comment County of San Mateo-3

Sensitive Habitats Component

LCP Policy 7.1 defines sensitive habitats as any area in which plant or animal life or their habitats meets certain criteria, including habitats containing or supporting "rare and endangered" species as defined by the State Fish and Game Commission. The LCP includes protections for sensitive habitats and rare and endangered species, including but not limited to:

- Prohibit any land use or development which would have significant adverse impact on sensitive habitat areas, and develop areas adjacent to sensitive habitat to prevent impacts that could degrade the habitat. (Policy 7.3 Protection of Sensitive Habitats)
- Permitting only resource dependent uses in sensitive habitats. (Policy 7.4 Permitted Uses in Sensitive Habitats)

- Requiring the applicant to demonstrate that there will be no significant impact on sensitive habits, and if determined that significant impacts may occur, require reporting, monitoring, and mitigations. (Policy 7.5 Permit Conditions)
- Prevents development where there is known to be a riparian or wetland location for the San Francisco Garter Snake with exceptions for existing man-made impoundments smaller than ½ acre in surface or where mitigation measures are taken to prevent disruption of no more than ½ of the snake's known habitat in the location, and requires sufficient analysis of construction impacts that could impair potential or existing snake migration routes to inform mitigation measures. (Policy 7.36 San Francisco Garter Snake)
- Prevents any development on or within 50 feet of any rare plant population; if no feasible alternative exists, development is permitted if a significant portion of the site is returned to a natural state to allow for plant reestablishment or a new site is made available for the plan to inhabit. (Policy 7.42 Development Standards)

The IS/MND's biological study area (BSA) is a 400-foot buffer around the project's starting and ending post miles on SR 1, and includes portions of McNee Ranch State Park, Montara State Park, residential and private property, and Caltrans property (p.2-21). The IS/MND identifies under both build alternatives, potential temporary and permanent impacts to Seaside Daisy Alliance, San Francisco Garter Snake, California Red Legged Frog, and other species, with more significant impacts under Build Alternative 2 (p.2-22 to 2-26). As part of the permit process, Caltrans will need to coordinate closely with the County to avoid, minimize, and mitigate temporary and permanent impacts to sensitive habitats and species.

Response to Comment County of San Mateo-3

Thank you for your comment. As described in the Initial Study, Caltrans will implement avoidance and minimization measures before and during construction. These will include, but would not be limited to, work window restrictions, appropriate fencing, biological monitors, and on-site restoration. Caltrans may also work with local organizations to minimize project-related impacts. Caltrans is in the process of securing permitting for this project and will continue to coordinate with USFWS and San Mateo County to avoid and minimize temporary and permanent impacts to sensitive habitats and species.

In addition, Table 2-7 in Section 2.13 has been revised to address the SMLCP policies cited in this comment.

Comment County of San Mateo-4

Public Works Component

LCP Policy 2.50 Improvements for Bicycle and Pedestrian Trails states:

- (d) Require, at a minimum, and consistent with AB 1396, that CalTrans protect and make available adequate right-of-way to allow the future development of bicycle and pedestrian trails in accordance with the policies of the Recreation and Visitor-Servicing Facilities and Shoreline Access Components and the San Mateo County Comprehensive Bike Route Plan (CCAG) and the California Coastal Trail (CCT) Plan.
- (e) Through coordination with CalTrans, promote the development of a continuous Midcoast pedestrian/bicycle/multi-purpose path (or a system of single mode paths) parallel to Highway 1 as part of the overall CCT system.
- (h) Ensure that no roadway repair or maintenance project blocks or damages any existing or formally planned public trail segment or, if such an impact is not avoidable, that an equal or better trail connection is provided in conjunction with that repair and maintenance project either directly by CalTrans or through CalTrans' funding to a third party.

The IS/MND states:

- SR 1 within the project limits is used as a primary access road to San Mateo County coastal areas, including state beaches, and the section of SR 1 is part of the Pacific Coast Bicycle Route and sections of the California Coastal Trail run adjacent to SR 1 within the project limits (p.2-45).
- Pedestrian access is limited within the project limits and during construction, access to the roadway for cyclists would be maintained; after construction, bicycle access would be returned to its existing condition (p.1-17).
- The project would not conflict with circulation system, public transit, bicycle, or pedestrian facilities, nor would it affect access to recreational trails in or near the project area, such as the California Coastal Trail (p.2.58).
- The project would not increase hazards, because the existing geometric design of the roadway would not be altered (p.2-59).

As part of the permit process, it will be necessary for Caltrans to demonstrate consistency with LCP and that the proposed project will not preclude the implementation of the 2021 C/CAG Countywide Comprehensive Bicycle and Pedestrian Plan, the 2021 Unincorporated San Mateo County Active Transportation Plan, the San Mateo County Comprehensive Transportation Management Plan (Connect the Coastside), and Caltrans District 4 Bicycle and Pedestrian Plans.

The County will seek to confirm that:

- The project will not preclude and considers planned ADA accessible pedestrian crossings of SR 1 (for example, at Location 9, Gray Whale Cove). The project should allow for adequate clearance for crossings and related infrastructure, including ramps, warning signage, and/or addition of flashing beacons.

- The project will not preclude and considers planned Class 2 Bike Lanes on SR 1, including additional space that may be necessary to provide bike lanes due to the addition of a vertical barrier.
- The project will accommodate pedestrians walking along SR 1 in the project area after construction. SR 1 serves as the primary walking route for coastal access, and sections of the California Coastal Trail are envisioned to be in Caltrans right of way. Barrier placement and accompanying ongoing vegetation management should consider how pedestrians will travel alongside locations of barriers in either build alternative.

Response to Comment County of San Mateo-4

The project would install safety barriers at select locations within the project limits to improve the safety of the traveling public. Implementation of the proposed project would not interfere with any existing or proposed bicycle or pedestrian facilities. The proposed project would not result in a narrowing of existing shoulder widths within the project limits, nor would the project preclude future implementation of bicycle and pedestrian improvements; including planned improvements at the Gray Whale Cove State Beach parking lot. After construction, bicycle and pedestrian access would be returned to its existing condition. Caltrans will continue to coordinate with stakeholders throughout the detailed design phase to ensure that no conflicts take place. Caltrans will explore options to improve shoulder width where feasible and where such widening would not impact sensitive resources.

Comment County of San Mateo-5

Agriculture Component

LCP Policies 5.1 and 5.2 define and designate Prime Agricultural Lands and LCP Policies 5.3 and 5.4 designate and define Lands Suitable for Agriculture; parcels containing either are designated as Agriculture on the LCP Land Use Plan Map. The project area does not contain prime agricultural land, but does contain lands suitable for agriculture. Build Alternative 2 could be considered roadway expansion, which could be considered a conversion of lands suitable for agriculture and should be consistent applicable policies.

Response to Comment County of San Mateo-5

As stated in Section 2.4, the project would be constructed entirely within Caltrans' right-of-way. There is no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance within the project footprint, nor is there any land zoned for agricultural uses. Undeveloped lands within Caltrans' right-of-way are not suitable for agriculture. Therefore, implementation of the proposed project would not result in the conversion of agricultural land.

As described in Section 1.4.5, the PDT has selected Build Alternative 1 as the preferred alternative. Therefore, shoulder widening is no longer under consideration.

Comment County of San Mateo-6

Hazards Component

Build Alternative 2 proposes widening existing shoulders to a minimum of 5 feet in some locations, using soldier pile retaining walls from 5 feet to 20 feet high in some locations (IS/MND Sec.1.4.3 Build Alternative 2, p.1-13).

LCP Policy 1.2 Definition of Development includes on land, the placement or erection of any solid material or structure, including but not limited to roads. The LCP limits the use of shoreline protective structures to protect existing development, public beaches in danger of erosion, and when non-structural methods are infeasible or impracticable (LCP Policy 9.12(a)) Limiting Protective Shoreline Structures). Shoreline protective devices can be used when alternatives are not feasible (LCP Policy 9.12(b)). Retaining walls such as those proposed by Build Alternative 2 could be considered bluff protection work; LCP Policy 9.8(b) regulates development on coastal bluff tops and prohibits new structures that would require the need for bluff protection work.

These policies would seem to prohibit Build Alternative 2, as the newly widened shoulders would require retaining walls. Further, Build Alternative 1 which does not include retaining walls demonstrates that the project's objectives can be achieved without these impacts.

However, if Build Alternative 2 is retained, the IS/MND should address the potential impact the Build Alternative 2 soldier pile retaining walls could have on reducing shoreline sand supply, thereby impacting the recreational and habitat beach area.

Response to Comment County of San Mateo-6

Thank you for your comment. As described in Section 1.4.5, the PDT has selected Build Alternative 1 as the preferred alternative. Therefore, retaining walls are no longer under consideration.

Comment County of San Mateo-7

Visual Resources

The LCP includes policies to protect coastal visual resources, including but not limited to:

- Prohibits development on bluff faces except erosion control structures which are in conformity with coastal policies on access and erosion. (Policy 8.4 Cliffs and Bluffs)
- Prevent development, including structures, fences, and signs, from substantially blocking views to or along the shoreline from coastal roads. (Policy 8.15 Coastal Views)

Further, LCP Policy 8.30(b) designates SR 1 north of Half Moon Bay as a County Scenic Corridor; therefore, LCP Policy 8.31 Regulation of Scenic Corridors in Rural Areas applies to the project, which

includes application of policies of the Scenic Road Element of the County General Plan, rural design policies of the LCP, and section 6325.1 of the Resource Management Zoning District as specific regulations protecting scenic corridors in the Coastal Zone.

The project proposes replacing nonstandard metal-beam guard rail (MBGR) and K-rail with three potential barrier types: Midwest Guardrail System (MGS), Concrete Barrier (CB) Type 85, and Type ST-75 (p.1-3 to 1-4). IS/MND Section 2.3 Aesthetics includes visual simulations of the various options at key points (p.2-3 to 2-16), and states that "MGS would not block existing views…These new segments of safety barrier would be taller and visually bulkier than the existing MBGR. However, open, see-through type barriers would be constructed to maintain scenic views to the ocean beyond" (p.2-16). The IS/MND does not presently address the impact that Build Alternative 2 would have on public views from the beach below SR 1 and should include this assessment, if Build Alternative 2 is retained.

As part of the permit process, Caltrans will need to demonstrate consistency with the LCP's visual resources policies and employ barriers that are least impactful to coastal views wherever possible, while meeting the Project's safety objectives. In preliminary review, the County believes MGS would be preferred, with Build Alternative 1 having fewer impacts.

Response to Comment County of San Mateo-7

As described in the responses to Comments CCC-5 and CCC-6, revisions have been made to Table 2-7 in Section 2.13 to directly address the cited Visual Resources policies of the SMLCP. Additionally, the description of San Mateo County General Plan Policies in Section 2.13 was expanded to address policies on scenic roads and corridors.

As described in Section 1.4.5, the PDT has selected Build Alternative 1 as the preferred alternative. Therefore, retaining walls are no longer under consideration. Build Alternative 1 does not include retaining walls, and would therefore be consistent with the SMLCP's policies on bluff face development. This would also serve to protect existing views towards the bluffs from the beaches below the project area. The County's recommendations on barrier types have been noted. Caltrans will continue to coordinate with San Mateo County and CCC during the detailed design phase on final design of the proposed barriers.

Comment County of San Mateo-8

Climate Change and Adaptation

The IS/MND states, "Caltrans determined that the project is not in an area subject to sea level rise at the conservatively estimated highest potential sea level increase to end of century" (p.2-83) using

the National Oceanic and Atmospheric Administration (NOAA) Sea Level Rise viewer and the Point Blue's Our Coast Our Future viewer.

However, the Our Coast Our Future viewer shows that areas of the project are potentially subject to cliff retreat at 4.9 feet of sea level rise. The San Mateo County Sea Level Rise Vulnerability Assessment also shows segments of the project within an area of future erosion. As higher sea levels will lead to greater erosion, which could in turn cause landslides and loss of structural and geological stability (see the County of San Mateo Sea Level Rise Vulnerability Assessment). The IS/MND should address this in Section 2.24 Climate Change, Section 2.9 Geology and Soils, and any other relevant sections.

Response to Comment County of San Mateo-8

The County's recommendations on cliff retreat analysis have been noted. Sections 2.9 and 2.24.7 has been updated to discuss cliff retreat as it relates to the project.

Comment County of San Mateo-9

Avoidance and Minimization Measures

The County appreciates the Avoidance and Minimization Measures (AMMs) identified by Caltrans that would be employed as part of this project. The County will work with Caltrans to identify additional and/or modify measures as needed, per the discussion above.

We appreciate the opportunity to comment and to continue to work with Caltrans on this project through the CDP process.

Response to Comment County of San Mateo-9

Thank you for your comment. Caltrans will continue to work with all applicable agencies on the implementation of the avoidance and minimization measures described in the Initial Study.

3.2.1.4 Susan Curran

Comment Susan Curran-1

I live in Montara, and my home directly overlooks SR-1 from the NW end of Montara to Montara Mountain. Working from home with this view give me particularly valuable insight into what is causing the safety issues along this stretch of the highway. I agree that replacing the existing metal-beam guardrails with standard Midwest Guardrail Systems is necessary. Replacing and concrete barriers that are running right on the lane lines is very important (as people tend to take their half out of the middle when driving next to these for some reason…And concrete barriers block visibility for small cars). Retaining walls and signage upgrades – all good. But there are a couple of issues that don't seem to be overed on the notice I received, which I received after the call or I would have joined – they may have been discussed on the call so my apologies if they were:

Response to Comment Susan Curran-1

This comment contains introductory statements; no response is required.

Comment Susan Curran-2

There does not seem to be any enforcement of the speed limits posted on this stretch of highway. Every day, I see/hear vehicles excessively speeding up and down that stretch of road. Cars, motorcycles, etc. And I mean speeding – 100 MPH, no exaggeration. I have also had vehicles pass me over the double solid lines along there on multiple occasions, as well as aggressively tailgating me and others who are driving safely. This is a huge problem that contributes to the accidents there. I know the Sherriff's office post deputies at either side of the tunnel on weekends, but this goes on every day…

Response to Comment Susan Curran-2

Thank you for your comment. Responses are only provided to comments that are related to the adequacy of the IS/ND for addressing environmental effects associated with the proposed project.

Comment Susan Curran-3

There also does not seem to be any enforcement of people parking in no parking areas, or along the highway with their cars protruding into the road. I have personally seen this also cause accidents – people clipping cars protruding into the road, people easing out of their roadside parking space into fast-moving traffic causing swerving and horn-blaring. There are designated parking areas along this corridor, and that should be the only place people should be allowed to park. Traffic has gotten beyond horrible, and the ability of emergency vehicles to get through (and residents to evacuate, if ever needed) is extremely obstructed by people parking EVERYWHERE.

Response to Comment Susan Curran-3

Thank you for your comment. Responses are only provided to comments that are related to the adequacy of the IS/ND for addressing environmental effects associated with the proposed project.

3.2.1.5 dfkdrk@gmail.com

Comment dfkdrk@gmail.com-1

Please thank the group for their organized, informed presentation.

Response to Comment dfkdrk@gmail.com-1

Thank you for your comment.

Comment dfkdrk@gmail.com-2

The number of accidents over those cliffs and roadways over the last few years has been awful. Relieved that something concrete (ha) is being done about it. Alternative B looks really useful and thoughtful: some stretches are incredibly narrow and dangerous, especially given there are more and more bikers along the way; glad that the visual aspects will be integrated into the landscape/don't change the landscape, also the integration of see-through barriers, given the beauty of the coast; and the majority of the money for B is already available.

Response to Comment dfkdrk@gmail.com-2

Thank you for your comment. Responses are only provided to comments that are related to the adequacy of the IS/ND for addressing environmental effects associated with the proposed project. As described in Section 1.4.5, the PDT has selected Build Alternative 1 as the preferred alternative.

Comment dfkdrk@gmail.com-3

Hoping a HMB Review reporter attended so they can let the Coastside know now about the public comment period, or perhaps you all can reach out with bullet points about the 2 alternatives and comment period. Otherwise, you'll get residents with knee-jerk responses and frustration down the line, rather than that the team across multiple agencies has thoughtfully considered many aspects that are important to residents (e.g., beauty/virtually no change in landscape, attractive from the beach/stained piling, costs, traffic during construction etc). Coastside residents (i.e., residents who live south of the tunnel, not Pacifica) are going to be pretty surprised to hear about this, despite apparent sign-off/heads up to MCC and other HMB groups in September. In a given week, almost all Coastside residents as far down as HMB use both roadways to get 'over the hill', i.e., north through the tunnel and over 92 from HMB.

Response to Comment dfkdrk@gmail.com-3

Thank you for your comment. Responses are only provided to comments that are related to the adequacy of the IS/ND for addressing environmental effects associated with the proposed project.

Comment dfkdrk@gmail.com-4

Go Alternative B!

Response to Comment dfkdrk@gmail.com-4

Thank you for your comment. Your preference has been noted. As described in Section 1.4.5, the PDT has selected Build Alternative 1 as the preferred alternative.

3.2.1.6 Jim Sullivan

Comment Jim Sullivan-1

Please eliminate all K rail locations on this project.

The K Rail does not allow for a safer highway crossing by wildlife.

The K rail blocks animals from ranging between fields-open spaces in search for food.

The MGS gives wildlife a better chance of surviving in that they can slip under the rail and out of harms way.

The K rail does not allow for animals to slip through by blocking their crossing. K rails double their chances of being maimed or killed by motor vehicles.

Response to Comment Jim Sullivan-1

As described in Chapter 1 of the Initial Study, implementation of the proposed project would remove existing K-rail within the project limits. Other than during the construction phase during which temporary K-rail may be required to protect construction workers and the travelling public, no new permanent K-rail would be installed with either of the two proposed Build Alternatives.

3.2.1.7 Natalie Drees

Comment Natalie Drees-1

Thank you for your work on this project. I was just wondering if this project could correspond with improved bike lanes on this section of the highway.

Response to Comment Natalie Drees-1

As described in Chapter 1 of the Initial Study, project alternatives are limited to the construction of safety barriers along SR 1 within the project limits. The project alternatives would not change existing bicycle access along SR 1 within the project limits.

3.2.1.8 Shelly Smith

Comment Shelly Smith-1

I was unable to attend the public meeting regarding SMC Route 1 safety barrier project and would like to add few comments below.

Response to Comment Shelly Smith-1

This comment contains introductory statements; no response is required.

Comment Shelly Smith-2

Please install the least visible barriers possible, defaulting to least concrete/material that is deemed to provide needed safety.

Response to Comment Shelly Smith-2

Thank you for your comment. Your preference has been noted. As described in Section 1.4.5, the PDT has selected Build Alternative 1 as the preferred alternative. This alternative includes the installation of steel or concrete barriers, depending on location. All barriers proposed would be open, see-through type barriers to maintain existing scenic views.

Comment Shelly Smith-3

When concrete barrier is needed (as opposed to wood and metal barrier), please again go with less is more approach and select the horizontal lined design and not the broad concrete surface to minimize Taggers.

Taggers quickly put graffiti on any broad (and especially white) surfaces on this stretch of highway. There was a temporary wooden sign to bring attention to recent deaths along coast (I assume illegally placed) and even with words on it, it only took a few days before the taggers used it. There will not be enough funds and personnel to be constantly painting over graffiti so please do not pick the designs that have large surfaces for them to tag.

Response to Comment Shelly Smith-3

Thank you for your comment. Responses are only provided to comments that are related to the adequacy of the IS/ND for addressing environmental effects associated with the proposed project.

Comment Shelly Smith-4

It seems to me that the stretch north of Gray Whale to the road to tunnel maintenance area just south of tunnel wall does not need to have barriers on each side. This seems like it would make it less safe given there are bicyclist. It would be hard to widen that stretch given the hillsides on both sides of road at that point and it seems that adding barriers to hem in traffic more would make it more dangerous.

Response to Comment Shelly Smith-4

The locations proposed for the construction of barriers were selected by the Caltrans Office of Traffic Safety. The Locations 10 and 11 are outside the footprint of the hillsides on both sides of the roadway. Barriers are proposed at these locations to prevent run-off-the-road accidents along the steep slopes on both sides of the roadway at these locations.

3.2.1.9 Ron Little

Comment Ron Little-1

I'm on the board of directors for the Coastside Running Club and am an avid runner, living in Montara. I'm against this project as it stands because for all of the disruption (14 months of one-way traffic control), the benefit seems marginal and there doesn't seem to be any improvement for pedestrians.

Response to Comment Ron Little-1

Thank you for your comment. Responses are only provided to comments that are related to the adequacy of the IS/ND for addressing environmental effects associated with the proposed project.

It should be noted that while construction of the proposed project could encompass a total of 14 months (depending on alternative), construction activities would be limited to one to two locations at a time within the project limits and only for the length of time necessary to construct a barrier at the specific location. It is anticipated that the implementation of Build Alternative 1 would require one construction season (approximately 55 working days) and the implementation of Build Alternative 2 would require two construction seasons (approximately 230 working days). One-way reverse traffic control would only be in place during working hours.

Comment Ron Little-2

I wish Caltrans would use this opportunity to also address the needs of pedestrians in this area: a) Have a safe way of crossing Hwy 1 at Gray Whale Cove. b) Have a safe way of walking from Gray Whale Cove to Devil's Slide. It appears from the mock-up in the planning document (Figure 2-6 in Locations 10 and 11) that there won't be enough room to walk on the outside of the guardrail. A wonderful alternative would be to move forward with the stalled Green Valley Trail project that might go through Caltrans land in Montara. c) Have a safe way of crossing Hwy 1 in Moss Beach. There's a flashing pedestrian sign, but cars often ignore it or don't see it until it's too late.

Response to Comment Ron Little-2

As described in Section 1.2, the purpose of the project is to enhance traffic safety by reducing run-off-the-road accidents from errant vehicles within the project limits. During final design, Caltrans will coordinate with San Mateo County to ensure improvements are consistent with the Gray Whale Cove Pedestrian Access Improvement Project. Providing pedestrian access from Gray Whale Cove to the Devil's Slide tunnel and improving the Green Valley Trail are outside the scope of the project. In addition, the community of Moss Beach is south of the project limits.

Comment Ron Little-3

If this project does move forward, I favor Alternative 2, as this would provide more shoulder for pedestrians and bicyclists.

Response to Comment Ron Little-3

Thank you for your comment. Your preference has been noted. As described in Section 1.4.5, the PDT has selected Build Alternative 1 as the preferred alternative.

3.2.1.10 Erika Moncada

Comment Erika Moncada-1

I am completely in favor of a safety barrier too many lives have been lost on Hwy 1 already to not have something that is more safe on the road.

Not only is a safety barrier needed but ENFORCEMENT of the no parking signs all along the road every single weekend loads of people ignore them and CHP does nothing, they drive right by them... the people parked along the no parking areas cause accidents every weekend, illegal entry into the highway illegal left turns all sorts of issues

Response to Comment Erika Moncada-1

Thank you for your comment. Responses are only provided to comments that are related to the adequacy of the IS/ND for addressing environmental effects associated with the proposed project.

3.2.1.11 Christopher Church

Comment Christopher Church-1

The project as a whole does not appear to consider the cumulative impacts of the tunnel with the new project, yet those of us who especially enjoyed the views of the scenic route before the tunnel now find even more barriers to the view being proposed without adequate presentation of alternatives being introduced for consideration and more comprehensive study of the project undertaken than shown in the proposed Negative Declaration. Is it possible to consider solutions that allow a much better view yet offer comparable safety?

Response to Comment Christopher Church-1

The Visual Impact Assessment (Caltrans 2021a) completed for the project considered cumulative impacts in compliance with FHWA requirements. As described in Section 2.3 of the Initial Study, while the proposed safety barrier would be taller and visually bulkier than the existing barriers, open, see-through type barriers would be constructed to maintain scenic views to the ocean beyond. Due to their limited quantity and scale,

along with their “see-through” design that maintains views of the ocean and the surrounding landscape, they would not fundamentally alter the scenic character or quality. Impacts would be less than significant.

As described in Section 1.2, run-off-the-road accidents are more common within the project limits for three reasons: edge of pavement condition, steep drop offs, and lack of permanent barriers. Some portions of the roadway have little to no shoulder backing (a slight slope) along the edge of the pavement. These sections of roadway instead have a non-tapered edge, which can be more difficult to recover from if vehicle tires come into contact with the edge of the pavement. In addition, many places along the southbound side of SM 1 within the project limits have a steep drop off to the ocean below the roadway. Due to the existing topography and roadway conditions within the project limits, physical barriers would be the most effective alternative to prevent run-off-the-road accidents.

Comment Christopher Church-2

Historic resources in the form of very fine WPA stonemasonry retaining walls do not appear to be taken into consideration. Are they to be undisturbed?

Response to Comment Christopher Church-2

As described in Section 1.4 of the Initial Study, the existing parapet walls at location 3 and location 6 would be removed with implementation of the proposed project. However, the District 4 Office of Cultural Resource Studies determined that the existing parapet walls at these locations are not historic resources. As summarized in Section 2.7, there are no historic properties within the project APE.

3.2.1.12 Daniel Moss

Comment Daniel Moss-1

Please get this barrier built. We have been promised by various CalTrans members since my son Richard died on this roadway by crashing into the ocean. His body and vehicle were never recovered even though we did our own private search with our own recourses. We even flew out an expert in retrieving bodies from the water, with no luck. Rose’s vehicle, which exited the highway at the same spot as Richard’s was never found either, although her body was recovered.

We do appreciate CalTrans putting up K Rails in the area of Richard’s and Rose’s death.

Response to Comment Daniel Moss-1

Thank you for your comment. Responses are only provided to comments that are related to the adequacy of the IS/ND for addressing environmental effects associated with the proposed project.

3.2.1.13 Dan Stegink

Comment Dan Stegink-1

As an Environmental Activist and retired Rescue Diver I firmly support these barricades.

I have personally led diving searches for at least nine vehicles that ejected off the cliff between Location 5 and Location 8 both Northbound and Southbound.

Victims are rarely found, and even in instances where eyewitnesses and video placed vehicles in the water at exact locations, Sheriff's Department searches have been inable to find them just 45 minutes later.

Those that exit the cliff at night do so into oblivion. The 200 ft cliff face is shear and blocks almost all light, which is minimal even on the roadbed. The water is treacherous and hosts thirty foot King Tides.

It is my understanding there are nine meters of sediment before bedrock in some places here and ten tons of sand move a night.

There may be an optical illusion for Southbound vehicles caused by crossing overhead wires at location 6 causing drivers have loss of visual horizon believing the road continues into space.

Many drivers lose cell service between North end of Lantos tunnels and location 5 at which point they receive a distracting burst of text messages.

It is my understanding that in the early 1970s Coast Guard Chinook helicopters removed tens of vehicles out of the water at this location.

I strongly suspect vehicles disappeared here regularly before cellphone coverage triangulated entry and exit points on Hwy 1 and it appeared to relatives that missing drivers heading from SF to LA simply vanished forever.

Please build this barrier. At one Emergency Services meeting that discussed this issue, a drive exited forty five minutes later.

Please build this barrier. Please use corrosion resistant materials like stainless or composite rebar as the salt spray on the road is daily.

The families of the victims unilaterally support this barrier, and yes, I speak for many, many of them. Everyone on the Coast knows someone who has died here.

Response to Comment Dan Stegink-1

Thank you for your comment. Responses are only provided to comments that are related to the adequacy of the IS/ND for addressing environmental effects associated with the proposed project.

3.2.1.14 Jan Michaels

Comment Jan Michaels-1

Regarding the post card about the San Mateo State Route (SR) 1 Safety Barrier Project I wanted to state that it could be good for general safety but perhaps the road needs to be widened for bicycle safety and general driving.

Response to Comment Jan Michaels-1

Thank you for your comment. Responses are only provided to comments that are related to the adequacy of the IS/ND for addressing environmental effects associated with the proposed project.

Comment Jan Michaels-2

I have lived on the Coast for 35 years in the little town of Montara and love looking out to the beautiful Pacific Ocean as I wind around the Hwy 1 road.

Some people drive too fast for the curves on the road and even sometimes I am guilty of taking the curves quickly because I know the road so well. But people going over the edge!!! It does happen, and people even park and walk up where there are warning signs to not stand or climb there? And they slip and fall over…

Response to Comment Jan Michaels-2

Thank you for your comment. Responses are only provided to comments that are related to the adequacy of the IS/ND for addressing environmental effects associated with the proposed project.

Comment Jan Michaels-3

I understand there will be some deaths of people going over the edge but I don't think to put a gigantic barrier up really protects them. In the past it was a popular road to just dump cars over (maybe the car was a lemon or not worth fixing) to get rid of them. The amount of visitors to the Coast is increasing and maybe that is the reason more people are doing unsafe driving. These iconic views are worth far more to people than to have a bigger than life barrier. Look at the Amalfi Coast in Italy where there is a beautiful stone wall where it enhances the look and the dangerous road is stunningly beautiful and glorious views are appreciated.

Response to Comment Jan Michaels-3

Thank you for your comment. Responses are only provided to comments that are related to the adequacy of the IS/ND for addressing environmental effects associated with the proposed project.

Comment Jan Michaels-4

> What about shuttle busses like we have at Yosemite Park and people can just hop on and off? The bumper to bumper traffic could be cut back and people could enjoy the view and be safe in a public shuttle. They could go and enjoy the beach and not have to worry about parking or getting impatient in the parade of cars.
>
> Many years ago a train was available…If there were enough shuttle times it would be a great solution. Maybe small shuttle buses would be more attainable when the weekends are hugely busy. One issue is the better weather days with lots of sun will be more busy than cloudy foggy days.

Response to Comment Jan Michaels-4

Thank you for your comment. Responses are only provided to comments that are related to the adequacy of the IS/ND for addressing environmental effects associated with the proposed project.

Comment Jan Michaels-5

> Maybe it comes down to beauty for me so the barrier look is important. Right now large piles of soil are not very beautiful and the mounds perhaps add to the ease of going over the edge. But a barrier could cause bad injuries. Certain upgrades in the past have proved valuable to the road and safety so please provide illustrations like before and after ideas of what you are planning.

Response to Comment Jan Michaels-5

Section 2.3 of the Initial Study provides visual simulations depicting changes with the proposed project at areas that would most clearly demonstrate the potential change in the visual resources within the project limits. As described in the Section, while these new segments of safety barrier would be taller and visually bulkier than the existing barriers, open, see-through type barriers would be constructed to maintain scenic views to the ocean beyond. Due to their limited quantity and scale, along with their "see-through" design that maintains views of the ocean and the surrounding landscape, they would not fundamentally alter the scenic character or quality. Impacts would be less than significant.

3.2.1.15 Jennifer Otter

Comment Jennifer Otter-1

I'm a Montara property owner and recently received a notice in the mail about SR 1. I didn't get the notice in time for the meeting on January 27th, but I am very interested in this project if it will improve safety along the very dangerous cliffside stretch of Highway 1 in Montara.

When we moved there, a young man had recently died after his car crashed into the ocean. This could have been prevented if there was a barrier along the cliff. There were a number of other incidents, including deaths, along this same stretch since we purchased our property in 2017.

My husband and I used to commute to work along Highway 1 everyday. It was absolutely petrifying, even with the new tunnels that replaced Devil's Slide. Due to the weather conditions, darkness, rocks and other factors, it is very easy to get into an accident and veer off the cliff into the ocean, no matter how carefully you are driving.

I have a seven year old son and a new baby. It terrifies me to have to drive on Highway 1, especially on the parts that do not have a barrier. A barrier would at least give car crash victims a fighting chance to avoid a very horrific death.

If there is anything I can do to support this project, please let me know.

Response to Comment Jennifer Otter-1

Thank you for your comment. Responses are only provided to comments that are related to the adequacy of the IS/ND for addressing environmental effects associated with the proposed project.

3.2.1.16 Dan Haggerty, Midcoast Community Council Member

Comment Dan Haggerty-1

The extent of this proposed project raises many questions. As a citizen it is important to have a safe highway with sufficient guardrails at needed locations. As a taxpayer this project appears to add potentially unnecessary improvements as well. Our community has heard the story many times that other elements of needed highway safety can’t get funding. Therefore, some very clear “as needed” criteria should be applied to this project. I think this project should be re-evaluated after better explanation and robust community involvement.

Response to Comment Dan Haggerty-1

Thank you for your comment. Responses are only provided to comments that are related to the adequacy of the IS/ND for addressing environmental effects associated with the proposed project. It should be noted that as described in Chapter 1 of the IS/ND, the only improvements included in the proposed project are the installation of

safety barriers at 11 locations and the replacement of existing regulatory (white color) and warning (yellow color) signs within the project limits.

Comment Dan Haggerty-2

This project should address barrier safety in a way that is detached from the emotion of the horrifying incidents from the past and address safety in a pragmatic way that is equal to and as effective as the numerous other locations of our California scenic Highway 1.

Any new guardrails should blend with the beauty and history of the road.

The style and material of the barriers you have proposed (Type CB-85 and ST-75) harshly contrast with the natural beauty of the scenic highway that is treasured by both visitors and residents. Standard guardrails (without concrete under-pavement) or concrete barriers with a precast faux stone surface (similar to the 2013 barriers on the west side at the Lantos Tunnel south portal) would be more appropriate, in my opinion.

Some locations (10 and 11 for example) partially appear to be unnecessary based on your photos, but your diagram adds confusion with what is truly being proposed. Barriers can have unintended consequences and should not be installed unless there is a clear need. What are the California and Federal criteria that warrant a highway guardrail? Why is it proposed to remove and replace all existing guardrails of which many appear to be in reasonable condition? The guardrail across from Gray Whale Cove parking lot was installed approximately 15 years ago and does not appear to be in an area of exceptional concern. At many locations there are existing stone wall barriers. Can these be reinforced with steel, shotcrete, and a stone finish?

Response to Comment Dan Haggerty-2

As described in Section 1.2, the project is needed to address the high rate of run-off-the-road accidents on SR 1 within the project limits, especially the portions of southbound SR 1 where there is little to no shoulder backing with a steep drop-off to the oceanside below. There are some portions of the project limits that do not have any safety barriers, and other portions where existing barriers are nonstandard. The justification for the project is that it will reduce the number and severity of run-off-the-road accidents within the project limits.

Proposed barriers and barrier placement have been designed in accordance with Caltrans design guidelines, standards, drawings, and policies; applicable FHWA legislation, regulations, and guidance; and American Association of State Highway and Transportation Officials (AASHTO) guidance.

Build Alternative 1 (the preferred alternative) would replace all existing nonstandard metal beam guardrail (MBGR) with new MGS at 10 locations within the project limits,

and install new safety barriers (either concrete barrier Type 85 [see-through barriers] or California ST-75 [see-through barriers]) at two locations (one of which [location 6] also includes the construction of MGS). Build Alternative 1 would not involve any shoulder widening.

There are two locations within the projects limits (location 3 and location 6) where existing parapet walls would be removed and replaced with either CB Type 85 or ST-75 barriers. The existing parapet walls do not meet current design standards (including height, ability to survive impact conditions, and design to redirect vehicles back onto the roadway) and it would not be feasible to upgrade them.

As described in Section 2.3, new segments of safety barrier would feature open, see-through designs to maintain scenic views to the ocean beyond. Due to their limited quantity and scale, along with their “see-through” design that maintains views of the ocean and the surrounding landscape, the proposed safety barriers would not fundamentally alter the scenic character or quality of the project area.

Appendix D describes avoidance and minimization measures that will be implemented as part of the proposed project to minimize impact to visual resources. These measures include the use of open, see-through type barriers to maintain views to scenic vistas beyond; use of a matte finish on exposed metal to reduce glare; and potential inclusion of context-sensitive color and/or texture surface treatments to aid in visual blending. In addition, new guardrails shall be terminated at buried end sections where feasible and inline end treatments shall be used where buried end sections are not feasible.

Comment Dan Haggerty-3

> Please stop using the Midwest Guardrail System that utilizes a concrete under-pavement. Cal Trans should be aware that there is a global shortage of sand needed for concrete. It is irresponsible to use concrete for a purpose that is not mandatory, in my opinion. In addition, the uncolored concrete adversely contrasts with the natural surroundings.

Response to Comment Dan Haggerty-3

Build Alternative 1 (the Preferred Alternative) does not include shoulder widening. At locations proposed for MGS, no additional roadway paving would be required other than minor concrete paving under MGS for vegetation control.

3.2.1.17 Gregg Dieguez, Midcoast Community Council Vice Chair

Comment Gregg Dieguez-1

I'm the Vice Chair of the MidCoast Community Council, writing as an individual. Given current schedules, the MCC will not be able to agendize the topics below in a regular meeting until May 11th at the earliest, and due to the Brown Act I cannot consult with all my colleagues for a consolidated reply until then. It can also take several meetings for the Council to agree on the contents of a letter, so rather than miss the opportunity to provide input to what I view as important issues before designs are finalized, I offer the following thoughts on both the content and flaws in the planning and communication process to reflect what I know of the sentiment of the community, and my own.

Response to Comment Gregg Dieguez-1

This comment contains introductory statements relating to Mr. Dieguez's comments. No response is required.

Comment Gregg Dieguez-2

This email was initially intented to provide comments based on the Caltrans Multi-asset roadway presentation (0Q130 - SM 1 Multi-Asset Roadway Rehab) and discussion at the meeting of March 28, 2022. It also contains comments related to the suicide barrier project (0Q610 - SM 1 Safety Barrier Project), and the Moss Beach Corridor. I am now discovering that these comments are in some cases: a) late and b) misplaced regarding the specifics of the project boundaries under which some of you work, and that there are more efforts underway not included in those projects. I will not attempt to revisit whom at the MCC was and wasn't notified about what project using what email subject line that seems to have caused the MCC to miss a comment deadline on an important project. The reality is that all of you are intelligent, full-salaried, full-time professionals with a job focus, and we are a group of unpaid, part-time, officials on a 2 year election rotation, with no full-time staff to help us research and manage a stream of issues ranging from water and wildfire to sustainability and traffic. Further, there are at least these bodies with whom we have worked (often with success) on various Hwy 1 projects our area: Caltrans, County DPW, County Planning, City of Half Moon Bay, County School Districts, County Board of Supervisors, and more I probably don't know about.

We, the MCC and Midcoast residents, possibly including HMB, need a more integrated communication and status reporting/planning system than we currently have for transportation projects. I will explore the concept of an MCC standing committee so that we can hopefully provide feedback more rapidly than the Brown act and our bi-monthly agenda schedule allow. But I will not be here as long as most of you in your jobs, and we need a more robust vehicle for identifying, managing, communicating and tracking so that when I'm gone, my successors and our residents can still see and understand what is being considered, and done. Without such improvements,

important considerations on traffic system design will not be surfaced in time to prevent controversy and mistakes.

It's only about 15 miles of road, but it is our ONLY evacuation and transit route, and the basis for a disproportionate amount of visitor interest and traffic volume. There has to be a way we can be on top of what is, and isn't, being done in our area and ensure that the priorities described below are factored into someone's project definition.

While resurfacing the roadway, improving drainage/culverts, and adding bike lanes are nice improvements, the multi-asset project is missing several improvements which I believe are much more important to the basic safety and efficiency of traffic/pedestrian flow in our area. I hope CalTrans and San Mateo County can adjust the scope of their efforts across whatever projects are involved to address these items while working on projects in the MidCoast.

Response to Comment Gregg Dieguez-2

As described in Section 3.1 of the IS/ND, coordination with the stakeholders has been on-going. Efforts to date have included a Caltrans-hosted preliminary stakeholder outreach meeting on September 23, 2021 with representatives from the CCC, San Mateo County, the City of Half Moon Bay, Midcoast Community Council, and the Half Moon Bay Coastside Chamber of Commerce.

As described in Section 3.2 of the IS/ND, public input on the project was solicited during the review period for the Initial Study/Proposed Mitigated Negative Declaration, which lasted from January 12, 2022 to February 11, 2022. The public was notified of the availability of the Initial Study/Proposed Mitigated Negative Declaration by a number of methods, including postings on the Caltrans website, local newspapers (the San Mateo Daily Journal), and an emailed announcement to interested agencies and individuals.

In addition, postcards were mailed to all residences living near the project limits in zip codes 94038 (Moss Beach), 94037 (Montara), and 94044 (Pedro Point). The postcards included an overview of the proposed project (including the project limits); the purpose of the project; locations where the Initial Study/Proposed Mitigated Negative Declaration could be reviewed; and an announcement of how to attend the January 27, 2022 online public meeting.

Chapter 5 of the IS/ND includes a list of agencies, organizations, and individuals that received printed or electronic copies of the document. This list includes elected officials (federal, state, and local [including the mayors and council members of Pacifica and Half Moon Bay]); as well as federal, state, and local agencies (including the Chair of Midcoast Community Council).

Caltrans welcomes the opportunity to improve communications among all interested parties and stakeholders and will continue to work with them throughout the design and construction phases for the project.

Is should also be noted that the proposed project does not include roadway resurfacing, drainage or culvert improvements, or the addition of bicycle lanes.

Comment Gregg Dieguez-3

A. Middle lane in Moss Beach. A major improvement in both safety and throughput would be the addition of a middle turn/acceleration lane in Moss Beach, near where the recent pedestrian flashing light was installed. In recent years accidents have included cars being OVERTURNED in collisions, resulting in closure of Hwy 1. Overturning a car is tough to do on a straight, dry, flat stretch of road, but the dominant traffic on Hwy 1 makes cars trying to enter desperate for any opening, and causes them to accelerate rapidly to merge onto the highway, and that can surprise drivers on Hwy 1. In Montara, there is a middle lane which works well. The request is to extend a Caltrans project to include installation of a similar middle lane in Moss Beach.

And speaking of Moss Beach, the flashing beacon recently installed at the crosswalk is blocked by… an extra sign telling you there's a crosswalk. Either the extra sign should be removed as redundant (there's also a sign on the beacon pole), or flashing lights need to be added higher on the existing pole.

Response to Comment Gregg Dieguez-3

Thank you for your comment. Responses are only provided to comments that are related to the adequacy of the IS/ND for addressing environmental effects associated with the proposed project. Your concerns regarding potential safety issues in Moss Beach have been forwarded to the appropriate Divisions within Caltrans.

Comment Gregg Dieguez-4

B. Surfer's Beach mid-block crossing. Currently, surfers parking in the open space or on the roadway across from the beach are supposed to carry their surfboards, barefoot, to the nearest crossing. The hike there, across Hwy 1 and back is ~2,100 feet (.4 miles) each way. Surfers do not do this, either when going to the beach or when, wet and tired, they would have to repeat this hike to return to their cars. As a result, traffic is routinely interrupted in both directions, often suddenly and to the surprise of following drivers when these pedestrians - which often include children - attempt to cross. I have noticed numerous near- miss rear-end collisions at this location, often several car-lengths removed from the person crossing. Some form of push-button crossing high-and-low-mounted flashing beacon, with a time delay sufficient to prevent continuous interruption of traffic, would improve the predictability and safety of crossing. Even if CalTrans installs a cappuccino stall at

the nearest existing intersection, surfers are not going to walk that far to cross, in part because they don't carry money.

Response to Comment Gregg Dieguez-4

Thank you for your comment. Responses are only provided to comments that are related to the adequacy of the IS/ND for addressing environmental effects associated with the proposed project. Your concerns regarding safety issues in the vicinity of Surfer's Beach have been forwarded to the appropriate Divisions within Caltrans.

Comment Gregg Dieguez-5

C. Traffic Signs (VMS) Concerns. The Caltrans multi-asset project contains what seem to be an overlapping series of traffic signs and monitoring devices, similar to what was proposed in the State Route 1 Traffic Operational Systems Improvements Project in July, 2020. In spite of the adjustments made based on prior resident feedback (fewer signs, Dark Skies concerns -signs off until needed to be turned on, etc.), these signs will still be strongly opposed by the community at large because of their size, unnatural appearance, and light emissions. However, there could be benefits from some aspects of this effort (see below). Residents will need to understand the full scope of signage proposed in all projects, from Pacifica through Half Moon Bay, and along Rte 92. (the prior project did not include Rte 92). I believe we have a mutual understanding that the VMS installations need to be BEFORE decision points where drivers can safely alter their routes, from Pacifica (north of the Lantos Tunnel, headed southbound), through Half Moon Bay (south of Rte 92, headed northbound). This project appears to piecemeal the VMS efforts by only including a subset of the entire scope, and the full environmental experience needs to be planned and agreed together. Please combine all VMS plans into a single document for community review. In addition to the esthetic and location VMS issues, it is hard to discern the marginal utility of this investment over existing Google Map and Waze cellphone applications, which can already alert drivers of impending bottlenecks.

Response to Comment Gregg Dieguez-5

Thank you for your comment. Responses are only provided to comments that are related to the adequacy of the IS/ND for addressing environmental effects associated with the proposed project. The proposed project does not include variable message signs (VMS).

Comment Gregg Dieguez-6

D. Traffic measurement data. Traffic studies on Hwy 1 and SR92 have historically suffered from point-in-time sampling bias, missing real-world influxes of visitor traffic, being years out of date, and now missing changes in activity due to the Pandemic and new work-at-home patterns. If the traffic monitoring devices can provide both real-time and AND historical traffic data captured and available for later analysis, that would be a benefit for several aspects of future planning. Can you provide

specs on what data will be captured, how long it will be retained, and how it can be made available to the community and planners for review and analysis? A commitment to warehouse and share this historical data would be useful in engendering community support. Without that byproduct benefit, as stated above, the VMS effort has less value.

Response to Comment Gregg Dieguez-6

Thank you for your comment. Responses are only provided to comments that are related to the adequacy of the IS/ND for addressing environmental effects associated with the proposed project.

Comment Gregg Dieguez-7

E. VMS Sign at SR92 near Diggs Canyon Rd: This traffic sign is apparently in response to comments from HMB. I have not spoken to staff in HMB about their concerns, but I assume this is intended to alert drivers to backups of westbound traffic heading to the coast (accidents, including tractor trailers, cause closure of SR92). However, I am unaware of any safe decision a driver could make at Diggs Canyon Rd. upon seeing notice of a long backup. Where would they turn around safely? Instead, VMS should be installed on the westbound lane of Hwy 92 east of the hilltop where SR35 joins (near Skylawn Cemetery), and also, even further east on the westbound lane of Hwy 92 east of the traffic light near the Crystal Springs reservoir. Those signs would allow drivers to NOT progress into a traffic jam on SR92, and instead be able to choose an alternate route or destination - and to ACT on that decision before it is too late.

Response to Comment Gregg Dieguez-7

Thank you for your comment. Responses are only provided to comments that are related to the adequacy of the IS/ND for addressing environmental effects associated with the proposed project. The proposed project does not include variable message signs (VMS).

Comment Gregg Dieguez-8

G. Midwest Guardrails. While I recognize these as a Caltrans emerging standard for safety, residents oppose their appearance. They could better be called Rust Belt Rococo. Further, the Hwy 1 barrier project is proposing to line Hwy 1 from the Tunnel south to Montara with these barriers. Presumably the benefit of that project is suicide prevention, and that is a worthy goal. However, residents - who have seen what these look like in Pacifica - want to maintain a natural view and not the appearance of an “armored highway” from the tunnel down to Half Moon Bay. People want to live and visit here because of the birds and the bees, the flowers and the trees. They do not want the Condominium Chic that has taken over my former town of San Carlos, for example. It is understandable that Caltrans roadside equipment installations such as the VMS will need protection, but my request, in conjunction with a reduction in the number of VMS signs (if any), is

to: 1) reduce the guardrail length for each, as well as 2) provide a more natural look than concrete and steel. Further, I suggest that at most locations only traffic monitoring gear is needed, and the hope is that these guardrails are really only needed to protect modest-sized traffic monitoring equipment, which in some locations might even be mounted atop existing light poles or traffic signs, thus obviating the need for creation of any additional unnatural structures like these guardrails on the road. To me, this guardrail design violates the principle of Context Sensitive Solutions, which I'm told Caltrans employs.

Response to Comment Gregg Dieguez-8

The proposed project does not include the installation of VMS. As described in Section 1.2, the purpose of the project is to enhance traffic safety by reducing run-off-the-road accidents from errant vehicles within the project limits.

As described in Chapter 1, safety barriers would only be constructed at 11 discrete locations within the approximately 2-mile-long project limits. The locations and barrier lengths were selected by the Caltrans Office of Traffic Safety. While proposed barriers would range from 60 feet to 730 feet long, the majority would be less than 300 feet long. Build Alternative 1 (the Preferred Alternative) includes the construction of MGS at 10 locations and either CB Type 85 or ST 75 at 2 locations (one of which [location 6] also includes the construction of MGS).

As described in Section 2.3, new segments of safety barrier would feature open, see-through designs to maintain scenic views to the ocean beyond. Due to their limited quantity and scale, along with their “see-through” design that maintains views of the ocean and the surrounding landscape, the proposed safety barriers would not fundamentally alter the scenic character or quality of the project area.

Appendix D describes avoidance and minimization measures that will be implemented as part of the proposed project to minimize impact to visual resources. These measures include the use of open, see-through type barriers to maintain views to scenic vistas beyond; use of a matte finish on exposed metal to reduce glare; and potential inclusion of context-sensitive color and/or texture surface treatments to aid in visual blending. In addition, new guardrails shall be terminated at buried end sections where feasible and inline end treatments shall be used where buried end sections are not feasible.

Comment Gregg Dieguez-9

H. Conflict with sewer infrastructure. The sewer infrastructure for the MidCoast includes a large, pressurized series of pipes, pumps, and overflow storage called the Inter-tie Pipeline System. That pipeline is at places under Hwy 1 and in other places nearby the roadway. The SAM plant has been

flagged by San Mateo County as vulnerable (Sea level rise, tsunami, and other factors) and there is an effort beginning at SAM to re-imagine the entire sewer infrastructure Mid-Coastside. Any work done on Hwy 1 should take into account both the current sewer infrastructure, and whether any major roadway investments would complicate future efforts, or waste funds, when subsequent relocations of the sewer system or highway must occur due to these potential resilience-driven changes. Given the age of the SAM system, I expect changes and/or relocation within the next 10 to 20 years.

Response to Comment Gregg Dieguez-9

Thank you for your comment. Responses are only provided to comments that are related to the adequacy of the IS/ND for addressing environmental effects associated with the proposed project. The only utilities within Caltrans' right-of-way within the project limits are overhead telecommunication and electric lines.

Comment Gregg Dieguez-10

In summary, while current Hwy 1 projects' scope contain $43 million of work ($34m for the multi-asset upgrade and $9m for the suicide barriers), and likely more I don't have documentation on, I do not see the above significant roadway and safety issues proximate to the locations of the planned work being considered. One also has to ask whether the upgraded road will withstand the atmospheric rivers here (e.g. of Oct 25 and Dec. 13Th, 2022) and the sea level rise of coming decades – or whether a more fundamental relocation and redesign is a more prudent investment. I hope we can work together with CalTrans and the County to clarify & redefine the project(s) (and related efforts) to address the above matters, which in most cases are more important than, but related to, simply regrading the road.

Response to Comment Gregg Dieguez-10

Thank you for your comment. Responses are only provided to comments that are related to the adequacy of the IS/ND for addressing environmental effects associated with the proposed project. Please note that potential impacts related to climate change are discussed in Section 2.24 of the IS/ND.

Comment Gregg Dieguez-11

Thank you for your consideration of these comments, and the engagement and responsiveness you have previously demonstrated in our work together. Please let me know if I've left out of the distribution anyone I should have included. I hope we can hold an MCC discussion of these projects and provide additional community feedback in mid-to-late-May. Should you make any adjustments to your scope and design before then, please notify the entire Council at midcoastcommunitycouncil@gmail.com. I am also available to discuss these comments.

Response to Comment Gregg Dieguez-11

Thank you for your comment. Caltrans will continue to work with all interested parties, including Midcoast Community Council, during the design phase of the proposed project.

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Appendix A Title VI Policy Statement

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Making Conservation a California Way of Life.

September 2021

NON-DISCRIMINATION POLICY STATEMENT

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

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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; PO Box 942874, MS-79, Sacramento, CA 94274-0001; (916) 324-8379 (TTY 711); or at Title.VI@dot.ca.gov.

Toks Omishakin
Director

"Provide a safe and reliable transportation network that serves all people and respects the environment."

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Appendix B Summary of Project Features, Avoidance and Minimization Measures

Project Features

Project Feature AES-1: Construction Work Areas. 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 avoid light trespass in residential areas through directional lighting, shielding, and other measures as needed.
- All disturbed ground surfaces would be restored and treated with erosion control.

Project Feature AQ-1: 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.

Project Feature AQ-2: 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.

Project Feature BIO-1: Worker Environmental Training. Construction personnel will attend a mandatory environmental education program delivered by a qualified Caltrans

biologist prior to taking part in site construction. The program will focus on the conservation measures that are relevant to an employee's personal responsibilities and will include an explanation as how to best avoid take of California red-legged frog and San Francisco garter snake. At a minimum, the training will include a description of species; how they might be encountered within the project area; their status and protection. 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 California red-legged frog and San Francisco garter snake, compliance reminders, and relevant contact information. Documentation of the training, including sign-in sheets, will be kept on file and made available to regulatory agencies upon request.

Project Feature BIO-2: Proper Use of Erosion Control Devices. To avoid entanglement or injury of susceptible, protected biological resources, erosion control materials that use plastic or synthetic monofilament netting will not be used during the project's construction.

Project Feature BIO-3: Bird Protection Measures. To avoid take of migratory birds during the bird nesting season (February 1 to September 30): a qualified biologist(s) would conduct preconstruction nesting bird surveys no more than three days prior to construction. If an active nest is discovered, the biologists would establish an appropriate exclusion buffer around the nest. The area within the buffer would be avoided until the young are no longer dependent on the adults or the nest is no longer active. If a nesting special-status bird species is discovered, an agency approved biologist would notify the USFWS and/or CDFW for further guidance. Partially constructed and inactive nests would be removed to prevent occupation.

Project Feature BIO-4: Night Lighting. Artificial lighting during nighttime hours will be minimized to the maximum extent practicable. Lighting must be directed to illuminate the immediate work area only, while minimizing spillage into adjacent areas.

Project Feature BIO-5: Trash Control. Food and food related trash items would be secured in sealed trash containers and removed from the site at the end of each day.

Project Feature BIO-6: Pets. Pets would be prohibited from entering the project limits.

Project Feature BIO-7: Firearms. Firearms would be prohibited within the project limits except for those carried by authorized security personnel or local, state, or federal law enforcement.

Project Feature CULT-1: Stop Work Upon Discovery of Cultural Materials. If cultural materials are discovered during construction, all earth-moving activities within a sixty-foot radius would be halted until a Caltrans Professionally Qualified Staff (PQS) can assess the nature and significance of the find.

Project Feature CULT-2: Additional Actions if Cultural Materials Contain Human Remains. If Caltrans PQS determines that cultural materials contain human remains, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains. Caltrans' OCRS would contact the San Mateo County Coroner. Pursuant to PRC Section 5097.98, if the remains are thought by the coroner to be Native American, the coroner would notify the Native American Heritage Commission, which would then notify the Most Likely Descendent. OCRS would work with the Most Likely Descendent on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

Project Feature GHG-1: 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 ARB emission reduction regulations.

Project Feature HAZ-1: Unanticipated Hazardous Waste. Caltrans standards will be followed for the proper handling and disposal of any unanticipated hazardous waste discovered during construction.

Project Feature HAZ-2: Aerial Deposited Lead (ADL). The project will implement BMPs according to Caltrans specifications special provision 12-11.09 "Minimal Disturbance of Regulated Material Containing ADL."

Project Feature 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 7-1.01G 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 Pollution Discharge Elimination System Statewide Storm Water Permit to Caltrans to regulate storm water and non-stormwater discharges from Caltrans facilities. A Water Pollution Control Plan would be developed for the project, as one is required for all projects that have less than one acre of soil disturbance.

Protective measures will be included in the contract, including, at a minimum:

- No discharge of pollutants from vehicle and equipment cleaning are allowed into the storm drain or water courses.
- Vehicle and equipment fueling and maintenance operations must be 50 feet away from water courses.
- Concrete wastes are collected in washouts and water from curing operations is collected and disposed of and not allowed into water courses.
- Dust control will be implemented, including use of water trucks and tackifiers to control dust in excavation and fill areas, rocking temporary access roads entrances and exits, and covering temporary stockpiles when weather conditions require.

Project Feature TRIBE-1: Protect Discovered Tribal Cultural Resources with Temporary Fencing. If any tribal cultural resources are found during construction, a Caltrans PQS archaeologist shall determine whether the resources can be avoided by the project. If the resources can be avoided, the resources would be delineated on the ground with temporary fencing and avoided by construction. No construction-related activities or staging are permitted within these areas.

Avoidance and Minimization Measures

AMM AES-1: Guardrail, Safety Barrier, and Retaining Wall Design. New guardrail and safety barriers will be open, see-through type barriers to maintain views to scenic vistas beyond. New guardrail and safety barriers will include a matte finish on exposed metal to reduce glare. New concrete safety barrier may include context-sensitive color and/or texture surface treatments to aid in visual blending. New guardrails shall be terminated at buried end sections where feasible. Inline end treatments shall be used where buried end sections are not feasible. Newly constructed and replacement retaining walls will be buried to the extent feasible and exposed portions of retaining walls will include materials, color, and/or surface treatments to aid in visual blending.

AMM BIO-1: Pre-construction Plant Survey. A plant survey will be performed before construction can begin. Special-status plants will be flagged and avoided. If a species cannot be avoided, then consultation with USFWS/CDFW will be done to develop a translocation plan as appropriate. Should a state-listed or federal-listed plant be destroyed, work will stop and the USFWS and/or CDFW will be contacted within one

business day. The proposed project anticipates both permanent and temporary disturbances to the sensitive Seaside Daisy Alliance/Coastal Bluff Scrub habitat. Caltrans will re-seed all areas of disturbed soil with a local native hydroseed mix that includes species from the Seaside Daisy Alliance. Caltrans will remove invasive plants within the Caltrans' right-of-way at the 11 work locations and hydroseed with a native seed mix.

AMM BIO-2: Special-Status Species on Site. If a special-status species is observed within a construction zone, construction activities within a 50-foot radius of the animal will be suspended until the animal leaves the site voluntarily or an agency-approved protocol for removal has been established.

AMM BIO-3: Invasive Plant Removal. Plant species identified by the Cal-IPC as "high" (such as *C. edulis* [highway iceplant]) will be removed from the project footprint by bagging vegetative parts of the plant and removing the entire root system if possible. The disturbed area would be replanted with native vegetation that can establish before the invasive species, if possible.

AMM BIO-4: Revegetation Plan. Invasive plants within work areas will be removed at all locations and temporarily-disturbed areas will be re-seeded post-construction with a native and local hydroseed mix that includes fast-growing species and species from the Seaside Daisy Alliance/Coastal Bluff Scrub habitat.

AMM BIO-5: California red-legged frog and San Francisco garter snake Seasonal Avoidance. All construction activities off of paved surfaces within the project limits will be performed between April 15th and October 15th to minimize effects to California red-legged frog and San Francisco garter snake. Designated staging areas may be utilized outside of this work window once cleared by the USFWS-approved biologist and will have approved fencing installed around the perimeter. Any construction activities that occur in aquatic habitat will occur between June 15th and October 15th to minimize effects to federally listed species including California red-legged frog and San Francisco garter snake. It is anticipated that the implementation of Build Alternative 1 would require one construction season and the implementation of Build Alternative 2 would require one construction seasons.

AMM BIO-6: California red-legged frog and San Francisco garter snake Inclement Weather Restriction. No work will occur during or within 24 hours following a rain event exceeding 0.2 inch as measured by The National Oceanic and Atmospheric Administration National Weather Service for San Mateo, CA (KSFO) base station

available at Zone Area Forecast for Coastal Waters from Point Reyes to Pigeon Point California out to 10 nm (weather.gov). USFWS/CDFW approval to continue work during or within 24 hours of a rain event will be considered on a case-by-case basis.

AMM BIO-7: California red-legged frog and San Francisco garter snake Proper Use of Erosion Control Devices. To avoid entanglement or injury of the California red-legged frog, San Francisco garter snake, and other amphibian and reptile species, erosion control materials that use plastic or synthetic monofilament netting will not be used.

AMM BIO-8: California red-legged frog and San Francisco garter snake Avoidance of Entrapment. To prevent inadvertent entrapment of animals during construction, all excavated, steep-walled holes or trenches more than one-foot deep will be covered at the close of each working day by plywood or similar materials or provided with one or more escape ramps constructed of earth fill or wooden planks 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, or buried.

AMM BIO-9: 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 agency-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 biological monitor(s) will be on site during all work that could reasonably result in the take of the California red-legged frog or San Francisco garter snake. The monitor(s) will have the authority to stop work that may result in the unauthorized take of special-status species. If the biological monitor exercises this authority, the USFWS will be notified by telephone and e-mail message within one (1) working day.

AMM BIO-10: Pre-Construction/Daily Surveys. Pre-construction surveys for special status species, including the California red-legged frog and San Francisco garter snake will be conducted by the agency-approved biological monitor no more than 20 calendar days prior to any initial ground disturbance and immediately prior to ground-disturbing activities (including vegetation removal and fence installation) within 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

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. Safety permitting, the agency-approved biological monitor will also investigate 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 upon on site conditions and realized construction timelines.

AMM BIO-11: Protocol for Species Observation. The agency-approved biological monitor(s) will have the authority to halt work through coordination with the Resident Engineer in the event that California red-legged frog(s) or San Francisco garter snake(s) is 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 agency-approved handling techniques.

AMM BIO-12: Handling of Listed Species. If a listed species is discovered, the Resident Engineer and agency-approved biological monitor will be immediately informed.

- If a California red-legged frog or San Francisco garter snake 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 agency-approved biological monitor.
- The USFWS will be notified within one (1) working day if a California red-legged frog or San Francisco garter snake is discovered within the construction site. CDFW will be notified if a San Francisco garter snake is observed onsite.
- The captured California red-legged frog or San Francisco garter snake will be released within appropriate habitat outside of the construction area but nearby the capture location. The release habitat will be determined by the agency-approved biological monitor.

- The agency-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).

AMM BIO-13: Injured Animals. Injured California red-legged frog or San Francisco garter snake will be cared for by an agency-approved biological monitor(s) or a licensed veterinarian, if necessary. Any deceased California red-legged frog or San Francisco garter snake will be preserved according to standard museum techniques and will be held in a secure location. The USFWS will be notified within one (1) working day of the discovery of a death or an injury to any listed species resulting from project-related activities or if a listed species is observed at a construction site. Notification will include the date, time, and location of the incident or the finding of a deceased or injured animal, clearly indicated on a USGS 7.5-minute quadrangle and other maps at a finer scale, as requested by the USFWS, and any other pertinent information.

AMM BIO-14: Reporting. Caltrans will submit post-construction compliance reports prepared by the agency-approved biological monitor to the USFWS within 60 calendar days following completion of project activities or within 60 calendar days of any break in construction activity lasting more than 60 calendar days. This report will detail (1) dates that relevant project activities occurred; (2) pertinent information concerning the success of the project in implementing avoidance and minimization measures for listed species; (3) an explanation of failure to meet such measures, if any; (4) known project effects on listed species, if any; (5) occurrences of incidental take of any listed species, if any; (6) documentation of employee environmental education; and (7) other pertinent information.

AMM BIO-15: USFWS Access. If requested, before, during, or upon completion of groundbreaking and construction activities, Caltrans will allow access by USFWS personnel into the project footprint to inspect the project and its activities.

AMM BIO-16: Badger Den Sites. Active Badger den sites will be marked with flagging and avoided and a buffer zone will be established in coordination with CDFW.

AMM BIO-17: California red-legged frog Upland Habitat and San Francisco garter snake. To minimize impacts to California red-legged frog and San Francisco garter snake upland habitat, areas of unpaved ground-disturbing activities (areas with work but no additional pavement or structure), will be treated with permanent erosion control within one calendar year, if feasible.

AMM TRANS-1: Develop a Traffic Management Plan. To offset temporary disruption during construction, a TMP would be developed by Caltrans with input from the local community during the design phase. The TMP would include one-way traffic controls, flaggers, and construction phasing to reduce impacts to residents and maintain access for emergency services. The TMP would also include coordination with San Mateo County and public notification in the event of an emergency. The TMP would also ensure access to residential driveways that are near construction activities. The TMP would have the added benefit of reducing construction GHG emissions by limiting traffic delays.

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Appendix C List of Abbreviations

AB	assembly bill
ADA	Americans with Disabilities Act
ADL	aerially deposited lead
AMM	avoidance and minimization measure
APE	area of potential effects
ARB	California Air Resources Board
BAAQMD	Bay Area Air Quality Management District
BC	black carbon
BMP	best management practice
BSA	biological study area
BTU	British thermal units
C/CAG	City/County Association of Governments of San Mateo County
Caltrans	California Department of Transportation
CB	concrete barrier
CCA	California Coastal Act of 1976
CCC	California Coastal Commission
CCT	California Coastal Trail
CDFW	California Department of Fish and Wildlife
CDP	coastal development permit

CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CH_4	methane
CIDH	cast-in-drilled hole
CNDDB	California natural diversity database
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
dBA	A-weighted decibel
DP 30	Director's Policy 30
DTSC	California Department of Toxic Substances Control
EOP	emergency operations plan
EOs	executive orders
EQ Zapp	earthquake hazards zone application
FESA	federal Endangered Species Act
FHWA	Federal Highway Administration
FIRM	flood insurance rate map
GHG	greenhouse gas
GO	goal and objective
H&SC	health and safety code
HFCs	hydrofluorocarbon
IS	Initial Study

K-rail	temporary safety barrier
LCP	local coastal program
L_{max}	Maximum Noise Level
MBGR	metal beam guardrail
MGS	Midwest guardrail system
$MMTCO_2e$	million metric tons of carbon dioxide equivalent
MPO	Metropolitan Planning Organization
MSATs	mobile source air toxics
N_2O	nitrous oxide
MND	Mitigated Negative Declaration
ND	Negative Declaration
NEPA	National Environmental Policy Act
NES	Natural Environment Study
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OCRS	Office of Cultural Resource Studies
OPC	Ocean Protection Council
PM	post mile
$PM_{2.5}$	particulate matter equal to or less than 2.5 microns in diameter
PQS	professionally qualified staff

PRC	Public Resources Code
Programmatic Agreement	First Amended Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and Caltrans regarding compliance with Section 106 of the NHPA, as it pertains to the Administration of the Federal Aid Highway Program in California
project	SM 1 Safety Barrier Project
RCEM	road construction emissions model
ROW	right-of-way
RTP	Regional Transportation Plan
Safeguarding California Plan	Safeguarding California: Reducing Climate Risk
SB	senate bill
SCS	sustainable communities strategy
SF_6	sulfur hexafluoride
SHOPP	State Highway Operation and Protection Program
SM	San Mateo
SMCTA	San Mateo County Transportation Authority
SMLCP	San Mateo County Local Coastal Program
SR	State Route
SSC	state species of special concern
ST	state listed as threatened
TCE	temporary construction easement

TMC	Transportation Management Center
TMP	Traffic Management Plan
U.S. DOT	United States Department of Transportation
U.S. EPA	United States Environmental Protection Agency
USACE	United States Army Corps of Engineers
USC	United States Code
USFWS	United States Fish and Wildlife Service
USGS	U.S. Geological Survey
VIA	Visual Impact Assessment
VMT	vehicle miles traveled

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Appendix D Special-Status Plant and Wildlife Species

Table D-1 List of Special-Status Animal Species Potential to Occur in the BSA

Scientific Name[a]	Common Name[a]	Status[b]	General Habitat Preferences[c]	Suitable Habitat Present/ Absent	Potential to Occurand Rationale
Acipenser medirostris	Green sturgeon – southern Distinct Population Segment	FT	Sacramento River and near shore marine environment, coastal bays and estuaries along the west coast of North America (NMFS 2018).	Absent	*None.* Work will not occur in the ocean or in streams leading to the ocean. Suitable habitat is not present at stream outlets.
Agrostis blasdalei	Blasdale's bent grass	1B.2, G2, S2	Coastal bluff scrub; Coastal dunes; Coastal prairie. Sandy or gravelly soil close to rocks; often in nutrient-poor soil with sparse vegetation. 5-365 m.	Present	*Low.* Nearest CNDDB-documented occurrence is occurrence #60. Soil within the BSA is clay and hard sand with dense and low-growing native and invasive vegetation.
Allium peninsulare var. franciscanum	Franciscan onion	1B.2, G5T2, S2	Cismontane woodland; Ultramafic; Valley & foothill grassland. Clay soils; often on serpentine; sometimes on volcanics. Dry hillsides. 5-320 m.	Absent	*Low*. Nearest CNDDB-documented occurrences are about 5 miles away and are from 1950 and 2016.
Amsinckia lunaris	Bent-flowered fiddleneck	1B.2, G3, S3	Cismontane woodland; Coastal bluff scrub; Valley & foothill grassland. 3-795 m.	Present	*Low*. Nearest CNDDB documented occurrence (#6) is over 8 miles away from project site and is from 1963.
Antrozous pallidus	Pallid bat	SSC, G4, S3	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites. Coastal scrub Desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, riparian woodland, Sonoran desert scrub, upper montane coniferous forest valley and foothill grassland	Present	*Low*. Nearest CNDDB- documented occurrence is occurrence #294, about 6.5 miles away from project site.
Arctostaphylos franciscana	Franciscan manzanita	FE, 1B.1, GHC, S1	Chaparral, Serpentine outcrops in chaparral. 30-215 m.	Absent	*None*. The nearest CNDDB occurrence (#4) is over 12 miles away and is from 1918. Not seen during 2021 rare plant survey.

Scientific Name[a]	Common Name[a]	Status[b]	General Habitat Preferences[c]	Suitable Habitat Present/ Absent	Potential to Occurand Rationale
Arctostaphylos imbricata	San Bruno Mountain manzanita	SE, 1B.1, G1, S1	Chaparral, coastal scrub. Mostly known from a few sandstone outcrops in chaparral. 275-305 m.	Present	*Low*. The nearest CNDDB occurrence (#4) is over 9 miles away and is from 1981.
Arctostaphylos montana ssp. *ravenii*	Presidio manzanita	FE, SE, 1B.1, G3T1, S1	Chaparral, coastal prairie, coastal scrub. Open, rocky serpentine slopes. 20-215 m.	Present	*Low*. The nearest CNDDB occurrence is over 12 miles away. Not seen during 2021 rare plant survey.
Arctostaphylos montaraensis	Montara manzanita	1B.2, G1, S1	Chaparral; Coastal scrub. Slopes and ridges. 270-460 m.	Present	*Low*. The nearest CNDDB occurrence (#2 from 2014) is less than a mile from the project site.
Arctostaphylos pacifica	Pacific manzanita	SE, 1B.1, G1, S1	Chaparral; Coastal scrub. 320 m.	Present	*Low*. The nearest CNDDB occurrence (#1) is over 9 miles from project site (CDFW 2021).
Arctostaphylos regismontana	Kings mountain manzanita	1B.2, G2, S2	Broadleaved upland forest; Chaparral; North coast coniferous forest. Granitic or sandstone outcrops. 240-705 m.	Absent	*None*. Elevation of project is outside of range. Nearest CNDDB occurrence is from 1993 (#15), is less than 1 mile from project (CDFW 2021).
Astragalus pycnostachyus var. *pycnostachyus*	Coast marsh milk-vetch	1B.2, G2T2, S2	Coastal dunes; Coastal scrub; Marsh & swamp, Wetland. Mesic sites in dunes or along streams or coastal salt marshes. 0-155 m.	Present	*None*. Nearest CNDDB occurrence is from 2004 (#8) and is 35 miles away (CDFW 2021).
Astragalus tener var. *tener*	Alkali milk-vetch	1B.2, G2T1, S1	Alkali playa; Valley & foothill grassland; Vernal pool; Wetland. Low ground, alkali flats, and flooded lands; in annual grassland or in playas or vernal pools. 0-170 m.	Absent	*None*. Nearest CNDDB occurrence (#19) is from 1868. It is over 13 miles away from BSA (CDFW 2021).
Athene cunicularia	Burrowing owl	SSC, G4, S3	Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel. Coastal prairie Coastal scrub, Great Basin grassland, Great Basin scrub, Mojavean desert scrub Sonoran Desert scrub, Valley & foothill grassland	Absent	*None*. Occurrence #2 from 2017 is over 13 miles away from BSA (CDFW 2021).

Scientific Name[a]	Common Name[a]	Status[b]	General Habitat Preferences[c]	Suitable Habitat Present/ Absent	Potential to Occurand Rationale
Bombus occidentalis	Western bumble bee	SCE, G2, G3, S1	Once common & widespread, species has declined precipitously from central CA to southern British Columbia, perhaps from disease (CDFW 2020). Open grassy areas, urban parks and gardens, chaparral, shrub, mountain meadows. Nests usually underground. Example food plants: ceanothus, centaurea, chrysothamnus, Cirsium, geranium, grindelia, lupinus, melilotus, mondardella, rubus, solidago, trifolium (Williams et al. 2014)	Absent	*None*. Nearest CNDDB-documented occurrence is about 1.5 miles away and is from 1968. Small amounts of food plants were recorded at first site visit in March 2021. However, the project impact area is not consistent with the species' needs.
Brachyramphus marmoratus	Marbled murrelet	FT, SE, G3, S2	Coastal waters, bays, mature old-growth forests, low amounts of edge habitats, in coastal mountains	Absent	*None*. Habitat is not present. Nearest CNDDB documented occurrence is from 2011 about 6 miles away.
Callophrys mossii bayensis	San Bruno elfin butterfly	FE, G4T1, S3	Coastal, mountainous areas with grassy ground cover, mainly in the vicinity of San Bruno Mountain, San Mateo County; colonies are located on steep, north-facing slopes within the fog belt; Larval host plant is *Sedum spathulifolium* (bloom April-July)	Present	*Low*. Ground cover in the BSA is shrub. CNDDB recent records #1, 14, and 23 are within 1 mile of the BSA from 2018 and 2017 (CDFW 2021). This species was not seen during the 2021 rare plant survey. AMMs will be in place during construction.
Carex comosa	Bristly sedge	2B.1, G5, S2	Coastal prairie; Freshwater marsh; Marsh & swamp; Valley & foothill grassland; Wetland. Lake margins, wet places; site below sea level is on a Delta island. -5-1,010 m.	Present	*Low*. Freshwater marshes may be present in the BSA, however, the nearest CNDDB record (#10) is extirpated from 1866 and over 9 miles away (CDFW 2021).
Centromadia parryi ssp. *Parryi*	Pappose tarplant	1B.2, G2T2, S2	Chaparral; Coastal prairie; Marsh & swamp; Meadow & seep; Valley & foothill grassland. Vernally mesic, often alkaline sites. 1-500 m.	Absent	*None*. Nearest CNDDB occurrence is #1 from 2006 and is over 3 miles away (CDFW 2021).

Scientific Name[a]	Common Name[a]	Status[b]	General Habitat Preferences[c]	Suitable Habitat Present/ Absent	Potential to Occurand Rationale
Charadrius nivosus	Western snowy plover	FT, SSC, G3T3, S2	Sandy beaches, salt pond levees and shores of large alkali lakes	Present	*Low*. The nearest CNDDB is over 7 miles away. The occurrence (#148) is from 2016 and is located on the mouth of Pilarcitos Creek, at Half Moon Bay State Beach (CDFW 2021). Two iNaturalist accounts within 4 miles of project. Could occur as fly-over.
Chelonia mydas	Pacific green sea turtle	FT	Found in tropic and subtropical waters in the Mediterranean, Pacific, Atlantic, and Indian Oceans. Found along California coast. No known breeding sites in California (biologicaldiversity.org 2021)	Present	*None.* Although a sandy shore is present for breeding, there are no occurrences in California. Work will not be in the ocean, and water quality BMPs will be in place.
Chorizanthe cuspidata var. *cuspidata*	San Francisco Bay spineflower	1B.2, G2T1, S1	Coastal bluff scrub; Coastal dunes; Coastal prairie; Coastal scrub. Closely related to *C. pungens*. Sandy soil on terraces and slopes. 2-550 m.	Present	*Low*. Latest CNDDB occurrence is from 200X (#2), in Salada (CDFW 2021).
Chorizanthe robusta var. *robusta*	Robust spineflower	FE, 1B.1, G2T1, S1	Cismontane woodland, coastal dunes, coastal scrub, chaparral. Sandy terraces and bluffs or in loose sand. 5- 245 m.	Present	*Low*. The nearest CNDDB occurrence (#2) is over 7 miles away from the BSA and is from 1913 in Colma (CDFW 2021). Not seen during 2021 rare plant survey.
Cirsium andrewsii	Franciscan thistle	1B.2, G3, S3	Broadleaved upland forest; Coastal bluff scrub; Coastal prairie; Coastal scrub; Ultramafic. Sometimes serpentine seeps. 0-295 m.	Present	*Moderate*. Nearest CNDDB occurrence is within the project footprint recorded in 2000 (CDFW 2021). This species was not seen during the 2021 rare plant survey.
Cirsium occidentale var. *compactum*	Compact cobwebby thistle	1B.2, G3, G4T2, S2	Chaparral; Coastal dunes; Coastal prairie; Coastal scrub. On dunes and on clay in chaparral; also in grassland. 5- 245 m.	Present	*Low*. The nearest CNDDB occurrence (#15) is over 10 miles away from 1957 (CDFW 2021).
Collinsia corymbosa	Round-headed Chinese-houses	1B.2, G1, S1	Coastal dunes. 0-30 m.	Absent	*None*. The nearest CNDDB occurrence (#9) is over 10 miles away (CDFW 2021).

Scientific Name[a]	Common Name[a]	Status[b]	General Habitat Preferences[c]	Suitable Habitat Present/ Absent	Potential to Occurand Rationale
Collinsia multicolor	San Francisco Collinsia	1B.2, G2, S2	Closed-cone coniferous forest; Coastal scrub; Ultramafic. 10-275 m.	Present	*Low*. Nearest CNDDB-documented occurrence is within 1 mileof project location. It is from 1998 and presumed extant (CDFW 2021).
Corynorhinus townsendii	Townsend's big-eared bat	SSC, G4, S2	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	Absent	*None.* No Impact. Nearest CNDDB-occurrence is from 2011 and over 4 miles from the BSA (CDFW 2021).
Danaus plexippus pop. 1	Monarch – California overwintering population	FC, G4T2T3, S2, S3	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby. Closed- cone coniferous forest.	Present	*Moderate*. CNDDB occurrence #64 is within 0.25 mile of location 1. The record says 50 or so butterflies from 1984 to 1997. The Park ranger has not seen or received any reports of clusters. The site was visited in 2015 and noted eucalyptus and rich streamside vegetation in a protected gully (CDFW 2021). The vegetation in the gully will not be affected by the project. Large trees near the road will not be affected and are not protected by wind.
Dicamptodon ensatus	California giant salamander	SSC, G3, S2, S3	Aquatic Meadow & seep North coast coniferous forest Riparian forest. Known from wet coastal forests near streams and seeps from Mendocino County south to Monterey County, and east to Napa County. Aquatic larvae found in cold, clear streams, occasionally in lakes and ponds. Adults known from wet forests under rocks and logs near streams and lakes.	Absent	*None*. No impact. Habitat not present. Nearest CNDDB-documented occurrence (#85) is over 5 miles away (CDFW 2021).

Scientific Name[a]	Common Name[a]	Status[b]	General Habitat Preferences[c]	Suitable Habitat Present/ Absent	Potential to Occurand Rationale
Dirca occidentalis	Western leatherwood	1B.2, G2, S2	Broadleaved upland forest; Chaparral; Cismontane woodland; Closed-cone coniferous forest; North coast coniferous forest; Riparian forest; Riparian woodland. On brushy slopes, mesic sites; mostly in mixed evergreen & foothill woodland communities. 20-640 m.	Absent	*None*. The nearest CNDDB is occurrence #3 from 1975 is 1.7 miles from BSA (CDFW 2021).
Emys marmorata	Western pond turtle	SSC, G3, G4, S3	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6,000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	Absent	*None*. No impact. Habitat is not present. Nearest CNDDB-documented occurrence is over 5 miles away and is a record from 2005 (CDFW 2021).
Eriophyllum latilobum	San Mateo woolly sunflower	FE, SE, 1B.1, G1, S1	Cismontane woodland, coastal scrub, lower montane coniferous forest; often on roadcuts; found on and off serpentine; 30-610 m.	Absent	*None*. Habitat absent. Nearest known CNDDB occurrences are over 6 miles away (CDFW 2021). Not seen during 2021 rare plant survey.
Eucyclogobius newberryi	Tidewater goby	FE, SSC, G3, S3	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River; found in shallow lagoons and lower stream reaches, need fairly still, but not stagnant water and high oxygen levels	Present	*None*. The nearest CNDDB record is #22 is 10.6 miles away from project site (CDFW 2021). Work will not be in water.
Euphydryas editha bayensis	Bay checkerspot butterfly	FT, G5T1, S1	Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay; Bay checkerspot butterfly may also feed on nectar from plants located on adjacent, non-serpentine soils (USFWS 1998). *Plantago erecta* is the primary host plant; *Orthocarpus densiflorus* & *O. purpurescens* are the secondary host plants	Absent	*None*. The nearest CNDDB record is over 9 miles away and is occurrence #5 from 2000 (CDFW 2021). Not seen during 2021 rare plant survey.

Scientific Name[a]	Common Name[a]	Status[b]	General Habitat Preferences[c]	Suitable Habitat Present/ Absent	Potential to Occurand Rationale
Falco columbarius	Merlin	WL, G5, S3, S4	Seacoast, tidal estuaries, open woodlands, savannahs, edges of grasslands & deserts, farms & ranches. Estuary, Great Basin grassland, Valley & foothill grassland. Clumps of trees or windbreaks are required for roosting in open country.	Absent	*None*. Nearest CNDDB occurrence #12 is 3.5 miles away from project (CDFW 2021).
Falco peregrinus anatum	American peregrine falcon	FD, SD, FP, G4T4, S3, S4	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.	Present	*Low*. The nearest CNDDB occurrence is #55 over 8 miles from project site from 2014 (CDFW 2021). Known occurrences north of project site. AMMs will be in place.
Fritillaria biflora var. *ineziana*	Hillsboro chocolate lily	1B.1, G3, G4T1, S1	Cismontane woodland; Ultramafic; Valley & foothill grassland. Probably only on serpentine; most recent site is in serpentine grassland. 90-170 m.	Absent	*None.* Nearest CNDDB-documented occurrence is over 7 miles away (CDFW 2021).
Fritillaria liliacaea	Fragrant fritillary	1B.2, G2, S2	Coastal scrub, valley and foothill grassland, coastal prairie, cismontane woodland. Often on serpentine; various soils reported though usually on clay, in grassland. 3-385 m.	Present	*Low*. Nearest CNDDB occurrence is #37 and is over 3.5 miles away (CDFW 2021). Not seen during 2021 rare plant survey.
Geothlypis trichas sinuosa	Salt marsh common yellowthroat	SSC, G5T3. S3	Resident of the San Francisco Bay region, in fresh and salt-water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	Absent	*None*. No impact. Habitat for this species does not exist within the BSA. Nearest occurrence (#5) is about 3.5 miles away (CDFW 2021).
Gilia capitata ssp. *chamissonis*	Blue coast gilia	1B.1, G5T2, S2	Coastal dunes, coastal scrub. 3-200 m.	Present	*None*. The nearest CNDDB occurrence is #31 from 2001 and is over 10 miles away from project site. (CDFW 2021). Not seen during 2021 rare plant survey.
Gilia millefoliata	Dark-eyed gilia	1B.2, G2, S2	Coastal dunes. 1-60 m.	Absent	*None*. The nearest CNDDB occurrence is #42 over 9 miles away (CDFW 2021). Not seen during 2021 rare plant survey.

Scientific Name[a]	Common Name[a]	Status[b]	General Habitat Preferences[c]	Suitable Habitat Present/ Absent	Potential to Occurand Rationale
Grindelia hirsutula var. *maritima*	San Francisco gumplant	3.2, G5T1Q, S1	Coastal scrub, coastal bluff scrub, valley and foothill grassland. Sandy or serpentine slopes, sea bluffs. 15-305 m.	Present	*Moderate*. CNDDB occurrence #11 is within the BSA and is from 1972 (CDFW 2021). Not seen during 2021 rare plant survey.
Haliotis cracherodii	Black abalone	FE	Rocky substrates on intertidal and shallow subtidal reefs to about 18 feet deep along the coast. Typically in areas of complex surfaces and deep crevices. Found from Point Arena south to Bahia Tortugas, Mexico. Populations in decline due to withering disease from warmer ocean temperatures, overfishing, and pollutants (NOAA 2020).	Absent	*None*. Habitat is not present in the work area. The nearest CNDDB occurrence is record #11 and is over 9 miles away (CDFW 2021).
Helianthella castanea	Diablo helianthella	1B.2, G2, S2	Broadleaved upland forest; Chaparral; Cismontane woodland; Coastal scrub; Valley & foothill grassland. Usually in chaparral/oak woodland interface in rocky, azonal soils. Often in partial shade. 45-1,070 m.	Present	*Low*. The nearest CNDDB record (#12) is over 9 miles away (CDFW 2021).
Hemizonia congesta ssp. *Congesta*	Congested-headed hayfield tarplant	1B.2, G5T2, S2	Valley and foothill grassland. Grassy valleys and hills, often in fallow fields; sometimes along roadsides. 5-520 m	Absent	*None*. Habitat is not within the BSA. The nearest CNDDB occurrence is #1 over 6 miles away (CDFW 2021).
Hesperevax sparsiflora var. *brevifolia*	Short-leaved evax	1B.2, G4T3, S3	Coastal bluff scrub, coastal dunes, coastal prairie. Sandy bluffs and flats. 0-640 m.	Present	*Low*. The nearest CNDDB occurrence is #2 and is over 11 miles from project site (CDFW 2021).
Heteranthera dubia	Water star-grass	2B.2, G5, S2	Marshes and swamps. Alkaline, Still or slow-moving water. Requires a pH of 7 or higher, usually in slightly eutrophic waters. 15-1,510 m.	Absent	*None.* Habitat is not present in the BSA. The nearest CNDDB occurrence is over 9 miles away. Record #1 from 1879 (CDFW 2021)

Scientific Name[a]	Common Name[a]	Status[b]	General Habitat Preferences[c]	Suitable Habitat Present/ Absent	Potential to Occurand Rationale
Horkelia cuneata var. *sericea*	Kellogg's horkelia	1B.1, G4T1?, S1?	Closed-cone coniferous forest, coastal scrub, coastal dunes, chaparral. Old dunes, coastal sandhills; openings. Sandy or gravelly soils. 5-430 m.	Present	*Moderate*. CNDDB occurrence #60 is within the BSA. Unknown when and how many plants were seen. Mapped as best guessed by the CNDDB at the center of the areas mentioned. Source of information for this site is from a 2001 checklist. (CDFW 2021). This species was not seen during thespring 2021 rare plant survey.
Horkelia marinensis	Point Reyes horkelia	1B.2, G2, S2	Coastal dunes, coastal prairie, coastal scrub. Sandy flats and dunes near coast; in grassland or scrub plant communities. 2-775 m.	Present	*Low*. The nearest CNDDB occurrence is #26 and is over 5 miles away from BSA and is from 2015 (CDFW 2021).
Hypogymnia schizidiata	Island tube lichen	1B.3, G2, G3, S2	Chaparral, closed-cone coniferous forest. On bark and wood of hardwoods and conifers. 260-540 m.	Absent	*None*. Habitat is not present within the BSA. Nearest CNDDB occurrence is within 1 mile from the BSA (CDFW 2021).
Hypomesus transpacificus	Delta Smelt	FT, SE,G1, S1	Sacramento- San Joaquin Delta. Seasonally in Suisun Bay, Carquinez, Strait and San Pablo Bay. Seldom found at Salinities>10 ppt. Most often at salinities<2 ppt.	Absent	*None.* The nearest CNDDB record is over 10 miles from BSA (CDFW 2021). Project has no in-water work.
Lasthenia californica ssp. *macrantha*	Perennial goldfields	1B.2, G3T2, S2	Coastal bluff scrub, coastal dunes, coastal scrub. 5-185 m.	Present	*Moderate*. The nearest CNDDB occurrences are within one mile of the BSA. This species was not seen during the spring 2021 rare plant survey.
Laterallus jamaicensis coturniculus	California Black Rail	ST, FP, G3, G4T1, S1	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	Absent	*None*. The nearest CNDDB record is #24 and is from 1937 and is over 10 miles from BSA (CDFW 2021).

Scientific Name[a]	Common Name[a]	Status[b]	General Habitat Preferences[c]	Suitable Habitat Present/ Absent	Potential to Occurand Rationale
Layia carnosa	Beach layia	FE, SE, 1B.1, G2, S2	Coastal dunes, coastal scrub. On sparsely vegetated, semi-stabilized dunes, usually behind foredunes. 3-30 m.	Present	*None*. The nearest CNDDB record is over 10 miles away. Occurrence #6 from 1987 (CDFW 2021).
Leptosiphon croceus	Coast yellow leptosiphon	SE, 1B.1, G1, S1	Coastal bluff scrub, coastal prairie. 10-150 m. blooms April-May	Present	*Moderate*. Nearest CNDDB occurrence is 1.6 miles south found in 2015 (CDFW 2021). This species was not seen during the spring 2021 rare plant survey. AMMs will be in place during construction.
Leptosiphon rosaceus	Rose leptosiphon	1B.1, G1, S1	Coastal bluff scrub. 10-140 m.	Present	*Moderate*. Nearest CNDDB record is over a mile south of the project and is from 1903 and 1950, possibly extirpated. Second nearest occurrences are #3 and #27 which are over 3 miles from the BSA. This species was not seen during the spring 2021 rare plant survey.
Lessingia arachnoidea	Crystal Springs lessingia	1B.2, G2, S2	Coastal sage scrub, valley and foothill grassland, cismontane woodland. Grassy slopes on serpentine; sometimes on roadsides. 90-200 m.	Present	*None*. The elevation onsite is outside of the plant's normal range. The nearest CNDDB record is over 6 miles away. Occurrence #6 is from 2014, approximately 0.8 to 1.5 miles south of the south end of lake San Andreas (CDFW 2021).
Lessingia germanorum	San Francisco lessingia	FE, SE, 1B.1, G1, S1	Coastal scrub. On remnant dunes. Open sandy soils relatively free of competing plants. 3-155 m.	Present	*None*. The nearest CNDDB is over 10 miles from BSA. Occurrence #4 is from 1947 (CDFW 2021). Not seen during 2021 rare plant survey.
Limnanthes douglasii ssp. *ornduffii*	Ornduff's meadowfoam	1B.1, G4T1, S1	Meadows and seeps, agricultural fields. 5-15 m.	Absent	*None*. The nearest record is 2 miles away and is from 2011 (CDFW 2021).
Malacothamnus arcuatus	Arcuate bush-mallow	1B.2, G2Q, S2	Chaparral, cismontane woodland. Gravelly alluvium. 1-735 m. Chaparral, Cismontane woodland.	Absent	*None*. Habitat absent. Nearest CNDDB occurrence is #32 (CDFW 2021).

Scientific Name[a]	Common Name[a]	Status[b]	General Habitat Preferences[c]	Suitable Habitat Present/ Absent	Potential to Occurand Rationale
Melospiza melodia pusillula	Alameda Song Sparrow	SSC, G5T2?, S2, S3	Resident of salt marshes bordering south arm of San Francisco Bay. Inhabits Salicornia marshes; nests low in Grindelia bushes (high enough to escape high tides) and in Salicornia.	Absent	*None.* No impact. The habitat needs of the species do not exist within the BSA. Nearest CNDDB occurrences are over 6 miles away (CDFW 2021).
Monardella sinuata ssp. *nigrescens*	Northern curly-leaved monardella	1B.2, G3T2, S2	Coastal dunes, coastal scrub, chaparral, lower montane coniferous forest. Sandy soils. 10-245 m.	Present	*Low*. The Nearest CNDDB record is #12 from 1933 (possibly extirpated) over 10 miles away from BSA (CDFW 2021).
Monolopia gracilens	Woodland woollythreads	1B.2, G3, S3	Chaparral, valley and foothill grassland, cismontane woodland, broad-leafed upland forest, North Coast coniferous forest. Grassy sites, in openings; sandy to rocky soils. Often seen on serpentine after burns, but may have only weak affinity to serpentine. 120-975 m.	Absent	*None*. Project is not within the known elevation range of the species. The nearest CNDDB record is #40 from 1949 and is over 4 miles from the project site (CDFW 2021). Was not documented in the 2021 plant surveys.
Mylopharodon conocephalus	Hardhead	SSC, G3, S3	Low to mid-elevation streams in the Sacramento-San Joaquin drainage. Also present in the Russian River.	Absent	*None*. The nearest CNDDB record is #33 from 1989 and is over 10 miles from project site (CDFW 2021).
Neotoma fuscipes annectens	San Francisco dusky-footed woodrat	SSC, G5T2T3, S2, S3	Forest habitats of moderate canopy & moderate to dense understory. May prefer chaparral & redwood habitats. Chaparral Redwood. Constructs nests of shredded grass, leaves & other material. May be limited by availability of nest-building materials.	Absent	*None*. No impact. Habitat does not exist within the BSA. Numerous CNDDB-documented occurrences over 5 miles east of the BSA.
Nyctinomops macrotis	Big free-tailed bat	SSC, G5, S3	Low-lying arid areas in Southern California. Need high cliffs or rocky outcrops for roosting sites. Feeds principally on large moths (CDFW 2019).	Absent	*None*. Habitat is not present in the BSA. CNDDB occurrence #20 in 1984 is a little over 2 miles away from the project site (CDFW 2021).
Oncorhynchus kisutch	Coho salmon - central California coast ESU	FE, SE	Approximately first half of life cycle spent rearing and feeding in streams and small freshwater tributaries; spawning habitat is in small streams with stable gravel substrates; remainder of the life cycle is spent foraging in estuarine and marine waters of the Pacific Ocean	Present	*None.* The freshwater stream Martini Creek is at locations 1 and 2, however, it is inaccessible to fish and may not hold water for periods long enough to support all life stages of coho.

Scientific Name[a]	Common Name[a]	Status[b]	General Habitat Preferences[c]	Suitable Habitat Present/ Absent	Potential to Occurand Rationale
Oncorhynchus mykiss irideus pop. 8	Steelhead – central California coast Distinct Population Segment (DPS)	FT, G5T2T3Q, S2, S3	From the Russian River southward to Soquel Creek and to, but not including, Pajaro River; San Francisco and San Pablo Bay basins	Absent	*None.* Accessible streams are not within the BSA. Nearest CNDDB-documented records are within 2 miles of the BSA in San Pedro Creek (CDFW 2021).
Pentachaeta bellidiflora	White-rayed pentachaeta	FE, SE, 1B.1, G1, S1	Valley and foothill grassland, cismontane woodland; open, dry, rocky slopes and grassy areas, often on soils derived from serpentine bedrock; 100 to 200 feet above mean sea level	Absent	*None.* This habitat does not exist within the BSA. Nearest extant population is over 4.5 miles from the BSA occurrence #2 (CDFW 2021).
Phalacrocorax auritus	Double-crested cormorant	WL, G5, S4	Colonial nester on coastal cliffs, offshore islands, and along lake margins in the interior of the state. Riparian forest Riparian scrub Riparian woodland. Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.	Present	*Moderate*. While the nearest CNDDB occurrence (#34) is over 10 miles away (CDFW 2021), there are multiple iNaturalist documented occurrences to the south where rocky intertidal habitat is present, several near Gray Whale Cove State Beach, and one near the BSA. Likely to occur as a fly-over only.
Plagiobothrys chorisianus var. *chorisianus*	Choris' popcornflower	1B.2, G3T1Q, S1	Chaparral, coastal scrub, coastal prairie. Mesic sites. 5-705 m.	Present	*Moderate*. Nearest CNDDB occurrence is #43 from 2015, about 0.16 mile from BSA (CDFW 2021). This species was not seen during the spring 2021 rare plant survey.
Plebejus icarioides missionensis	Mission blue butterfly	FE, G5T1, S1	Inhabits grasslands of the San Francisco Peninsula; three larval host plants: *Lupinus albifrons*, *L. variicolor*, and *L. formosus*, of which *L. albifrons* is favored	Absent	*Low.* Grasslands does not exist within the BSA. Nearest extant population is over 4.5 miles north of BSA (CDFW 2021). However, L albifrons and L. variicolor were detected during the 2021 rare plant surveys. It is not likely San Bruno elfin butterfly would occupy scrub habitat in the BSA.

Scientific Name[a]	Common Name[a]	Status[b]	General Habitat Preferences[c]	Suitable Habitat Present/ Absent	Potential to Occurand Rationale
Polemonium carneum	Oregon polemonium	2B.2, G3, G4, S2	Coastal prairie, coastal scrub, lower montane coniferous forest. 0-1,830 m.	Present	*Very Low*. Nearest CNDDB occurrence is #2 from 1916 nearly 5 miles from the BSA (CDFW 2021).
Potentilla hickmanii	Hickman's potentilla	FE, SE, 1B.1, G1, S1	Coastal bluff scrub, closed-cone coniferous forest, meadows and seeps, marshes and swamps. Freshwater marshes, seeps, and small streams in open or forested areas along the coast. 5-125 m. bloom: Apr-Aug	Present	*Moderate*. Habitat is found within the BSA. Nearest occurrence #6 is within 0.28 mile of the BSA, next nearest occurrence is #1 at 1.3 miles from the BSA and extirpated; It is threatened by trampling, non- native plant encroachment, and harding grass infestation (CDFW 2021). This species was not seen during the spring 2021 rare plant survey. AMMs will be in place during construction.
Rallus obsoletus obsoletus	California Ridgway's rail	FE, SE, FP, G3T1, S1	Salt-water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay; associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs	Absent	*None*. No suitable habitat is present within BSA. Nearest CNDDB record (#43) is over 7 miles east of the BSA (CDFW 2021).
Rana boylii	Foothill yellow-legged frog	SE, SSC, G3, S3	Partly shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Aquatic, Chaparral, Cismontane woodland, Coastal scrub, Klamath/North coast flowing waters, Lower montane coniferous forest Meadow & seep, Riparian forest, Riparian woodland, Sacramento/San Joaquin flowing waters. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.	Absent	*None*. Martini Creek likely does not support the habitat required for this species. Nearest CNDDB occurrence is #2133 and is over 4 miles from the BSA (CDFW 2021).

Scientific Name[a]	Common Name[a]	Status[b]	General Habitat Preferences[c]	Suitable Habitat Present/ Absent	Potential to Occurand Rationale
Rana draytonii	California red-legged frog	FT, SSC, G2G3, S2, S3	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby, or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation (upland) habitat.	Present	*High*. Five CNDDB occurrences are within or near the BSA (CDFW 2021).
Riparia riparia	Bank swallow	ST, G5, S2	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole. Riparian scrub, Riparian woodland	Absent	*None*. The nearest CNDDB is over 10 miles away and record #64 was from 2012 in San Francisco (CDFW 2021).
Sanicula maritima	Adobe sanicle	SR, 1B.1, G2, S2	Meadows and seeps, valley and foothill grassland, chaparral, coastal prairie. Moist clay or ultramafic soils. 15-215 m. Chaparral Coastal prairie Meadow & seep Ultramafic, Valley & foothill grassland	Absent	*None*. The nearest CNDDB record is #5 from 1895 in San Francisco and is over 10 miles from BSA (CDFW 2021).
Senecio aphanactis	Chaparral ragwort	2B.2, G3, S2	Chaparral, cismontane woodland, coastal scrub. Drying alkaline flats. 20-855 m.	Present	*None*. Habitat is only partially there as the BSA is a mesic site. The nearest CNDDB record is over 12 miles away, the occurrence (#83) is from 1956 (CDFW 2021).
Silene scouleri ssp. scouleri	Scouler's catchfly	2B.2, G5T4T5, S2, S3	Coastal bluff scrub, coastal prairie, valley and foothill grassland. 5-315 m.	Present	*Moderate*. Three recent CNDDB occurrences from 0.6 to 1.5 miles from BSA (#2, 3, and 4) between San Pedro Mountain and Montara Mountain from 2003 (CDFW 2021). This species was not seen during the spring 2021 rare plant survey.
Silene verecunda ssp. *verecunda*	San Francisco campion	1B.2, G5T1, S1	Coastal scrub, valley and foothill grassland, coastal bluff scrub, chaparral, coastal prairie. Often on mudstone or shale; one site on serpentine. 30-645 m.	Present	*Moderate*. Nearest CNDDB occurrence is #17 from 2007 in Devils Slide (CDFW 2021); about 0.5 miles from the BSA. This species was not seen during the spring 2021 rare plant survey.

Scientific Name[a]	Common Name[a]	Status[b]	General Habitat Preferences[c]	Suitable Habitat Present/ Absent	Potential to Occurand Rationale
Speyeria callippe callippe	Callippe silverspot butterfly	FE, G5T1, S1	Restricted to the northern coastal scrub of the San Francisco peninsula. Host plant is *Viola pedunculata*. Most adults found on E-facing slopes; males congregate on hilltops in search of females.	Present	*None*. Habitat is marginal. The slopes in the BSA are mostly west-facing. Host plant was not found during spring 2021 plant survey. The nearest CNDDB occurrence is #6 from 2006 and is over 8 miles away from BSA (CDFW 2021).
Speyeria zerene myrtleae	Myrtle's silverspot butterfly	FE, G5T1, S1	Restricted to the foggy, coastal dunes/hills of the Point Reyes peninsula; extirpated from coastal San Mateo County. Associated with coastal terrace prairie, stabilized sand dunes, and grassland habitats with larval foodplant, *Viola adunca*	Present	*None*. Considered extirpated from San Mateo County. Nearest CNDDB record (#13) is 3 miles away and has unknown occurrence date (CDFW 2021).
Spirinchus thaleichthys	Longfin smelt	FC, ST, G5, S1	Euryhaline, nektonic and anadromous; found in open waters of estuaries, mostly in middle or bottom of water column; prefer salinities of 15-30 parts per trillion, but can be found in completely freshwater to almost pure seawater	Absent	*None*. Found in the SF Bay. Nearest CNDDB occurrence is #22 in 1995 South San Francisco Bay (CDFW 2021).
Suaeda californica	California seablite	FE, 1B.1, G1, S1	Marshes and swamps. Margins of coastal salt marshes. 0-5 m.	Absent	*None*. Nearest CNDDB occurrence is over 14 miles from BSA. The record #18 is from 2013 and located in vicinity of port of San Francisco (CDFW 2021).
Taxidea taxus	American badger	SSC, G5, S3	Inhabits herbaceous, shrub, and open stages of most habitats with dry, friable soils. Burrows are dug in relatively dry, often sandy, soil, usually in areas with sparse overstory cover.	Present	*Moderate*. Nearest CNDDB record is #127, 1.5 miles away from project site Park (CDFW 2021). Nearest iNaturalist record is roadkill near location 10 (iNaturalist 2021). May occur as a traveler but burrows are not expected due to steep cliffs.

Scientific Name[a]	Common Name[a]	Status[b]	General Habitat Preferences[c]	Suitable Habitat Present/ Absent	Potential to Occurand Rationale
Thamnophis sirtalis tetrataenia	San Francisco garter snake	FE, SE, FP, G5T2Q, S2	Vicinity of freshwater marshes, ponds, and slow-moving streams in San Mateo County and extreme northern Santa Cruz County; prefer dense cover and water depths of at least one foot; upland areas near water are also very important. SFGS are most active near aquatic habitats in spring and fall, with peak activity between March and July (USFWS 2006). Winter months they spend in uplands and are less active.	Present	*Low*. The nearest CNDDB-documented occurrence (#7 and #56) from 1979 and 2006 (CDFW 2021). iNaturalist has a June 3, 2016 record 2.5 miles north of the project; two other records from 1985 and 2018 show up in the ocean. All three iNaturalist accounts are over 2 miles from the BSA. The next nearest occurrences are over 3 miles north. While San Francisco garter snake are expected to be seen near California red-legged frog populations, the lack of San Francisco garter snake documentation in the area lower the potential to occur.
Trifolium amoenum	Showy Indian (two-fork) clover	FE, 1B.1, G1, S1	Valley and foothill grassland, coastal bluff scrub. Sometimes on serpentine soil, open sunny sites, swales. Most recently cited on roadside and eroding cliff face. 5- 310 m.	Present	*Very Low*. Habitat is marginal since the area typically receives fog, and the project is not located in swales. The nearest CNDDB occurrence is over 7 miles away and is record #28 from 1907 (CDFW 2021).
Triphysaria floribunda	San Francisco owl's-clover	1B.2, G2?, S2?	Coastal prairie, coastal scrub, valley and foothill grassland. On serpentine and non-serpentine substrate (such as at Pt. Reyes). 1-150 m.	Present	*Very low*. Nearest CNDDB occurrence is #53 from year 1900 (CDFW 2021). Next nearest occurrences are over 5 miles from the BSA.
Triquetrella californica	Coastal triquetrella	1B.2, G2, S2	Coastal bluff scrub, coastal scrub. Grows within 30 m from the coast in coastal scrub, grasslands and in open gravels on roadsides, hillsides, rocky slopes, and fields. On gravel or thin soil over outcrops. 10-100 m.	Present	*Very Low*. CNDDB latest occurrence #8 is from 2006 (CDFW 2021). It is over 3.75 miles from the BSA.

Critical Habitat

Scientific Name[a]	Common Name[a]	Status[b]	General Habitat Preferences[c]	Suitable Habitat Present/ Absent	Potential to Occur and Rationale
Acipenser longirostrus	Green sturgeon critical habitat	FT	US marine waters within 60 m depth from the California/Mexico border north to Monterey Bay, Ca and from the Alaska/Canada border northwest to the Bering Strait; the lower Columbia River from river kilometer 74 to the Bonneville Dam; and certain coastal bays and estuaries in California including the Elkhorn Slough and Tomales Bay. (NMFS 2020).	Absent	*None*. The project impact area does not include ocean waters.
Haliotis cracherodii	Black abalone critical habitat	FE	Critical habitat is designated for this species in California in coastal marine waters above the benthos at mean higher high water line or average high tide line to 20 feet below sea level in certain areas including the southern point of the mouth of the San Francisco Bay to Natural Bridges State Beach (NOAA 2011).	Absent	*None*. The project impact area does not include intertidal waters. The BSA does not include rocky intertidal zones.
Oncorhynchus mykiss and Oncorhynchus tshawytscha	Steelhead and Coho–central California coast Distinct Population Segment critical habitat	FT	The Federal Register designated final critical habitat for two ESUs of chinook salmon and five ESUs of steelhead in the SF Bay. (Federal Register 2005).	Absent	*None*. CNDDB latest occurrence is 2 miles away, occurrence #12 (CDFW 2021). Critical habitat for steelhead is located 1.5 miles north of the BSA and 3.5 miles south of the BSA. Steelhead and coho are not known to use Martini Creek and cannot access it due to the fish passage barrier.

Natural Habitat/Communities

Scientific Name[a]	Common Name[a]	Status[b]	General Habitat Preferences[c]	Suitable Habitat Present/ Absent	Potential to Occur and Rationale
Oncorhynchus kisutch and *Oncorhynchus tshawytscha*	Central California Coast ESU Coho and California Coastal Chinook Essential Fish Habitat	Central California Coast ESU Coho-FE California Coastal Chinook-FT	EFH for these species occurs from the SF Bay west to the Santa Cruz Mountain ridge.	Present	*None*. Chinook and coho are not known to use Martini Creek and cannot access it due to the fish passage barrier.
Artemisia californica – Salvia leucophylla	California Sagebrush Shrubland Alliance	G5 S5	California sagebrush covers the landscape 3 times more than coyote brush and other shrub species. Found on steep slopes that are rarely flooded. And low-gradient deposits along streams (CNPS 2021).	Present	*High.* This Alliance occurs throughout the project footprint and is expected to be affected by the project. Due to its ranking, further analysis is not required, however, areas with this resource that are temporarily disturbed will be re-seeded with local flora post-construction.
Baccharis pilularis	Northern coastal bluff scrub/ Coyote brush Scrub Alliance	G5 S5	Found in river mouths, stream sides, terraces, stabilized dunes of coastal bars, coastal spits, coastal bluffs, open slopes, ridges. Soils are sandy to heavy clay. Vegetation cover contains Baccharis pilularis greater than 15% cover over grassy understory and over 50% cover relative to other shrubs (CNPS 2021).	Present	*High.* This Alliance occurs throughout the project footprint and is expected to be affected by the project. Due to its ranking, further analysis is not required, however, areas with this resource that are temporarily disturbed will be re-seeded with local flora post-construction.

Scientific Name[a]	Common Name[a]	Status[b]	General Habitat Preferences[c]	Suitable Habitat Present/ Absent	Potential to Occur and Rationale
Eriophyllum staechadifolium – *Erigeron glaucus* – *Eriogonum latifoli* Alliance	Seaside Woolly Sunflower – Seaside Daisy – Buckwheat Patches / Beach Sand or Coastal Bluff Scrub	G3 S3	This alliance can be found in sand dunes (Beach Sand) coastal bars, river mouths, spits along coastlines, steep coastal bluffs, and terraces immediately adjacent to the ocean. Soils are coarse to fine-textured sands. Herbs are less than 1.5 meters tall and cover is sparse to continuous. Emergent shrubs may be present at low cover	Present	*High.* This Alliance occurs throughout the project footprint and is expected to be affected by the project. Areas with this resource that are temporarily disturbed will be re-seeded with local flora post-construction. Efforts will be made to include species consistent with the Alliance.
-	Estuarine and Marine wetland		Consists of the open ocean overlying the continental shelf and its associated high-energy coastline. Typically flooded by ocean tides once daily. Water source is 30 parts per thousand (ppt) with little or no dilution, typically from ocean tides or splash. Bedrock, stones and/or boulders make up at least 75% of the landscape with less than 30% vegetated.	Present	*None.* This habitat type is in the BSA but is not where work will be done. Ocean spray is the only source of *salt* water that plants in the project limits receive, but plants also receive freshwater from seeps, rain, and fog.
-	Estuarine and Marine Deepwater Habitat		Consists of the open ocean overlying the continental shelf and its associated high-energy coastline. The substrate is continuously covered by ocean water. Water source is 30 parts per thousand (ppt) with little or no dilution, typically from ocean tides or splash. At least 25% of the habitat is covered by particles smaller than 6-7 cm, and less than 30% vegetated.	Present	*None.* This habitat is present in the BSA but not in the project footprint where work will occur.

Scientific Name[a]	Common Name[a]	Status[b]	General Habitat Preferences[c]	Suitable Habitat Present/ Absent	Potential to Occur and Rationale
-	Freshwater/ forested shrub wetland habitat	Jurisdictional water	Palustrine System that includes all nontidal wetlands dominated by trees, shrubs, persistent emergent, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 parts per thousand. Scrub-shrub. It includes areas dominated by woody vegetation less than 6 m (20 feet) tall. Surface water is present for brief periods (from a few days to a few weeks)	Present	*None.* This habitat is in the BSA near location 2. It will not be affected by the project. An ESA will be delineated in the project layouts, and a fence may be placed prior to start of construction.
-	Riverine wetland habitat	Jurisdictional water	The Riverine System includes all wetlands and deep-water habitats contained within a channel except for wetlands dominated by trees, shrubs, emergents. Salinity level less than 0.5 ppt.	Present	*None.* This habitat is in the BSA near location 11. It will not be affected by the project. An ESA may be delineated in the project layouts, and a fence may be placed prior to start of construction.

Notes:
[a] Scientific nomenclature based on the California Natural Diversity Database (CDFW 2021); common names from CNDDB and other sources.
[b] Acronym definitions are as follows: BSA Biological Study Area
- = not applicable
AMMs = Avoidance and Minimization Measure
BSA = Biological Study Area
cm = centimeters
CNDDB= California Natural Diversity Database
CRLF = California red-legged frog
DPS = Distinct Population Segment
ESA = Endangered Species Act
EFH = Essential Fish Habitat
ESUs = evolutionarily significant units
ft = feet
GHC = possibly extinct, cultivated only
km = kilometer
m = meters
NMFS = National Marine Fisheries Service
NNE = North Northeast

ppt = parts per thousand (
SFGS = San Francisco garter snake
WL = Watch List

United States Fish and Wildlife Service Designations:
FE Endangered: any species in danger of extinction throughout all or a significant portion of its range.
FT Threatened: any species likely to become endangered within the foreseeable future.
FC Federal Candidate: candidate for protection under the Federal Endangered Species Act.
FD Federal Delisted

California Department of Fish and Wildlife Designations:
SE Endangered: any species in danger of extinction throughout all or a significant portion of its range.
ST Threatened: any species likely to become endangered within the foreseeable future.
SCE State Candidate Endangered
SD State Delisted
SR State Rare
SSC Species of Special Concern
FP Fully Protected Species

California Rare Plant Ranks (CRPR):
1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
CRPR Threat Ranks:
.1: Seriously threatened in California (80-100% of occurrences threatened)
.2: Moderately threatened in California (20-28% of occurrences threatened)
.3: Not very threatened in California (<20% of occurrences threatened)
G1 Critically Imperiled
G2 Imperiled
G3 Vulnerable
G4 Apparently Secure
G5 Secure
Q Questionable taxonomy that may reduce conservation priority -
T# Infraspecific Taxon (trinomial)
S2 Imperiled
S3.1 sensitive natural community that is either rare or threatened in California
S4 Apparently Secure
S5 Secure

Sources:

California Department of Fish and Wildlife (CDFW). 2021. *California Natural Diversity Database (CNDDB) Rarefind 5*: Habitat Conservation Division. Sacramento, California. https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data

California Department of Fish and Wildlife (CDFW). 2021. *California Natural Diversity Database (CNDDB) Rarefind 5*: Habitat Conservation Division. Sacramento, California. https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data

California Native Plant Society (CNPS). 2021. *The California Native Plant Society's Inventory of Rare and Endangered Plants of California* (Online edition, version 7.7). http://www.rareplants.cnps.org/

CDFW 2019

CDFW 2020

Center for Biological Diversity. 2021. Profile Pages. Pacific Green Sea Turtle. Available: https://www.biologicaldiversity.org/campaigns/esa_works/profile_pages/PacificGreenSeaTurtle.html. Accessed November 12, 2020.

Federal Register. 2005. Designation of critical habitat for seven evolutionarily significant units of Oncorhynchus.

Federal Register 2005

iNaturalist. 2021. Available from https://www.inaturalist.org

Keeley, J. E. 1990. The California Valley Grassland. California State University, Fullerton. Endangered Plant Communities of Southern California: Proceedings of the 15th Annual Symposium: 3-23

NOAA 2011

National Oceanic and Atmospheric Administration (NOAA). 2020. NOAA fisheries. Species. Black abalone. Available: https://www.fisheries.noaa.gov/species/black-abalone. Accessed on November 19, 2020.

NMFS. 2020. National Marine Fisheries Service. 2005. Critical habitat designation for the southern distinct population segment for North American green sturgeon. https://www.Fisheries.noaa.gov

NatureServe. 2013. A Network Connecting Science with Conservation. NatureServe help and support. Biotics5 Online Help. Available: https://help.natureserve.org/biotics/content/record_management/Element_Files/Element_Tracking/ETRACK_Definitions_of_Heritage_Conservation_Status_Ranks.htm. Accessed on 6 May 2021.

NMFS 2018

USFWS 1998

USFWS 2006

USFWS. 2021. *The Information, Planning, and Consultation System (IPaC System)*. https://ecos.fws.gov/ipac/

Williams, Paul, R. Thorp, L. Richardson and S. Colla. 2014. Bumble Bees of North America: An Identification Guide. Princeton University Press, 41 Willian Street, Princeton, New Jersey 08540 and 6 Oxford Street, Woodstock, Oxfordshire OX20 1TW. P. 116.

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Table D-2. Special-Status Plant Species' Potential to Occur in the BSA

Scientific Name	Common Name	Special Status[1]	Blooming Period[2]	Habitat	Potential to Occur
Acanthomintha duttonii	San Mateo thorn-mint	FE, CE, 1B.1	Apr-Jun	Chaparral, Valley and foothill grassland (serpentinite). 165 - 985 feet elevation.	**None.** There is no serpentine chaparral, and only limited ruderal grassland present in the BSA. There are two CNDDB occurrences within ten miles from the BSA, one from 1994 and1989.
Agrostis blasdalei	Blasdale's bent grass	1B.2	May-Jul	Coastal bluff scrub,Coastal dunes, Coastal prairie. 0 - 490 feet elevation.	**Moderate.** There is potentially suitable coastal bluff scrub habitat present in the BSA. There is one CNDDB occurrence from 2015, 3 miles south of the BSA.
Allium peninsulare var. *franciscanum*	Franciscan onion	1B.2	(Apr) May-Jun	Cismontane woodland, Valley andfoothill grassland (clay, serpentinite [often], volcanic). 170 – 1,000 feet elevation.	**Low.** Riparian woodlands and ruderal grassland habitats in the BSA could provide marginal habitat for this species. While there are no clay soils in the BSA,there is Rock Outcrop - Orthents Complex which may contain components of serpentinite and volcanic soils. There are eight CNDDB occurrences within ten miles of the BSA**.** The nearest CNDDB occurrence is from 2016, 5 miles to the east of the BSA.
Amsinckia lunaris	bent-flowered fiddleneck	1B.2	Mar-Jun	Cismontane woodland, Coastal bluff scrub, Valley and foothill grassland. 10 – 1,640 feet elevation.	**Moderate.** There is potentially suitable coastal bluff scrub habitatpresent in the BSA. There are five CNDDB occurrences within ten miles of the BSA. The nearest CNDDB occurrence is from 1963, eight miles north of theBSA.
Arctostaphylos andersonii	Anderson's manzanita	1B.2	Nov-May	Broadleafed upland forest, Chaparral, North Coast coniferous forest (edges, openings). 195 – 2,495 feet elevation.	**Low.** Riparian woodlands in the BSA could provide marginal habitat for this species. The nearest occurrence is less than five miles from the BSA and was last seen in 2018 (Calflora 2021).

Scientific Name	Common Name	Special Status[1]	Blooming Period[2]	Habitat	Potential to Occur
Arctostaphylos franciscana	Franciscan manzanita	FE, 1B.1	Feb-Apr	Coastal scrub. 195 -985 feet elevation.	**Low.** This species is a strict endemic on ultramafic rocks, which are not present in the BSA.The only extant occurrence is more than ten miles from the BSA in San Francisco.
Arctostaphylos imbricata	San Bruno Mountain manzanita	CE, 1B.1	Feb-May	Chaparral, Coastal scrub (rocky). 900 –1,215 feet elevation.	**Low.** Potentially suitable coastal scrub habitat is present in the BSA, but the elevation of the BSA is below this species' elevational range. There are two CNDDB occurrences within ten miles of the BSA, the nearest from 1981, and is 9 miles from the BSA.
Arctostaphylos montana ssp. *ravenii*	Presidio manzanita	FE, CE, 1B.1	Feb-Mar	Chaparral, Coastal prairie, Coastal scrub. 150 – 1,215 feet elevation.	**Low.** There is potentially suitable coastal scrub habitat present in the BSA. The nearest Consortium of California Herbaria (CCH 2021) occurrence is from 1990, more than ten miles from the BSA.
Arctostaphylos montaraensis	Montara manzanita	1B.2	Jan-Mar	Chaparral, Coastal scrub. 260 -1,640 feetelevation.	**Moderate.** There is potentially suitable coastal scrub habitat present in the BSA. There are four CNDDB occurrence within ten miles of the BSA. The nearest CNDDB occurrence is from 2014, less than two miles from the BSA.
Arctostaphylos pacifica	Pacific manzanita	CE, 1B.1	Feb-Apr	Chaparral, Coastal scrub. 1,085 feet elevation.	**Low.** There is potentially suitable coastal scrub habitat present in the BSA, however the elevation in the BSA is below this species elevational range. This species is known from one occurrence on San Bruno Mountain, within ten miles of the BSA.
Arctostaphylos regismontana	Kings Mountain manzanita	1B.2	Dec-Apr	Broadleafed uplandforest, Chaparral, North Coast coniferous forest. 1,000 – 2,395 feet elevation.	**Low.** Riparian woodlands in the BSA could provide marginal habitat for this species. The BSA is below this species elevational range. There are two CNDDB occurrences within ten miles of the BSA.

Scientific Name	Common Name	Special Status[1]	Blooming Period[2]	Habitat	Potential to Occur
Astragalus pycnostachyus var. *pycnostachyus*	coastal marsh milk-vetch	1B.2	(Apr) Jun-Oct	Coastal dunes, Coastal scrub, Marshes and swamps. 0 - 100 feetelevation.	**Low.** Potentially suitable coastal scrub habitat is present in the BSA, but there are very limited areas that are sufficiently mesic to support this species. There are two CNDDB occurrences within ten miles of the BSA.
Astragalus tener var. *tener*	alkali milk-vetch	1B.2	Mar-Jun	Playas, Valley and foothill grassland, Vernal pools. 5 - 195 feet elevation.	**None.** Playas and vernal pools are not present in the BSA and limited ruderal grassland habitat in the BSA is not likely suitable for this species. The nearest CCH occurrence is from 1868, more than ten miles from the BSA in San Francisco.
Carex comosa	bristly sedge	2B.1	May-Sep	Coastal prairie, Marshes and swamps, Valley and foothill grassland. 0 – 2,050 feet elevation.	**None.** The limited ruderal grassland habitat in the BSA is not sufficiently mesic to support this species. There is one CNDDB occurrence within ten miles of the BSA from 1866.
Centromadia parryi ssp. *parryi*	pappose tarplant	1B.2	May-Nov	Chaparral, Coastal prairie, Marshes andswamps, Meadows and seeps, Valley and foothill grassland. 0 – 1,380 feet elevation.	**Low.** Ruderal grassland in the BSA could provide marginal habitat for this species. There are two CNDDB occurrences within ten miles of the BSA. The nearest CNDDB occurrence is from 1931, three miles from the BSA.
Chloropyron maritimum ssp. *palustre*	Point Reyes salty bird's-beak	1B.2	Jun-Oct	Marshes and swamps. 0 - 35 feet elevation.	**None.** There is no suitable habitat present in the BSA. The nearest occurrence is from 1893, more than ten miles from the BSA in San Mateo (CCH 2021)
Chorizanthe cuspidata var. *cuspidata*	San Francisco Bay spineflower	1B.2	Apr- Jul (Aug)	Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub. 10 -705 feet elevation.	**High.** There is potentially suitable coastal bluff scrub and coastal scrub habitat in the BSA. There are six CNDDB occurrence within ten miles of the BSA. The nearest CNDDB occurrence is from an unknown year (2000-2010) and is three miles from the BSA.

Scientific Name	Common Name	Special Status[1]	Blooming Period[2]	Habitat	Potential to Occur
Chorizanthe robusta var. *robusta*	robust spineflower	FE, 1B.1	Apr-Sep	Chaparral, Cismontane woodland, Coastal dunes, Coastal scrub. 10 - 985 feet elevation.	**Low.** There is potentially suitablecoastal scrub habitat present in the BSA. There are two CNDDB occurrences within ten miles of the BSA, from 1899 and 1913.
Cirsium andrewsii	Franciscan thistle	1B.2	Mar-Jul	Broadleafed upland forest, Coastal bluff scrub, Coastal prairie, Coastal scrub. 0 - 490 feet elevation.	**High.** There is potentially suitable coastal bluff scrub and coastal scrub habitat present in the BSA. There are three CNDDB occurrences within ten miles of the BSA. The nearest CNDDB occurrence is from an unknown year, and is less than two miles from the BSA.
Cirsium fontinale var.*fontinales*	Fountain thistle	FE, CE, 1B.1	(Apr) May-Oct	Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland (serpentine seeps and grassland). 150 -575 feet elevation.	**None.** There is no suitable serpentine seep or grassland habitat present in the BSA. There is one CNDDB occurrence within ten miles of the BSA from 2014.
Cirsium occidentale var. *compactum*	compact cobwebby thistle	1B.2	Apr-Jun	Chaparral, Coastal dunes, Coastal prairie, Coastal scrub. 15 - 490 feet elevation.	**Low.** There is potentially suitable coastal scrub habitat present in the BSA. There is one CNDDB occurrence within ten miles of the BSA from 1957.
Collinsia corymbosa	round-headed Chinese-houses	1B.2	Apr-Jun	Coastal dunes. 0 - 65 feet elevation.	**None.** There is no suitable habitat present in the BSA. There is one CNDDB occurrence within ten miles of the BSA from 1919.
Collinsia multicolor	San Francisco collinsia	1B.2	(Feb)Mar-May	Closed-cone coniferous forest, Coastal scrub. 100 -900 feet elevation.	**Moderate.** There is potentially suitable coastal scrub habitat present in the BSA. There are eight CNDDB occurrences within ten miles of the BSA, the nearest within 2 miles of the BSA from an unknown year.

Scientific Name	Common Name	Special Status[1]	Blooming Period[2]	Habitat	Potential to Occur
Dirca occidentalis	western leatherwood	1B.2	Jan- Mar (Apr)	Broadleafed uplandforest, Chaparral, Cismontane woodland, Closed-cone coniferous forest, North Coast coniferous forest, Riparian forest, Riparian woodland.80 – 1,395 feet elevation.	**Low.** Riparian woodland and coastal scrub within the BSA could provide suitable habitat, but all known occurrences are farther inland than the BSA. There are 15 occurrences within ten miles of the BSA. The nearest CNDDB occurrence is from 2020, less than three miles from the BSA.
Eriophyllum latilobum	San Mateo woolly sunflower	FE, CE, 1B.1	May-Jun	Cismontane woodland, Coastal scrub, Lower montane coniferous forest. 150 – 1,085 feet elevation.	**Low.** Coastal scrub habitats in the BSA could provide suitable habitat, but all known occurrences are at least six miles inland. There are six CNDDB occurrences within ten miles of the BSA. Nearest CNDDB occurrence is from 2009, less than seven miles from the BSA.
Eryngium jepsonii	Jepson's coyote-thistle	1B.2	Apr-Aug	Valley and foothill grassland, Vernal pools. 10 - 985 feet elevation.	**None.** Marginal ruderal grassland habitat in the BSA is unlikely to support this species. The nearest occurrence is from 2008, more than ten miles away from the BSA at Jasper Ridge Biological Preserve (recorded by JRBP Docent).
Fritillaria biflora var. *ineziana*	Hillsborough chocolate lily	1B.1	Mar-Apr	Cismontane woodland, Valley andfoothill grassland (serpentinite). 490 feet elevation.	**None.** There is no suitable serpentine habitat present in the BSA. There are two CNDDB occurrences within ten miles of the BSA. The nearest CNDDB occurrence is from 1914 and is more than seven miles away from the BSA.
Fritillaria liliacea	fragrant fritillary	1B.2	Feb-Apr	Cismontane woodland, Coastal prairie, Coastal scrub, Valley and foothill grassland. 10 – 1,345 feet elevation.	**Moderate.** There is potentially suitable coastal scrub habitat andmarginally suitable ruderal grassland habitat present in the BSA. There are four CNDDB occurrences within ten miles of the BSA. The nearest CNDDB occurrence is from 1931, and is less than five miles from the BSA.

Scientific Name	Common Name	Special Status[1]	Blooming Period[2]	Habitat	Potential to Occur
Gilia capitata ssp. *chamissonis*	blue coast gilia	1B.1	Apr-Jul	Coastal dunes, Coastal scrub. 5 - 655 feet elevation.	**Low.** There is potentially suitable coastal scrub habitat present in the BSA. The nearest CCH occurrence is from 1934, more than ten miles from the BSA at Lake Merced.
Gilia millefoliata	dark-eyed gilia	1B.2	Apr-Jul	Coastal dunes. 5 - 100 feet elevation.	**None.** There is no coastal dune habitat present in the BSA. One CNDDB occurrence from 1903 is within ten miles of the BSA.
Helianthella castanea	Diablo helianthella	1B.2	Mar-Jun	Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland, Valley andfoothill grassland (Azonal soils, Partial Shade (often), Rocky (usually)). 195 – 4,265 feet elevation.	**Low.** There is potentially suitable coastal scrub habitat present in the BSA, but all occurrences are located farther inland than the BSA**.** The nearest occurrence is approximately 11 miles northeast of the BSA.
Hemizonia congesta ssp. *congesta*	congested-headed hayfield tarplant	1B.2	Apr-Nov	Valley and foothill grassland (sometimes roadsides). 65 – 1,835 feet elevation.	**Low.** Ruderal grassland habitat in the BSA could provide marginal habitat for this species. The nearest occurrence is approximately 8 miles north of the BSA and was last seen in 1909.
Hesperevax sparsiflora var. *brevifolia*	short-leaved evax	1B.2	Mar-Jun	Coastal bluff scrub, Coastal dunes, Coastal prairie. 0 - 705 feet elevation.	**Moderate.** There is potentially suitable coastal bluff scrub habitat in the BSA. The nearest occurrence is approximately ten miles east of the BSA and was last seen in 1970.
Hesperolinon congestum	Marin western flax	FT, CT, 1B.1	Apr-Jul	Chaparral, Valley and foothill grassland (serpentinite). 15 – 1,215 feet elevation.	**None.** There is no suitable serpentine habitat present in the BSA. There are four CNDDB occurrences within ten miles of the BSA.
Heteranthera dubia	water star-grass	2B.2	Jul-Oct	Marshes and swamps. 100 – 4,905 feet elevation.	**None.** There are no marshes nor swamps present in the BSA. There is one CNDDB occurrence within ten miles of the BSA from 1879.

Scientific Name	Common Name	Special Status[1]	Blooming Period[2]	Habitat	Potential to Occur
Horkelia cuneata var. *sericea*	Kellogg's horkelia	1B.1	Apr-Sep	Chaparral, Closed-cone coniferous forest, Coastal dunes, Coastal scrub. 35 - 655 feet elevation.	**Moderate.** There is potentially suitable coastal scrub habitat present in the BSA. There are five CNDDB occurrences within ten miles of the BSA. The nearest CNDDB occurrence is from an unknown year, less than a mile from the BSA.
Horkelia marinensis	Point Reyes horkelia	1B.2	May-Sep	Coastal dunes, Coastal prairie, Coastal scrub. 15 – 2,475 feet elevation.	**Low.** There is potentially suitablecoastal scrub habitat present in the BSA. There are two CNDDB occurrences within ten miles of the BSA. The nearest CNDDB occurrence is from 1962, five miles from the BSA.
Hypogymnia schizidiata	island rock lichen	1B.3		Chaparral, Closed-cone coniferous forest. 1,180 – 1,330 feet elevation.	**Low.** Isolated Monterey cypress trees in the BSA could provide marginal habitat for this species; the elevation in the BSA is below that of this species' elevational range. There are three CNDDB occurrences within one to two miles east of the BSA. These occurrences are all from maritime chaparral, which is absent fromthe BSA.
Lasthenia californica ssp. *macrantha*	perennial goldfields	1B.2	Jan-Nov	Coastal bluff scrub, Coastal dunes, Coastal scrub. 15 – 1,705 feet elevation.	**High.** There is potentially suitable coastal bluff scrub and coastal scrub habitat present in the BSA. The nearest CNDDB occurrence is from 2014, less than a mile from the BSA.
Layia carnosa	beach layia	FE, CE, 1B.1	Mar-Jul	Coastal dunes, Coastal scrub. 0 - 195 feet elevation.	**Moderate**. There is potentially suitable coastal scrub habitat present in the BSA. The nearest CNDDB occurrence is from 1987 and is more than eight miles south of the BSA.
Leptosiphon croceus	coast yellow leptosiphon	CE, 1B.1	Apr-Jun	Coastal bluff scrub, Coastal prairie. 35 -490 feet elevation.	**High.** There is potentially suitable coastal bluff scrub habitat present in the BSA. The nearest occurrence is located about 2 miles south of the BSA to the west of State Route 1 and was last seen in 2015.

Scientific Name	Common Name	Special Status[1]	Blooming Period[2]	Habitat	Potential to Occur
Leptosiphon rosaceus	rose leptosiphon	1B.1	Apr-Jul	Coastal bluff scrub. 0 - 330 feet elevation.	**High.** Potentially suitable coastal bluff scrub habitat is present in theBSA. There are four CNDDB occurrences within ten miles of the BSA, the nearest less than two miles south of the BSA near State Route 1.
Lessingia arachnoidea	Crystal Springs lessingia	1B.2	Jul-Oct	Cismontane woodland, Coastal scrub, Valley and foothill grassland (serpentinite, often roadsides). 195 - 655 feet elevation.	**None.** There is no suitable serpentine habitat present in the BSA. There are five CNDDB occurrences within ten miles of the BSA. Nearest CNDDB occurrence is from 2014, more than six miles away from theBSA.
Lessingia germanorum	San Francisco lessingia	FE, CE, 1B.1	(Jun)Jul-Nov	Coastal scrub. 80 - 360 feet elevation.	**Moderate.** There is potentially suitable coastal scrub habitat present in the BSA. The nearest occurrence is approximately 11 miles north of the BSA and was last seen in 1999.
Limnanthes douglasii ssp. *ornduffii*	Ornduff's meadowfoam	1B.1	Nov-May	Meadows and seeps. 35 - 65 feet elevation.	**None.** There are no meadows nor seeps present in the BSA. The nearest CNDDB occurrence is from 2011 and is four miles from the BSA.
Malacothamnus arcuatus	arcuate bush-mallow	1B.2	Apr-Sep	Chaparral, Cismontane woodland. 50 – 1,165 feet elevation.	**Low.** Riparian woodlands in the BSA could provide marginal habitat for this species. There are four CNDDB occurrences within ten miles of the BSA. Nearest CNDDB occurrence is from 2000, four miles from the BSA.
Monardella sinuata ssp. *nigrescens*	northern curly-leaved monardella	1B.2	(Apr) May-Jul (Aug-Sep)	Chaparral, Coastal dunes, Coastal scrub, Lower montane coniferous forest. 0 - 985 feet elevation.	**Low.** There is potentially suitable coastal scrub habitat present in the BSA. The nearest occurrence is about 13 miles north of the BSA and was last seen in 1933.

Scientific Name	Common Name	Special Status[1]	Blooming Period[2]	Habitat	Potential to Occur
Monolopia gracilens	woodland woollythreads	1B.2	(Feb) Mar-Jul	Broadleafed upland forest, Chaparral, Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland (serpentine). 330 – 3,935 feet elevation.	**None.** There is no suitable serpentine habitat present in the BSA. There is one CNDDB occurrence from 1949, less than five miles from the BSA.
Pentachaeta bellidiflora	white-rayed pentachaeta	FE, CE, 1B.1	Mar-May	Cismontane woodland, Valley and foothill grassland (often serpentinite). 115 – 2,035 feet elevation.	**None.** Riparian woodlands and ruderal grassland in the BSA are unlikely to support this species. This plant is only known form three occurrences, all of which are within ten miles of the BSA but are at least five miles inland.
Plagiobothrys chorisianus var. chorisianus	Choris' popcornflower	1B.2	Mar-Jun	Chaparral, Coastal prairie, Coastal scrub. 10 - 525 feet elevation.	**Moderate.** There is potentially suitable coastal scrub in the BSA, while ruderal grassland in the BSA could provide marginal habitat for this species. There are ten CNDDB occurrences within ten miles of the BSA. The nearest CNDDB occurrence is from 2002, four miles from the BSA.
Polemonium carneum	Oregon polemonium	2B.2	Apr-Sep	Coastal prairie, Coastal scrub, Lower montane coniferous forest. 0 – 6,005 feet elevation.	**Low.** There is potentially suitable coastal scrub, and marginal coastal prairie habitat present in the BSA. The nearest occurrence was last seen in 1916 and is less than six miles from the BSA.
Potentilla hickmanii	Hickman's cinquefoil	FE, CE, 1B.1	Apr-Aug	Closed-cone coniferous forest, Coastal bluff scrub, Marshes and swamps, Meadows and seeps. 35 - 490 feet elevation.	**High.** There is potentially suitable coastal bluff scrub present in the BSA. The nearest occurrence is 0.3 mile east of the BSA and was confirmed as extant on reference population surveys.

Scientific Name	Common Name	Special Status[1]	Blooming Period[2]	Habitat	Potential to Occur
Sanicula maritima	adobe sanicle	1B.1	Feb-May	Chaparral, Coastal prairie, Meadows and seeps, Valley and foothill grassland. 100 - 785 feet elevation.	**Low.** Ruderal grassland in the BSA could provide marginal habitat for this species. There is very marginal coastal prairie habitat present in the BSA that may be suitable for this species.The nearest occurrence is from 1891, approximately 17 miles from the BSA in SanFrancisco.
Senecio aphanactis	chaparral ragwort	2B.2	Jan- Apr (May)	Chaparral, Cismontane woodland, Coastal scrub	**Moderate.** Potentially suitable coastal scrub habitat is present in the BSA. The nearest CCH occurrence is from 1970, more than ten miles from the BSA in San Carlos.
Silene scouleri ssp. *scouleri*	Scouler's catchfly	2B.2	(Mar-May) Jun-Aug (Sep)	Coastal bluff scrub, Coastal prairie, Valley and foothill grassland. 0 – 1,970 feet elevation.	**High.** Potentially suitable coastal scrub habitat is present in the BSA. There are nine CNDDB occurrences within ten miles of the BSA. The nearest CNDDB occurrence is from 2016 and is less than 2 miles from the BSA.
Silene verecunda ssp. *verecunda*	San Francisco campion	1B.2	(Feb) Mar-Jul (Aug)	Chaparral, Coastal bluff scrub, Coastal prairie, Coastal scrub, Valley and foothill grassland. 100 – 2,115 square feet	**High.** There is potentially suitable coastal bluff scrub and coastal scrub habitat present in the BSA. There are five CNDDB occurrences within ten miles of the BSA. The nearest CNDDB occurrence is from 2007, less than a mile from the BSA at Devil's Slide.
Suaeda californica	California seablite	FE, 1B.1	Jul-Oct	Marshes and swamps	**None.** There are no marshes nor swamps present in the BSA. The nearest occurrence is from 1907, more than ten miles from the BSA in Palo Alto.
Trifolium amoenum	two-fork clover	FE, 1B.1	Apr-Jun	Coastal bluff scrub, Valley and foothill grassland. 15 – 1,360 feet elevation.	**Moderate.** There is potentially suitable coastal bluff scrub habitat present in the BSA. There is one CNDDB occurrence within ten miles of the BSA from 2011.

Scientific Name	Common Name	Special Status[1]	Blooming Period[2]	Habitat	Potential to Occur
Trifolium hydrophilum	saline clover	1B.2	Apr-Jun	Marshes and swamps, Valley and foothill grassland, Vernal pools. 0 – 985 feet elevation.	**None.** There is no suitable habitatpresent in the BSA. The nearest occurrence is from 1996, more than ten miles away from the BSA in Santa Clara.
Triphysaria floribunda	San Francisco owl's-clover	1B.2	Apr-Jun	Coastal prairie, Coastal scrub, Valley and foothill grassland. 35 - 525 feet elevation.	**Moderate.** There is potentially suitable coastal scrub habitat andmarginal ruderal grassland present in the BSA. There are nine CNDDB occurrences within ten miles of the BSA. The nearest CNDDB occurrence is from 1900, less than four miles away from the BSA.
Triquetrella californica	coastal triquetrella	1B.2	N/A	Coastal bluff scrub, Coastal scrub. 35 -330 feet elevation.	**Moderate.** There is potentially suitable coastal bluff scrub and coastal scrub habitat present in the BSA. The nearest occurrence is 5 miles northeast of the BSA and was last seen in 2006.

Notes:
BSA = Biological Study Area
CCH = Consortium of California Herbaria
CNDDB = California Natural Diversity Database
N/A = not applicable

[1] Special status abbreviations are defined as follows:
CE – State Endangered
CT – State Threatened
FE – Federally Endangered
FT – Federally Threatened

California Rare Plant Ranks (CRPR):
1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
CRPR Threat Ranks:
.1: Seriously threatened in California (80-100% of occurrences threatened)
.2: Moderately threatened in California (20-28% of occurrences threatened)
.3: Not very threatened in California (<20% of occurrences threatened)

[2] Months listed in parentheses denote that the plant has been infrequently observed to flower in that month.

Sources:
Calflora 2021
CCH 2021
JRBP Docent

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Appendix E List of Technical Studies and References

ABAG and MTC. 2017. Plan Bay Area 2040. http://2040.planbayarea.org/files/2020-02/Final_Plan_Bay_Area_2040.pdf. Accessed November 2021.

ARB. 2019a. California Greenhouse Gas Emissions for 2000 to 2017. Trends of Emissions and Other Indicators. https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2017/ghg_inventory_trends_00-17.pdf. Accessed November 2021.

CAL FIRE. 2007. San Mateo Fire Hazard Severity Zones in State Responsibility Area. Available: https://osfm.fire.ca.gov/media/6802/fhszs_map41.pdf.

California Department of Conservation. 2019. EQ Zapp: California Earthquake Hazards Zone Application. Available: https://www.conservation.ca.gov/cgs/geohazards/eq-zapp. Accessed October 2021.

California Department of Fish and Wildlife (CDFW). 2021a. Monthly California Natural Diversity Database (CNDDB) data download. Available: https://wildlife.ca.gov/Data/CNDDB/Data-Updates. Accessed April 2, 2021.

_____. 2021b. Rarefind 5. Metadata of CNDDB fields. Available: https://map.dfg.ca.gov/rarefind/view/RF_FieldDescriptions.htm#GLOBAL_RANK. Accessed on 6 May 2021.

_____. 2021c. Natural Communities. VegCAMP. Available: https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities#cnddb. Accessed on 15 April 2021.

_____. 2021d. Conservation. Mammals. Badger. Available: https://wildlife.ca.gov/Conservation/Mammals/Badger. Accessed on 3 June 2021.

California Department of Toxic Substances Control EnviroStor. 2021. EnviroStor Sites and Facilities. Available: https://www.envirostor.dtsc.ca.gov/public/map/?myaddress. Accessed October 2021.

California Department of Transportation (Caltrans). 2006. Pavement Tech Notes: Shoulder Backing. Accessed November 3, 2021 from https://dot.ca.gov/-/media/dot-media/programs/maintenance/documents/office-of-concrete-pavement/manuals-and-bulletins/shoulderbackingguideline-a11y.pdf.

California Department of Transportation (Caltrans). 2021a. Visual Impact Assessment Install Safety Barriers on State Route 1. Office of Landscape Architecture Studies/ D4. Oakland, CA. November 15, 2021.

California Department of Transportation (Caltrans). 2021b. Natural Environment Study. Oakland, CA. December 22, 2021.

California Department of Transportation (Caltrans). 2021c. Office of Cultural Resource Studies (OCRS) Section 106 Closeout Memo for Safety Barriers Project on State Route (SR) 1 from postmile 36.49 to 38.31 in San Mateo County. File: Safety Barriers Project, SM-1-36.49/38.31EA 0Q610, EFIS ID 0418000123. Office of Cultural Resource Studies / D4. Oakland, CA. August 4, 2021.

California Department of Transportation (Caltrans). 2021d. Construction Greenhouse Gas (GHG) Emissions Analysis. File: EA 0Q610, EFIS ID 0418000123, SM-1-36.49/38.31, Replace/Upgrade Guardrail on SR 1. Division of Environmental Planning & Engineering / D4. Oakland, CA. February 22, 2021.

California Department of Transportation (Caltrans). 2021e. Water Quality Study. EA 0Q610, Project ID 0418000123. District 4 Office of Water Quality. Oakland, CA. July 13, 2021.

California Native Plant Society (CNPS), Rare Plant Program. 2021. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org. Accessed April 2, 2021.

_____. 2021c. A Manual of California Vegetation Online. Eriophyllum staechadifolium – Erigeron glaucus – Eriogonum latifolium Herbaceous Alliance seaside woolly-sunflower – seaside daisy – buckwheat patches. Available: https://vegetation.cnps.org/alliance/583. Accessed on 21 April 2021.

_____. 2021d. A Manual of California Vegetation Online. Baccharis pilularis Shrubland Alliance: coyote brush scrub. Available: https://vegetation.cnps.org/alliance/151. Accessed on 15, April 2021.

_____. 2021e. A Manual of California Vegetation Online. Mesembryanthemum spp. – Carpobrotus ssp. Herbaceous Semi-Natural Alliance. Available: https://vegetation.cnps.org/alliance/367. Accessed on 15, April 2021.

City/County Association of Governments of San Mateo County (C/CAG). 2014. Final Airport Land Use Compatibility Plan for the Environs of Half Moon Bay Airport. September.

National Marine Fisheries Service (NMFS). 2005. Endangered and Threatened Species; Designation of Critical Habitat for Seven Evolutionarily Significant Units of Pacific Salmon and Steelhead in California; Rule. Federal Register 70: 52487-52627. Available: https://www.federalregister.gov/documents/2005/09/02/05-16389/endangered-and-threatened-species-designation-of-critical-habitat-for-seven-evolutionarily.

_____. 2021a. NMFS WCRCA Species List – NOAA Service Account. 10 February 2021. Re: Caltrans Project 04-0Q670 Montara Storm Damage. NMFSWCRCA.specieslist@noaa.gov. Official species list created.

National Oceanic and Atmospheric Administration (NOAA). 2002 (February). Magnuson- Stevens Act Provisions; Essential Fish Habitat (EFH). Final Rule. Federal Register. 50: 2343-2383.

San Mateo County. 2013a. Local Coastal Program Policies. Available: https://planning.smcgov.org/sites/planning.smcgov.org/files/documents/files/SMC_Midcoast_LCP_2013.pdf. Accessed: August 2021.

FHWA. 2019. Sustainability. Available: https://www.fhwa.dot.gov/environment/sustainability/resilience/. Last updated February 7, 2019. Accessed: November 2021.

FHWA. No date. Sustainable Highways Initiative. Available: https://www.sustainablehighways.dot.gov/overview.aspx. Accessed: November 2021.

OPC. 2018. State of California Sea-Level Rise Guidance 2018 Update. Available: https://opc.ca.gov/webmaster/ftp/pdf/agenda_items/20180314/Item3_Exhibit-A_OPC_SLR_Guidance-rd3.pdf. Accessed November 2021

San Mateo County Transportation Authority (SMCTA). 2015. Preliminary Planning Study for Highway 1 Congestion & Safety Improvement Project. San Mateo County, CA. August 2015.

San Mateo County. 1986. General Plan. San Mateo County, CA. November, 1986.

San Mateo County. 2005. San Mateo County Hazards: Earthquake Liquefaction & Shaking. Available: https://planning.smcgov.org/documents/san-mateo-county-hazards-earthquake-liquefaction-shaking. Accessed October 2021.

State of California. 2018. California's Forth Climate Change Assessment. Available: https://www.climateassessment.ca.gov/. Accessed November 2021.

State of California. 2019. California Climate Strategy. Available: https://calepa.ca.gov/wp-content/uploads/sites/6/2016/10/Climate-Documents-2015yr-CAStrategy.pdf. Accessed: November 2021.

State Water Resources Control Board. 2021. Geotracker. Available: https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=Search+GeoTracker.

U.S. Department of Agriculture (USDA). 2021. Soil Survey Staff, Natural Resources Conservation Service. Web Soil Survey. Available online at https://websoilsurvey.nrcs.usda.gov/. Accessed on 17 April 2021.

U.S. Department of Transportation (U.S. DOT). 2011. Policy Statement on Climate Change Adaptation. June. Available: https://www.fhwa.dot.gov/environment/sustainability/resilience/policy_and_guidance/usdot.cfm. Accessed: August 2019.

United States Environmental Protection Agency (EPA). Inventory of U.S. Greenhouse Gas Emissions and Sinks. Available: https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks. Accessed: August 2019.

United States Environmental Protection Agency (EPA). 2021. California Nonattainment/ Maintenance Status for Each County by year for all Criteria Pollutants. October 31, 2021.

United States Global Change Research Program (USGCRP). 2018. *Fourth National Climate Assessment*. Available: https://nca2018.globalchange.gov/. Accessed: August 21, 2019.

USGS. 2021. Mineral Resources Data System. Available: https://mrdata.usgs.gov/mrds/map-graded.html.

USFWS [United States Fish and Wildlife Service]. 1996a. Endangered and threatened wildlife and plants; determination of threatened status for the California red-legged frog. Federal Register 61(101): 25813-25833.

_____. 2008. 50 Federal Register 53492. Revised Critical Habitat for the California Red- Legged Frog. Proposed Rule. September 16.

_____. 2010: 50 CFR Part 17. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the California Red- Legged Frog. Final rule. Available online at: https://www.govinfo.gov/link/fr/75/12816?link-type=pdf.

_____. 2021a. Environmental Conservation Online System: Information, Planning and Conservation System (IPaC). Available: https://ecos.fws.gov/ipac/. Accessed 10 February 2021.

_____. 2021b. Critical Habitat for Threatened and Endangered Species Online Mapper. Available: https://fws.maps.arcgis.com/home/webmap/viewer.html?webmap=9d8de5e265ad4fe09893cf75b8dbfb77. Accessed 10 February 2021.

_____. 2021c. National Wetland Inventory. Available: https://www.fws.gov/wetlands/data/Mapper.html. Accessed 10 February 2021.

Wolk. 2016. Senate Bill No. 1386 Resource conservation: working and natural lands, the Honorable Lois Wolk author. Signed by Governor Jerry Brown September 23, 2016.

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Appendix F Comment Letters