Storm Damage Restoration Project

MARIN COUNTY, CALIFORNIA

District 4 – MRN – 1 (PM 37.2)

04-0W710/0420000281

Initial Study with Proposed Mitigated Negative Declaration

Prepared by the

State of California Department of Transportation

March 2026

General Information About This Document

What's in this document:

The California Department of Transportation (Caltrans) has prepared this Initial Study, which examines the potential environmental impacts of alternatives being considered for the proposed Project in Marin County in California. The document explains why the Project is being proposed, the alternatives being considered for the Project, the existing environment that could be affected by the Project, potential impacts of each of the alternatives, and proposed avoidance, minimization, and/or mitigation measures.

What you should do:

- Please read the document. Additional copies of the document and the related technical studies are available for review at the Caltrans District 4 office at 111 Grand Avenue, Oakland, CA 94612. This document may be downloaded at the following website: https://dot.ca.gov/caltrans-near-me/district-4/d4-popular-links/d4-environmental-docs.

- Tell us what you think. If you have any comments regarding the proposed Project, please send your written comment to Caltrans by the deadline. Submit comments via U.S. mail to: Amanda Goldsmith, District 4 Division of Environmental Science and Engineering, California Department of Transportation, 111 Grand Avenue, Oakland, CA 94612. Submit comments via email to: amanda.goldsmith@dot.ca.gov.

- A Notice of Opportunity for a Public Meeting will be filed with the California Governor's Office of Land Use and Climate Innovation State Clearinghouse. If you would like Caltrans to hold a public meeting, please contact Amanda Goldsmith by March 31, 2026. If a public meeting is requested, Caltrans has two options. The first option would be to meet with the party requesting the public meeting to directly discuss the proposed Project and/or request. If the party is satisfied and withdraws the request, Caltrans will not hold a public meeting. The second option would be for Caltrans to schedule and hold a public meeting per the initial request.

- Submit comments by the deadline: April 14, 2026.

What happens next:

After comments are received from the public and the reviewing agencies, Caltrans may 1) give environmental approval to the proposed project, 2) do additional environmental studies, or 3) abandon the project. If the project is given

environmental approval and funding is provided, Caltrans could design and construct all or part of the project.

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04-MRN-1-37.2
0420000281

Storm Damage Restoration on State Route 1 at Post Mile 37.2 in Marin County

INITIAL STUDY
with Proposed Mitigated Negative Declaration

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

THE STATE OF CALIFORNIA
Department of Transportation

03/02/2026

Lawrence Bonner
Office Chief, Office of Environmental Analysis
California Department of Transportation
CEQA Lead Agency

Date

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DRAFT

Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

State Clearinghouse Number: Pending
District-County-Route-Post Mile: 04-MRN-1-37.2
EA/Project Number: 04-0W710 / 0420000281

Project Description
The California Department of Transportation (Caltrans) proposes to restore the slope adjacent to the roadway and repair existing Asphalt Concrete pavement to prevent future slope failures on State Route 1 at post mile 37.2.

Draft Determination
This proposed Mitigated Negative Declaration is included to give notice to interested agencies and the public that it is Caltrans' intent to adopt a Mitigated Negative Declaration for this Project. This does not mean that Caltrans' decision regarding the Project is final. This Mitigated Negative Declaration is subject to change based on comments received by interested agencies and the public.

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

The Project would have no effect on agriculture and forestry resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation, utilities and service systems, and wildfire. The Project would have less than significant effect on aesthetics, air quality, biological resources, cultural resources, energy, greenhouse gas emissions, and tribal cultural resources.

With the following mitigation measure incorporated, the Project would have a less than significant effect on hydrology and water quality:

> **MM-WQ-02: Cofferdam.** Temporary dewatering and water treatment systems will be implemented to support construction activities. Dewatering will be implemented, to provide for a dry working environment within Tomales Bay.

_____ _____

Christopher Caputo
Deputy District Director
Environmental Science and Engineering
California Department of Transportation

Date

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Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) is the lead agency under the California Environmental Quality Act (CEQA) for the proposed State Route (SR) 1 Storm Damage Restoration Project (Project) and has prepared this Draft Initial Study with Proposed Mitigated Negative Declaration (ISMND).

The Project is located on SR 1 at post mile (PM) 37.2, approximately 1.2 miles south of Marshall Petaluma Road, near the unincorporated community of Marshall, in Marin County, California (Figures 1 and 2).

To prevent future slope failures, Caltrans proposes to restore the slope adjacent to the roadway and repair the existing asphalt concrete pavement. A temporary cofferdam would be utilized to isolate the construction area from the waters of Tomales bay to facilitate construction. This Project would restore the integrity of the roadway and prevent future slope washouts.

The Project is funded by the State Highway Operation and Protection Program (SHOPP) under Program Code 2.1.131 (Major Damage Program) for the 2025/2026 program year. The SHOPP Program is California's "fix-it-first" program, which funds the repair and preservation of the State Highway System, safety improvements, and some highway operational improvements. The Project total cost estimate, including capital and support costs, is approximately $2,714,000.

Figure 1. Vicinity Map.

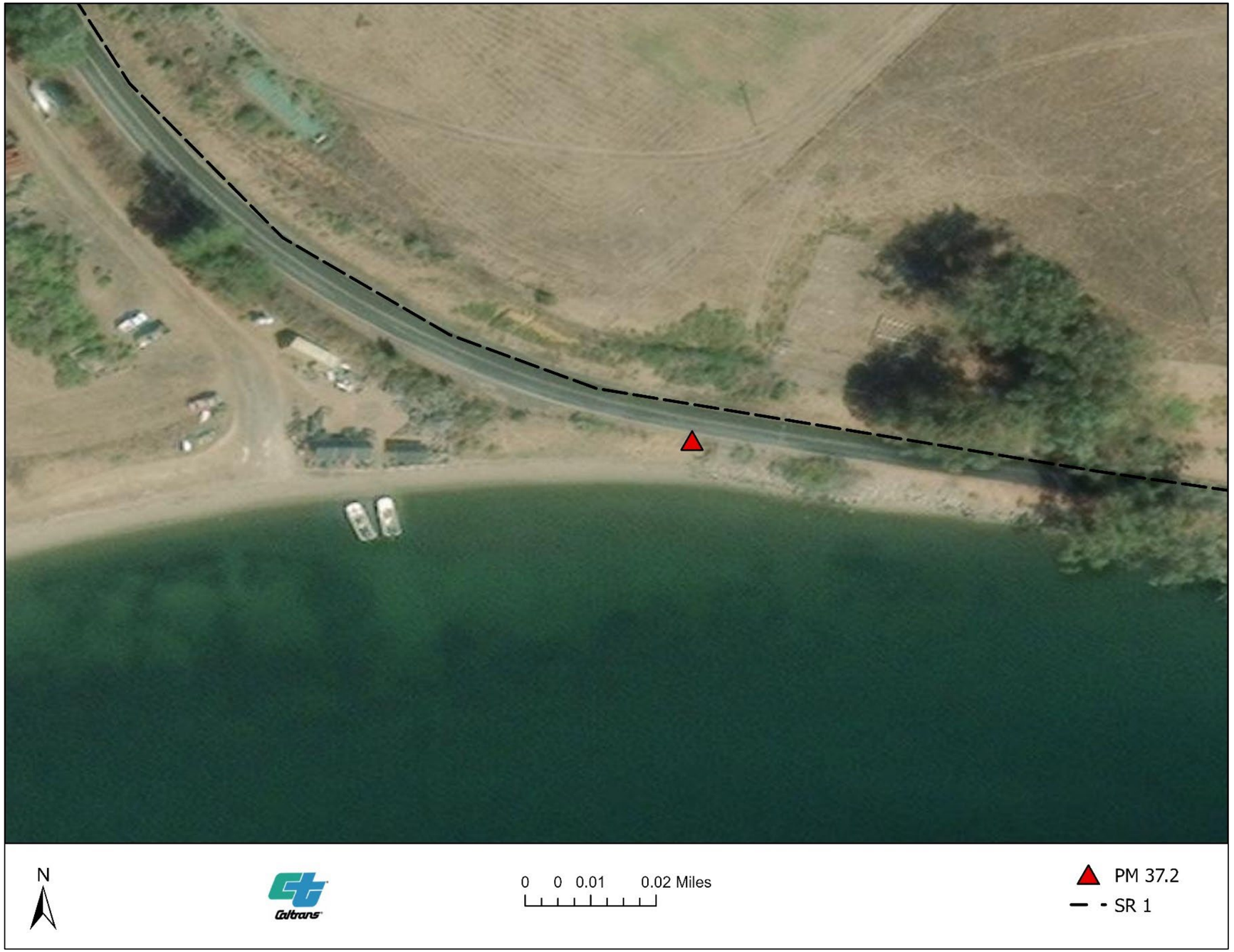

Figure 2. Project area map.

1.2 Purpose and Need

1.2.1 Purpose

The purpose of this Project is to restore the integrity of the roadway and the adjacent slope and to prevent future coastal erosion and slope washouts at this location on SR 1.

1.2.2 Need

This Project is needed due to storm-related coastal erosion that resulted in the saturation and washout of the slope adjacent to the southbound side of SR 1 along Tomales Bay. The associated damage was documented in a Damage Assessment Form (DAF) dated May 3, 2019 by Maintenance Services and Geotechnical Design. If not addressed, the roadway's stability may be compromised leading to potential lane and route closures, safety risks for motorists, and long-term damage to SR 1 infrastructure.

1.3 Project Description

The Project is located on SR 1 at PM 37.2 in Marin County and is bordered by agricultural land, open space, and rural residential uses (Figure 2). Within Marin County, SR 1 is a rural, two-lane undivided highway that stretches approximately 56 miles beginning at US Highway 101 in Manzanita and ending at the Marin-Sonoma County line near Valley Ford Road. SR 1 serves as a critical connection for the small, relatively isolated communities located along the Northern Bay Area coastline and is also part of the Pacific Coast Bicycle Route.

The Project is located along Tomales Bay, a high wave energy environment with shorelines susceptible to erosion (see Section 3.2 – Climate Change Environmental Setting). The tidal range within this area is approximately 5.8 feet, and waves can reach between 2 and 4 feet during storm events (Integral 2025).

A Damage Assessment Form (DAF) submitted by Caltrans Offices of Maintenance Services and Geotechnical Design in May of 2019 indicated that storm water from winter storms had saturated the vegetated slope below the narrow shoulder of SR 1, causing the soil to become water-laden and lose internal strength. As a result of the instability, a scarp (i.e., steep slope) approximately 20 feet wide and 3 feet deep formed along the shoreline beneath SR 1 (Figure 3).

Figure 3. Eroded slope on southbound side of SR 1.

Build Alternatives described in Section 1.4.1 are intended to address conditions identified in the DAF and restore stability to the affected slope.

1.3.1 Existing Conditions

Travel lanes on this portion of SR 1 are approximately 12-feet-wide, with 2-foot-wide paved shoulders (Table 1). There are no designated pedestrian or bicycle facilities. The structural section of the highway consists of a bonded wearing course (BWC; 0.06 feet) over asphalt concrete (AC; 0.65 feet) with a variable aggregate base (AB; 0 – 1 feet). Table 1 summarizes existing conditions.

Table 1. Traveled way, shoulder, and median geometric information.

Through Traffic Lanes		**Paved shoulder width (feet)**	
Number of lanes	*Total lane width (feet)*	*Southbound (feet)*	*Northbound (feet)*
2	12	2	2

As described in Section 1.3, a scarp is present within the Project area measuring approximately 20-feet-wide and 3-feet-deep (Figure 4). Ongoing erosion has resulted in exposure of the edge of pavement (EOP; i.e., boundary where the paved

surface ends). Directly south of the Project area, existing Rock Slope Protection (RSP) is present. The existing RSP extends approximately 45 feet parallel to the EOP and 21 feet perpendicular to the EOP. The RSP, which has a minimal footprint, predates the California Coastal Commission (CCC; i.e., placed prior to 1972; CCC 2024) and therefore was placed without the need for any permits from the Coastal Commission. The existing RSP is functioning as intended and continues to provide slope stabilization and protection of SR 1. An existing barbed-wire fence with steel fence posts is found along the southbound lane within State right of way (ROW; Figure 4).

At the Project location, the highway is superelevated or slanted (the height between the inner and outer edges of pavement are not the same). An unlined ditch is present adjacent to the northbound EOP and conveys flow in a southerly direction to an 18-inch plastic culvert (PM 37.17), which further conveys flow beneath SR 1 to Tomales Bay. The unlined ditch and culvert are in good condition. As such, no culvert work would occur as part of this Project.

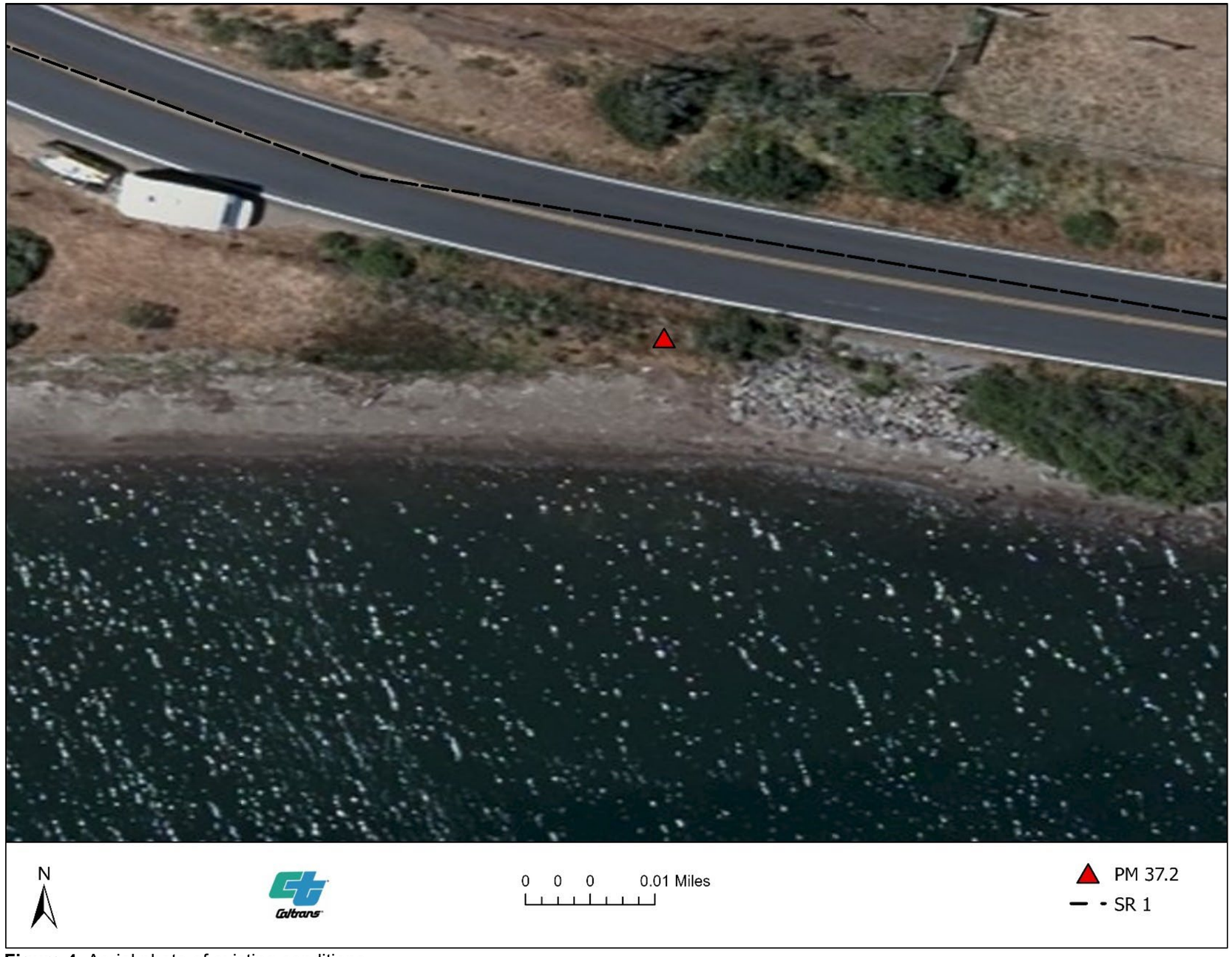

Figure 4. Aerial photo of existing conditions.

1.4 Project Alternatives

This section describes the proposed Build Alternatives developed to meet the purpose and need of the Project while avoiding or minimizing environmental impacts. The Project consists of two proposed Build Alternatives and one No-Build Alternative.

1.4.1 Build Alternatives

Alternative 1 – Rock Slope Protection

Alternative 1 proposes placing rock slope protection (RSP) to stabilize the eroded slope and protect the roadway and infrastructure from erosion (Figure 5). The RSP would provide structural support along the slope and reduce the potential for future slope and roadway instability.

Alternative 1 would place two layers of RSP (4-feet of 0.5-ton Class VII rock installed over 2-feet of 200-pound Class II rock) at a 1.5:1 slope (Figures 6 and 7). The RSP would be keyed, or placed 7.5 feet below the current ground surface, at a 1.5:1 slope at the toe of the slope (where the slope meets the flat ground; Figure 5). Prior to RSP placement, geotextile filter fabric would be placed along the toe and slope. Material from creating the key would be used as backfill before placing the RSP. The RSP would be thickest where the slope is steepest and would gradually thin out as it meets the surrounding ground. No excavation into the back of the slope would occur.

The RSP would extend a maximum of 32.5 feet downward from the EOP to the toe of slope (Figures 6 and 7). The length of RSP to be installed along the roadway is 72.5 feet. Implementation of this alternative would result in the loss of up to 12 feet of existing beach. The proposed RSP materials will be selected to blend as closely as possible with the existing RSP that exists next to the Project area. If similar colored rock is unavailable, use of rock stain would be considered.

A temporary dewatering system, using a cofferdam, is proposed to isolate the work area within the Bay and create a dry work environment for construction access and activities. For more information, see Section 1.5.1.

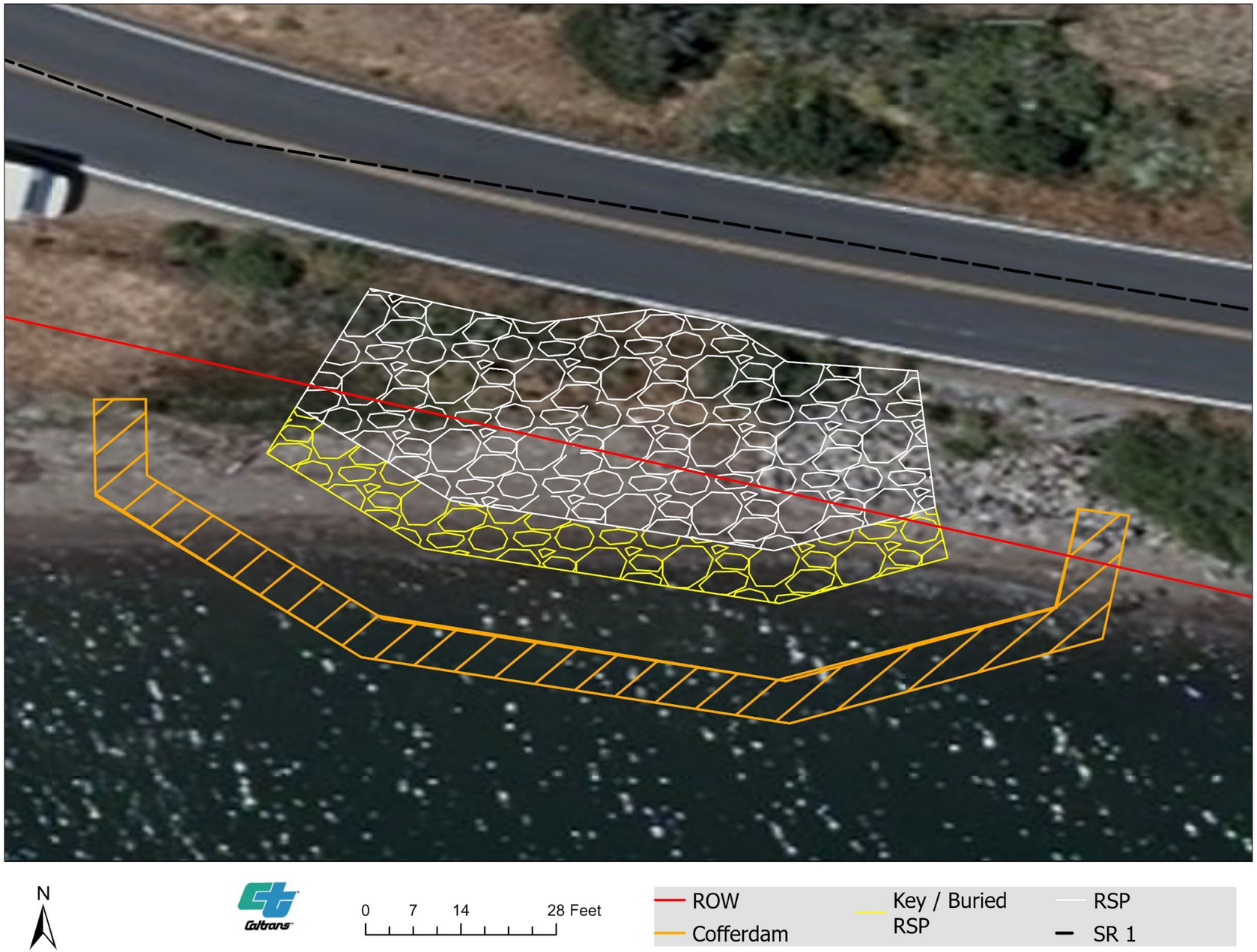

Figure 5. Alternative 1 aerial map.

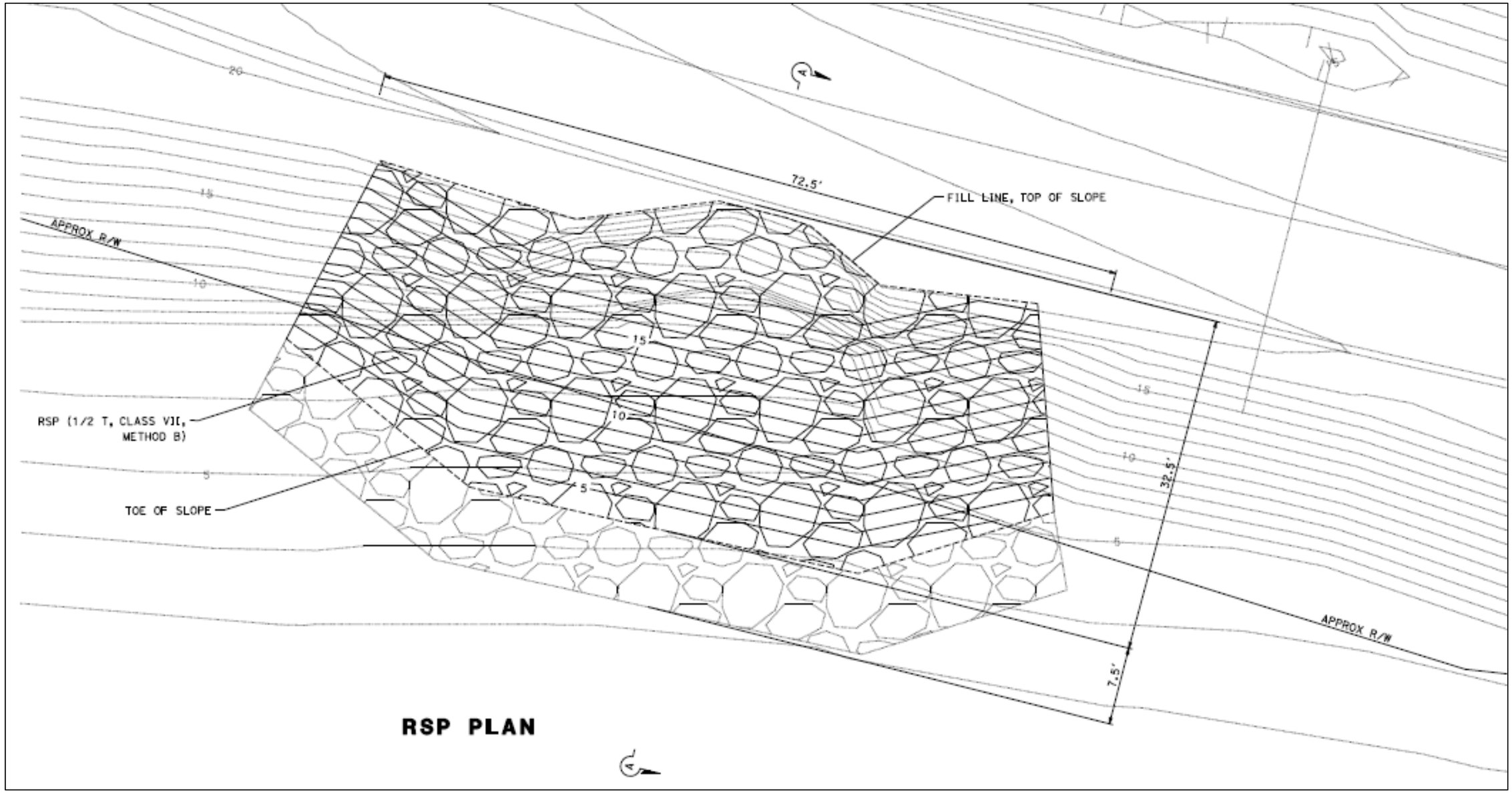

Figure 6. RSP plan overview.

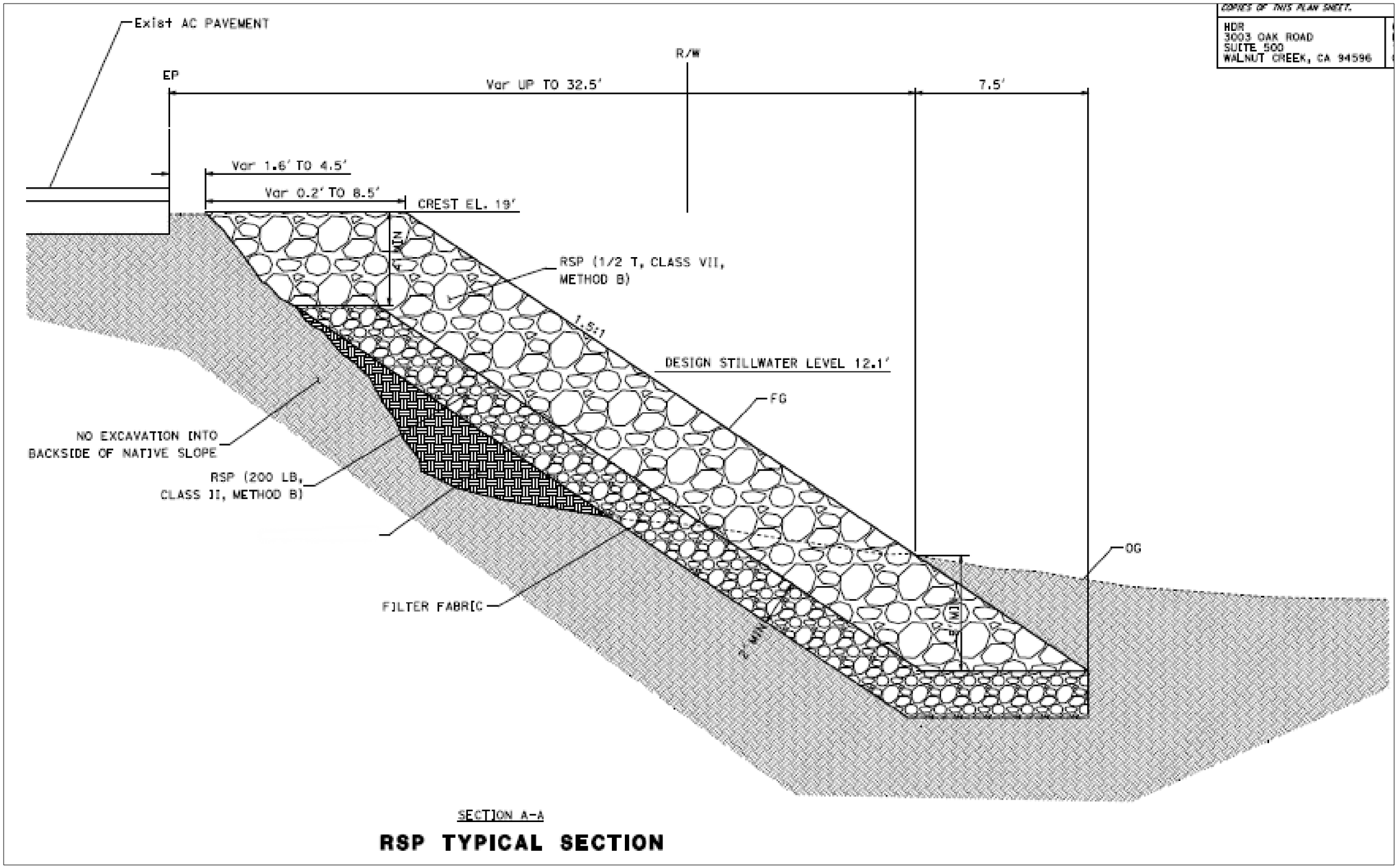

Figure 7. RSP typical cross section.

Alternative 2 – Gabion Wall with Rock Slope Protection Facade

Alternative 2 proposes placing a gabion wall with an RSP façade (Figure 8). A gabion wall is a type of earth-retaining system that consists of rectangular wire mesh baskets filled with stone.

Alternative 2 would place gabion baskets (standard plans D100A and D100B) at a 1.25:1 slope against the scarp face (Figures 9 and 10). The gabion baskets would be keyed, or placed 6 feet below the current ground surface at the toe of the slope (where the slope meets the flat ground; Figure 10). On-site excavated material from keying into the toe of slope would be used as backfill between the gabion baskets and the existing slope. To facilitate installation, using the on-site excavated material, the existing slope would be benched or stepped from the toe of slope upward to create level surfaces for the placement of the gabion baskets. The gabion baskets would be placed layer by layer on these benches, filled with 3-inch or larger rock, arranged so each successive layer is set farther back into the slope, stacked vertically, and securely wired together to form a stable retaining structure. No slope excavation would occur.

Following installation of the gabion wall, a thin layer of RSP (approximately 2 feet) would be placed over the gabion wall to minimize the engineered looking appearance of the gabion baskets and to improve aesthetics.

The gabion wall would extend a maximum of 23 feet downward from the EOP to the toe of slope (Figures 9 and 10). The length of the gabion wall to be installed along the roadway is 54.7 feet. Implementation of this alternative would result in no loss of existing beach.

A temporary dewatering system, using a cofferdam, is proposed to isolate the work area from the Bay and create a dry work environment for construction access and activities. For more information, see Section 1.5.1.

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Figure 8. Alternative 2 aerial map.

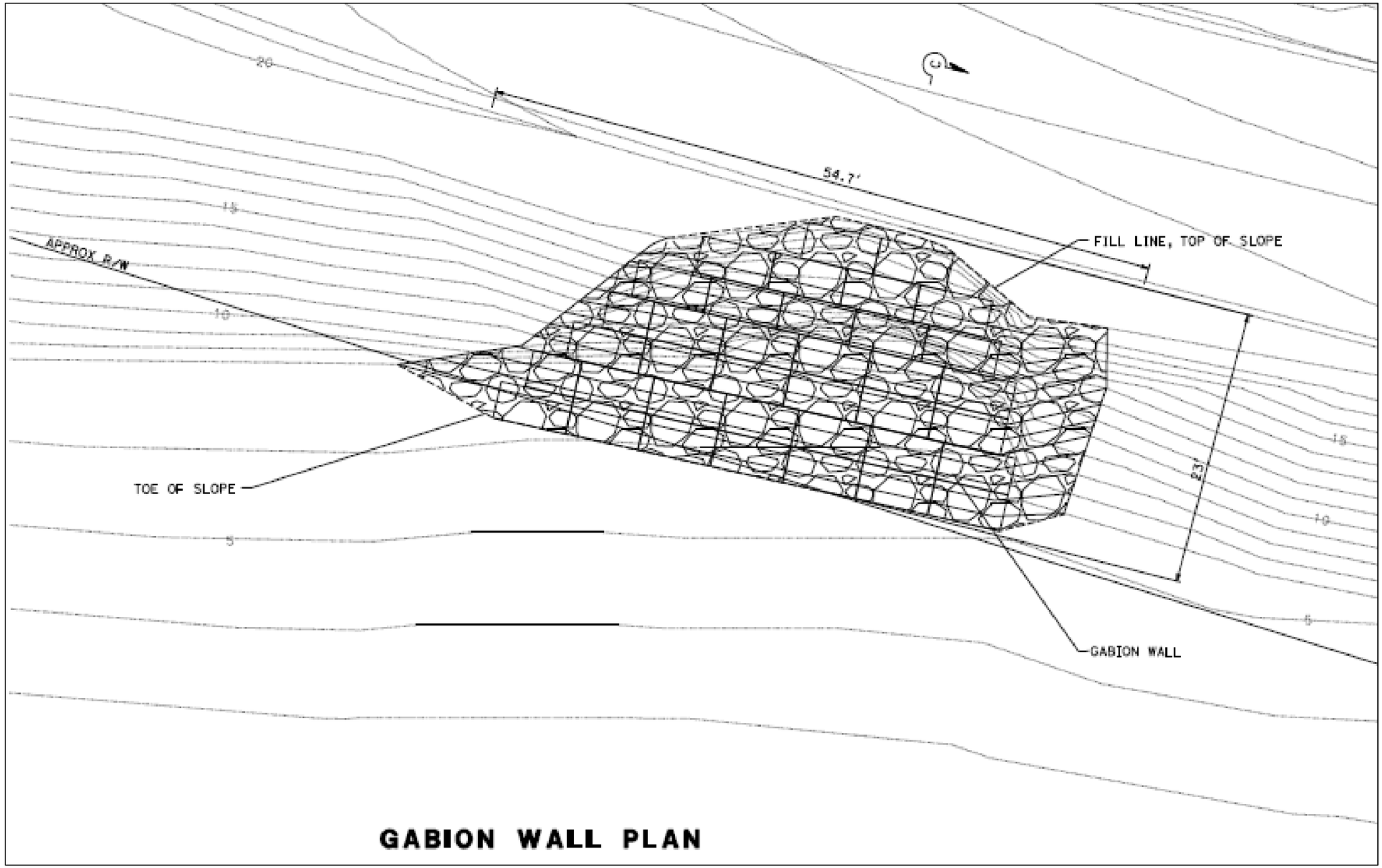

Figure 9. Alternative 2 plan overview.

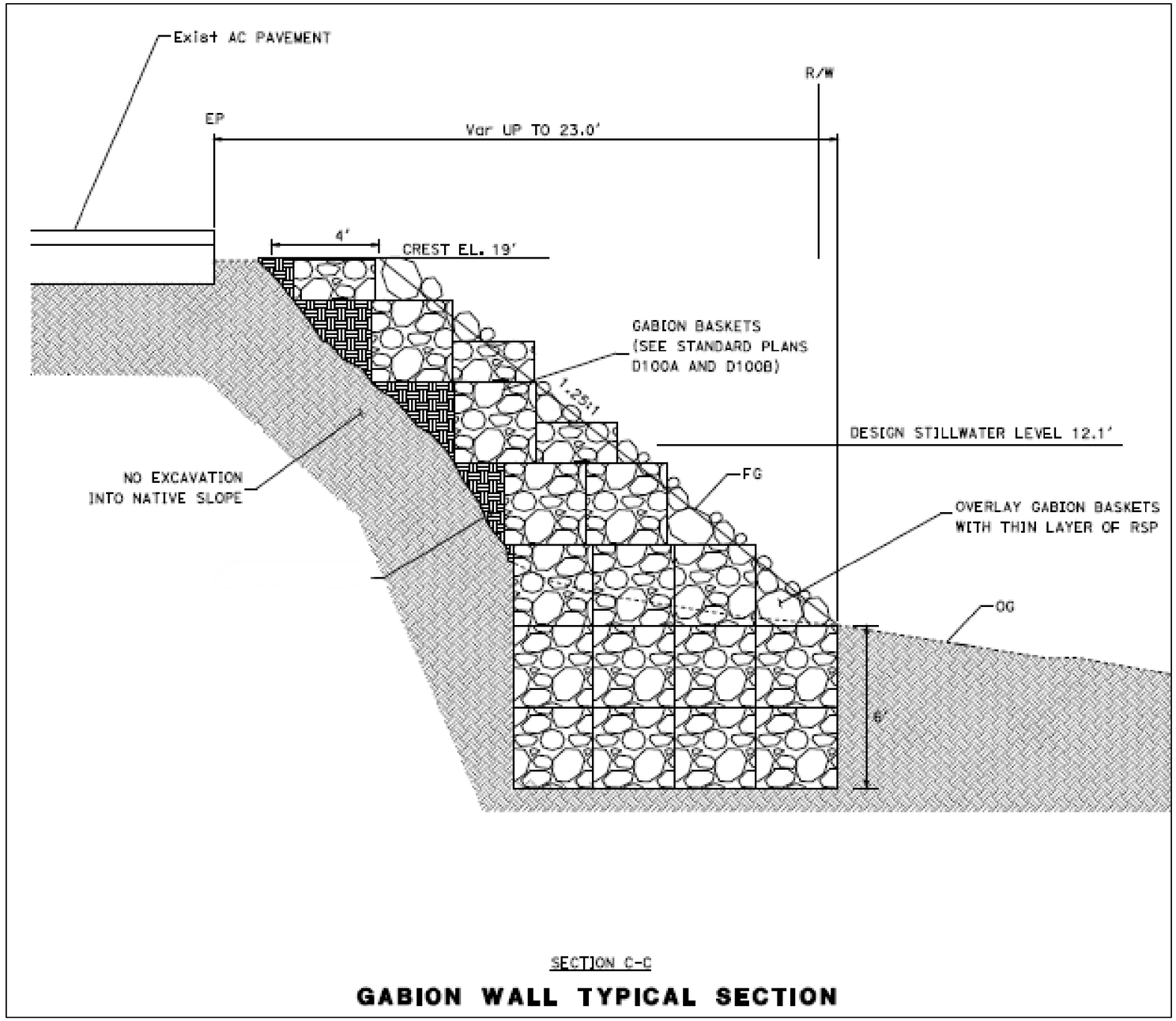

Figure 10. Alternative 2 typical cross section.

1.4.2 No-Build (No-Action) Alternative

Under the No Build Alternative, there would be no restoration of the existing roadway. If the Project is not constructed, continued and accelerated erosion of the slope is expected to occur. If not addressed, the deficiencies of this eroded area could trigger more frequent maintenance and lead to more extensive repairs, which would result in increased costs in the long term. The No Build Alternative is not a viable long-term solution to preserve the structural integrity of the road and would not satisfy the purpose and need of the Project.

1.5 Unique Features of Build Alternatives

1.5.1 Temporary Dewatering System

A temporary dewatering system, using a cofferdam, is proposed to isolate the work area and create a dry work environment for construction access and activities. Establishing a dry work area would reduce the potential for increases in turbidity. The temporary dewatering system involves the installation of an approximately 6-foot-wide and 6-foot-tall super sac cofferdam. Super sacs are large fabric containers filled with gravel, covered with impermeable material, and stacked together to create a stable barrier and maintain dry working conditions. The super sacs would be arranged in an interlocking configuration to form a continuous cofferdam perimeter. Installation would occur at low tide. Work within the cofferdam would be conducted only during periods of dry weather.

During construction, the cofferdam would be continuously dewatered with a pump into baker tanks. Once the substrate in the water settles within tanks, the water is tested to confirm water quality standards are met. If met, the water will be released back into Tomales Bay. If testing determines the baker tanks are insufficient, more extensive solutions will be implemented during construction.

For Alternative 1, the cofferdam would extend approximately 121 feet parallel to the shoreline and 57 feet beyond the EOP (Figure 11). For Alternative 2, the cofferdam would extend approximately 89 feet parallel to the shoreline and 39 feet beyond the EOP (Figure 11). The estimated area temporarily impacted by cofferdam installation would range from approximately 0.01 (Alternative 2) to 0.02 acres (Alternative 1; Table 2).

Table 2. Temporary cofferdam impacts by Build Alternative.

Build Alternative	Temporary Cofferdam Impacts (acres)
1	0.02
2	0.01

While varying in size, the proposed cofferdam, under either Build Alternative, would be similarly constructed. The super sacs would be filled with gravel and covered with

impermeable material to create a stable barrier and maintain dry working conditions. Prior to placement of the cofferdam, sharp objects, boulders, and cobbles would be removed from the bottom to provide a smooth surface and prevent water from passing beneath the structure. These objects would be removed either by hand or, if necessary, using a grapple. The cofferdam would be installed during a period of low tide to minimize the potential for fish to be present within the work area. Following completion of construction activities, the cofferdam and all associated materials would be removed. The disturbed area would naturally be restored to existing conditions.

Figure 11. Proposed placement of cofferdams under Alternatives 1 and 2.

1.6 Common Design Features of the Build Alternatives

This section discusses common design features of each Build Alternative including proposed pavement repair, fence replacement, vegetation removal, staging areas, traffic management, ROW, utilities, hydroseeding, construction schedule, and construction equipment.

1.6.1 Pavement Repair

Asphalt concrete (AC) pavement repair would be performed using a combination of crack sealing and localized dig outs to address localized intermediate and advanced pavement distress within the Project area. Distress includes longitudinal and transverse cracks in the pavement. Cracks in the existing AC pavement that are greater than 0.25 inches would be sealed to prevent water intrusion and further deterioration. Crack sealing would be performed in accordance with Caltrans Standard Specifications on crack treatments (Section 37-6).

Localized areas that display intermediate and advanced pavement distress would be repaired through dig outs. This would involve removing the existing pavement to a depth of 0.5 feet or to a depth equivalent to the thickness of the existing AC pavement (i.e., 0.65 feet). The area of removal would extend 1 foot beyond the pavement surrounding the affected area. This method ensures full removal of compromised material to provide for a long-term, effective repair.

A prime coat would be applied to where base or subbase layers are exposed prior to placement of new AC. A tack coat would be applied to all existing AC surfaces in order to promote adequate bonding between the existing pavement and the new asphalt layer. Dig outs would be backfilled with Hot Mix Asphalt (HMA) and compacted.

1.6.2 Fence Replacement

An existing wire fence with steel fence posts is located along the southbound lane in the ROW (Figure 3). As part of this Project, Caltrans would repair the fence in kind. The fence would be placed along the Caltrans ROW line.

1.6.3 Vegetation Removal

Prior to construction, preparation of the Project area would include clearing and grubbing of vegetation and loose material. Vegetation would be cleared only where necessary and would be cut above soil level, except in areas that would be permanently impacted. This would allow plants that reproduce vegetatively to resprout after construction. Clearing and grubbing of woody vegetation would occur by hand or using construction equipment such as mowers, backhoes, and

excavators. If clearing and grubbing occurs between February 1 and September 30, the biological monitor would survey for nesting birds within the areas to be disturbed.

No tree removal is anticipated. Vegetation outside of clearing and grubbing boundaries would be protected from construction activities by temporary fencing when vegetation is close to areas of construction work.

1.6.4 Staging Area

Construction staging (i.e., equipment and materials storage) would occur within the ROW on SR 1. The staging area would be established within the lane closed to traffic behind concrete jersey barrier (i.e., k-rail) for overnight storage. The staging area does not require the removal of vegetation and would be restored to existing conditions upon competition of the Project.

1.6.5 Traffic Management

A Traffic Management Data Report and Draft Lane Closure Chart Memo have been prepared to identify any major impacts or concerns. A final Traffic Management Plan (TMP) would be prepared during the Plans Specifications and Estimates (PS&E) phase to minimize construction-related delays to the traveling public and disruptions to emergency services.

Traffic management would require temporary full and lane/shoulder closures on SR 1 for the Project. Due to equipment size, a full closure would be required to install the cofferdam. As such, the cofferdam would be placed at night (11pm - 6am) on a weekday (i.e., Monday – Thursday). The placement of the cofferdam would require up to two nights of full closure. During nightwork, lighting will be directed towards the roadway to the greatest extent practicable to avoid exposing nocturnal wildlife and their habitats to excessive glare. To perform slope repair, Caltrans anticipates temporary, single lane closure and long-term one-way traffic control with temporary signals. During the single lane closure, there will be delays of up to 5 minutes and bicyclists will be allowed through. Caltrans will work with the school districts to ensure delays are minimal.

The TMP in the PS&E phase would further address potential traffic impacts as they relate to staged construction, detours, and other traffic handling concerns associated with construction of the proposed Project. It would include:

- Distribution of press releases and other documents as necessary to notify the public of upcoming road closures and detours;
- Coordination with California Highway Patrol (CHP), local law enforcement and emergency services on contingency plans;
- Utilization of portable Changeable Message Signs and Construction Zone Enhanced Enforcement Program to minimize delay to the traveling public

1.6.6 Right of Way

Construction-related activities would occur within, as well as outside of Caltrans existing right of way (ROW). Two temporary ROW acquisitions (i.e., Temporary Construction Easements [TCEs]) would be required for construction-related activities and/or access (Table 3; Figures 12 and 13). A TCE is needed for APN 106-050-12 for construction activities and access, while a TCE is needed for APN 106-050-09 for access only.

Table 3. Assessor Parcel Number (APN) information for project required Temporary Construction Easements (TCEs).

Easement Type	Use	Assessor Parcel Number (APN)
TCE	Single family, residential	106-050-09
	Commercial	106-050-12

Figure 12. Assessor Parcel Number (APN) information for required Temporary Construction Easements (TCEs) with Alternative 1 overlain.

Figure 13. Assessor Parcel Number (APN) information for required Temporary Construction Easements (TCEs) with Alternative 2 overlain.

1.6.7 Utilities

Within the Project area, there are overhead AT&T utility lines. Proposed work under this Project would not result in any conflicts or relocations of existing utilities.

1.6.8 Hydroseeding

Erosion control seeding and similar measures (e.g., dry seed application, hydromulch, and bonded fiber matrix) would be implemented to all areas of disturbance beyond paved areas. After placement of the RSP, void spaces would be filled with a mixture of rock fragments no larger than 3 inches in diameter, and the surface would be covered with native topsoil above the high tide line. Hydroseeding of RSP with native grasses and shrubs above the high tide line would occur to minimize the visual impact of newly installed RSP and blend with the surrounding shoreline.

1.6.9 Construction Schedule

Construction would require approximately 100 working days and is anticipated to occur between late spring and early autumn 2028. While most construction-related activities would take place during daytime hours, the cofferdam would be placed at night. The construction window for in-water work would occur between May and November. Prior to placing the cofferdam, construction submittals and mobilization would occur. Mobilization includes the process of bringing resources, equipment, and personnel to the Project site. This would include vegetation removal along the slope and prepping the site for cofferdam placement (Sections 1.5.1 and 1.6.1).

Nightwork would be limited wherever possible. If nightwork must be performed, lighting will be directed towards the roadway to the greatest extent practicable to avoid exposing nocturnal wildlife and their habitats to excessive glare.

1.6.10 Construction Equipment

Construction-related equipment may include, but is not limited to, a crane, excavators, loader, dump trucks, concrete truck, pickups, low boy tractor trailer transport, changeable message sign, arrow boards, light towers, and traffic signal system.

1.7 Comparison of Alternatives

Both Build Alternatives meet the purpose and need of the Project. Implementing the improvements described above would restore the integrity of the roadway and the adjacent slope on SR 1. Both Build Alternatives would prevent future coastal erosion and slope washouts.

Both Build Alternatives are anticipated to cost approximately $2.7 million to construct and take approximately 100 working days. Construction is anticipated to be completed in about one season.

While both Build Alternatives would satisfy the purpose and need of the Project, Alternative 2 occupies a smaller footprint and would result in no beach encroachment. In comparison, Alternative 1 would result in the loss of up to 12 feet of existing beach.

Under the No Build Alternative, the roadway would remain in its current condition. If the proposed Project is not constructed, continued storm seasons could cause highway failure, and the structural integrity of the highway would not be preserved. This Alternative would not satisfy the purpose and need of the Project.

1.8 Alternatives Considered but Eliminated from Further Discussion

This section discusses Alternatives considered but eliminated from further discussion. This includes a discussion of optional wave buffering strategies which were considered to be paired with any of the proposed Build Alternatives (see Section 1.8.2).

1.8.1 Eliminated Alternatives

Alternative A – Cast In Place Wall with RSP Façade

A cast-in-place (CIP) wall with an RSP facade would have provided a reduced footprint. Alternative A would have required a thin layer of RSP to be placed in front of the CIP wall. This proposed design would have maintained the original beach width.

This Alternative was considered by the Project development team (PDT) but rejected as the CIP wall would require significant excavation into the slope, likely including under the road prism. Proposed activities would result in greater environmental impacts to non-renewal resources and extensive consultation. This would significantly increase Project costs and cause schedule delays.

Alternative B –Soil Nail Wall with Aesthetic RSP or Grouted RSP Facade

A soil nail wall (SNW) is a type of earth-retaining system where the soil nails function as passive reinforcing elements and are installed and grouted in drilled holes to form a composite mass (Caltrans 2021). A SNW would have been placed at a near vertical slope and would have been designed to match the adjacent slope faces. Traditional RSP or a grouted RSP facade could have been incorporated over the face of the SNW to improve the aesthetic appearance. With a SNW, the original beach width would have been maintained.

This alternative was considered by the PDT but rejected as the SNW would require anchoring into the existing slope. Proposed activities would result in greater environmental impacts to non-renewal resources and extensive consultation. This would significantly increase Project costs and cause schedule delays. Further, soil nails may become susceptible to corrosion with repeat exposure to saline water.

Alternative C - Sheet pile with RSP Façade and Biotechnical Rolls

A sheet pile wall is a type of non-gravity cantilever earth-retaining system that contains vertical structural elements embedded below grade. The sheet pile wall would have had a relatively minimal footprint, and the face of the wall would have been covered with a thin layer of RSP to improve aesthetics.

Biotechnical rolls above the wall were also discussed as part of this Alternative. Biotechnical rolls would have consisted of soil wrapped in erosion control fabric layers stacked upon each other running across the slope. Willows and other native plants would have been planted into the biotechnical rolls and once established, could have provided erosion protection against lower levels of wave action.

This Alternative was considered by the PDT but rejected as pre-drilling may be required before placing sheet piles, which would result in greater environmental impacts to non-renewal resources and extensive consultation. This would significantly increase Project costs and cause schedule delays. Further, little available literature indicates the exact level of protection against measured wave energy that biotechnical rolls provide. The effective level of protection is often dependent on how well vegetation can establish. Plants may not effectively establish at the Project location without a regular water supply.

Alternative D – RSP and Biotechnical Rolls

This Alternative proposes a hybrid solution that would have placed RSP and biotechnical rolls on the upper segment of the slope. The proposed RSP slope would have been limited to a 1.5:1 slope with a minimum required thickness for slope stability and, therefore, might encroach on the existing beach.

This alternative was considered by the PDT but rejected as little research is available indicating the exact level of protection against measured wave energy that biotechnical rolls provide.

1.8.2 Optional routine Wave Buffering Strategies

Coarse beach placement paired with a sediment retention feature installed offshore in the subtidal zone were proposed as an optional wave buffering strategy to accompany any of the proposed Alternatives (Section 1.8.1). Placing coarse beach would allow wave energy to dissipate over a broader area. To combat the placed coarse beach from migrating overtime and necessitating periodic renourishment, a

sediment retention feature would be incorporated as well. The sediment retention feature would further aid in attenuating wave energy.

Two sediment retention features were considered:

- The first was an artificial oyster reef. Artificial oyster reefs are typically constructed from materials such as concrete, oyster shells, and limestone and are designed with complex surfaces including crevices and voids that facilitate oyster recruitment and habitat formation for a range of marine species. Once established, oyster reefs act as submerged breakwaters, dampening wave energy and fostering sediment deposition landward of the structure, thereby helping to retain beach material. In addition to wave buffering, they contribute to improved water quality and increase biodiversity.

- The other was the construction and placement of geotubes. Geotubes are large, cylindrical geotextile containers, typically around 6 feet in diameter, filled with sand or dredged material. Like oyster reefs, geotubes function as submerged breakwaters, dampening wave energy as it approaches the shoreline. They create calm zones that promote sediment accumulation landward of the structure.

These optional routine wave buffering strategies were considered but ultimately rejected because they are outside the scope and budget of the proposed Project, would require modification to a substantially larger section of the beach, and lack sufficient case studies demonstrating effectiveness in similar coastal settings.

1.9 Project Features Included in All Build Alternatives

This Project contains a number of standardized Project Features (PFs) that are employed on most, if not all, Caltrans projects and were not developed in response to any specific environmental impact. Project Features (PFs) are separate from Avoidance and Minimization Measures (AMMs), which directly relate to impacts resulting from the proposed Project. AMMs are discussed separately in each environmental section of Chapter 2 and listed in Appendix C. Refer below for a list of PFs for this Project.

PF-AES-01: Vegetation. Vegetation outside of clearing and grubbing boundaries shall be protected from construction activities by temporary fencing when vegetation is close to construction work.

PF-AES-02: Place staging areas to minimize impact. If staging areas cannot be placed on pavement, they should be located where they do not require the removal of any weedy vegetation or cause the compaction of any tree roots.

PF-AES-03: Tree Pruning. Prune trees under supervision of certified arborist: Where the pruning of trees is required to accommodate construction operations, pruning must be under the supervision of a certified arborist.

PF-AES-04: Shield construction materials and equipment. Construction materials and equipment should be stored in a screened staging area beyond direct view of the motoring public and residential properties to the extent feasible.

PF-AQ-01: Contractor Air Quality Compliance. The contractor shall adhere to Caltrans Standard Specifications for Construction, Sections 14.9-02 and 7-1.02c, which require contractor compliance with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.

PF-BIO-01: Construction Site Management Practices. The following site restrictions will be implemented as part of the Project:

a. Enforcing a speed limit of 15 miles per hour in the Project footprint in unpaved and paved areas to reduce dust and excessive soil disturbance.
b. Locating construction access, staging, storage, and parking areas within the Project footprint outside any designated ESA. Access routes, staging and storage areas, and contractor parking will be limited to the minimum necessary to construct the proposed Project. Routes and boundaries of roadwork will be clearly marked before initiating construction or grading.
c. Certifying, to the maximum extent practicable, borrow material is nontoxic and weed free.
d. Enclosing food and food-related trash items in sealed trash containers and removing them from the site at the end of each day.
e. Prohibiting pets from entering the Project footprint area during construction.
f. Prohibiting firearms within the Project site, except for those carried by authorized security personnel or local, state, or federal law enforcement officials.
g. Maintaining equipment to prevent the leakage of vehicle fluids such as gasoline, oils, or solvents, and developing a Spill Response Plan. Hazardous materials such as fuels, oils, and solvents will be stored in industry or manufactured approved container in a designated location that is at least 50 feet from aquatic habitats.

PF-BIO-02: Vegetation Removal. Vegetation that is within the cut and fill line or growing in locations where permanent structures will be placed will be cleared. Vegetation will be cleared only where necessary and will be cut above soil level, except in areas that will be permanently impacted or excavated. This will allow plants that reproduce vegetatively to resprout after construction. Clearing and grubbing of woody vegetation will occur by hand or using construction equipment

such as mowers, backhoes, and excavators. If clearing and grubbing occurs between February 1 and September 30, the biological monitor will survey for nesting birds within the areas to be disturbed (including a perimeter buffer of 50 feet for migratory birds and 300 feet for raptors) before clearing activities begin. All nest avoidance requirements of the MBTA and California Fish and Game Code will be observed, such as establishing appropriate protection buffers around active nests until young have fledged. Cleared vegetation will be removed from the Project footprint to prevent attracting animals to the Project site.

PF-CUL-01: Unanticipated Discovery. In the event that archaeological resources (sites, features, or artifacts) or Tribal Cultural Resources (as defined by FIGR and CEQA) are exposed during construction activities, all construction work occurring within 60 feet of the find shall immediately stop until a qualified archaeologist, that meets the Secretary of the Interior Professional Qualifications for Archaeology, can evaluate the significance of the find to determine, in consultation with the FIGR's Tribal Historic Preservation Officer (THPO), whether or not additional study is warranted.

PF CUL-02: Inadvertent Discovery. If Caltrans PQS determines cultural materials contain human remains, including but not limited to cremated or fragmented 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' Cultural Resources Studies Office will contact the County Coroner. Pursuant to CA PRC Section 5097.98, if the remains are thought by the coroner to be Native American, the coroner will notify the NAHC, which will then notify the Most Likely Descendent. Caltrans, District 4, Cultural Resources Studies Office will 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.

1.10 Discussion of the NEPA Categorical Exclusion

This document contains information regarding compliance with the California Environmental Quality Act (CEQA) and other state laws and regulations. Separate environmental documentation, supporting a Categorical Exclusion (CE) determination, has been prepared in accordance with the National Environmental Policy Act (NEPA). When needed for clarity, or as required by CEQA, this document may contain references to federal laws and/or regulations (CEQA, for example, requires consideration of adverse effects on species identified as a candidate, sensitive, or special-status species by the U.S. National Marine Fisheries Service [NMFS] and the U.S. Fish and Wildlife Service [USFWS]—that is, species protected by the Federal Endangered Species Act [FESA]).

1.11 Permits and Approvals Needed

Permits, licenses, agreements, and certifications required for Project construction are listed in Table 4. For a summary of early coordination, please see Chapter 4.

Table 4. Permits and approvals needed for the Project.

Agency	Permit/Approval	Status
CCC	*Consolidated Coastal Development Permit (CDP)*	Permit application to be submitted at 65% PS&E **Target submittal:** 10/01/2026
Marin County Local Coastal Program (LCP)	*Approval of CDP consolidation*	**Approval received:** 11/20/2025
Regional Water Quality Control Board (RWQCB)	*Water Quality Certification (Section 401)*	Permit application to be submitted during PS&E **Target submittal:** 07/15/2026
United States Army Corp of Engineers (USACE)	*Nationwide Permit (Section 404)*	Permit application to be submitted during PS&E. **Target submittal:** 07/15/2026
NOAA Fisheries	**Letter of Concurrence (LOC)*	Permit application to be submitted during PS&E. **Target submittal:** 03/06/2026
USFWS	**LOC*	Biological Assessment (BA) to be submitted during PS&E. **Target submittal:** 03/02/2026
United States Coast Guard (USCG)	*Navigable Water (Section 10)*	To be submitted with USACE Section 404 during PS&E. **Target submittal:** 07/15/2026

*This decision was documented via a Caltrans NEPA Process Improvement Team (NPIT) memo signed February 12, 2026.

Chapter 2 CEQA Evaluation

2.1 CEQA Environmental Checklist

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

- **No Impact:** Indicates no physical environmental change from existing conditions.
- **Less than Significant Impact:** Indicates the potential for an environmental impact that is not significant with or without the implementation of AMMs.
- **Less than Significant Impact with Mitigation Incorporated:** Indicates the potential for a significant impact that would be mitigated with the implementation of a mitigation measure (MM) to a level of less than significance.
- **Potentially Significant Impact:** Indicates the potential for significant and unavoidable environmental impact.

2.1.1 Aesthetics

Considering the information in the Visual Impact Assessment (VIA) Memorandum dated October 3, 2025, the following significance determinations, except as provided in Public Resources Code Section 21099, have been made.

Question—Would the project:	CEQA Significance Determinations for Aesthetics
a) Have a substantial adverse effect on a scenic vista?	**Less Than Significant Impact**
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	**Less Than Significant Impact**

Question—Would the project:	CEQA Significance Determinations for Aesthetics
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	**Less Than Significant Impact**
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	**No Impact**

Affected Environment

The Project is located within a highly scenic landscape characterized by Tomales Bay. The studied segment of SR 1 (PM 32.7) runs along the shoreline just feet above the water, providing expansive views of the bay and across the water to Point Reyes National Seashore and Tomales Bay State Park. The Project area is partially visible to motorists traveling north and south on SR 1. The bay is a popular destination for kayaking, clamming, boating, and sightseeing.

The visual setting is predominantly rural and coastal. The surrounding landscape remains largely undeveloped and consists of rolling grasslands, rocky outcroppings, and wooded valleys. Scattered, mostly rustic residences are present, as well as coastal terraces of grassland and coyote brush with pockets of California bay trees in moist, shady canyons.

The Project area lies within Environmental Protection Agency (EPA) Level IV Region 6o (i.e., Marin Hills). This ecoregion consists of mountains and hills situated between San Francisco Bay and the San Andreas Fault zone. Vegetation within the ecoregion consists of coast live oak, annual grasslands, coastal scrub, tanoak, and Douglas-fir.

Although not *Officially Designated*, the entirety of SR 1 is Eligible for *State Scenic Highway* status. Numerous scenic resources occur in proximity to the Project area including the Marconi Conference Center State Historic Park, Tomales Bay, and Point Reyes National Seashore.

The relationship between land and water is a defining element of the Project area's high visual quality. The interplay of natural features – including shoreline, open water, vegetation, and topography – creates a visually cohesive landscape. The

Project area's visual characteristics are defined by a high degree of intactness, unity and vividness within the surrounding environment.

Viewer sensitivity within the Project area is generally high. Viewers include motorist travelers on SR 1, residents just south of the Project area, and recreational users who access the Bay from the beach or water. Viewpoints within the Project area include clear views of and across Tomales Bay.

To analyze the potential impacts on visual/aesthetic resources, an Area of Visual Effect (AVE) was established (Figure 14). Further, simulations were developed to view potential impacts (Figure 15).

Figure 14. Area of Visual Effect (AVE).

Figure 15. Visual simulation of the Project area under each Build Alternative (Middle simulation = Alternative 1; Bottom simulation = Alternative 2). Top image is existing conditions.

Environmental Consequences

Following guidance outlined in the publication *Guidelines for the Visual Impact Assessment of Highway Projects*, published by the Federal Highway Administration (FHWA; 2015), the visual impact of each proposed Build Alternative was evaluated.

Temporary Impacts

Viewer sensitivity is high due to the scenic quality of the corridor. For both Build Alternatives, temporary visual impacts would occur during construction, including the presence of construction equipment, material staging, signage, and potentially temporary lighting. These effects would be short-term and reversible, with no lasting alteration to the landscape's visual quality.

Permanent Impacts

Alternative 1

For Alternative 1, proposed work would not introduce any new elements into the surrounding landscape. This is primarily due to the presence of existing RSP adjacent to the Project area. Due to the large footprint (32.5 feet from the edge of pavement) and projection beyond the existing slope (1:1), the Build Alternative would result in permanent visual effects. Although the entire beach is submerged at high-tide, the proposed RSP would limit movement along the beach at mid-tide.

The level of visual impact varies depending on the viewer's location. For travelers approaching from the south, the RSP would be fully visible in the distance. However, from that distance the geometric projection on to the beach would be less noticeable. For a traveler looking from the road to the west, their views to and across Tomales Bay would not be interrupted. For neighbors, the proposed Project elements would be viewed from a distance, which is anticipated to lessen the impact of the RSP projecting on the beach. Recreational Users would experience the largest visual impact. Due to the proposed Project footprint associated with the alternative, Alternative 1 would be conspicuous compared to the existing features.

The RSP footprint of Alternative 1 reduces visual quality by disrupting the consistent geometric form that enhances the unity of the shoreline. Taking into account the varying level of impact, overall Alternative 1 would have moderate adverse visual impacts.

Alternative 2

For Alternative 2, proposed work would not introduce any new elements into the surrounding landscape, nor would it affect views to and across Tomales Bay. This is primarily due to the presence of the existing RSP adjacent to the Project area.

The level of visual impact varies depending on the viewer's location. Overall, Alternative 2 would have less visual impact compared to Alternative 1 because the

footprint of Alternative 2 would be consistent with the geometry of the existing RSP just south of the Project area. Further, proposed work would not encroach onto the beach. Neighbors and Recreational Users viewing the Project from their homes or from the water would see Alternative 2; however, due to the proposed smaller footprint, the Build Alternative would not be visibly prominent.

In the context of this specific shoreline, Alternative 2 is consistent with the geometry of the existing RSP within the project area. Thus, proposed work has the potential to increase visual unity.

Discussion of impacts under each of the following CEQA checklist questions is broken up by Build Alternative.

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

Alternative 1 would not have an adverse effect on a scenic vista, nor would it disrupt views to or across the Bay. Due to the proposed large footprint and consequent break in geometry from the existing RSP slope, adverse visual effects are anticipated. Impacts are greatest for viewers looking toward the shore from the water.

Alternative 2 would not have an adverse effect on a scenic vista to or across Tomales Bay.

b) <u>Less than Significant Impact</u>

For Alternative 1, when viewing the Project area from the Bay or beach, the scale and geometry of the proposed RSP would disrupt the scenic panorama.

Alternative 2 would not have an adverse effect on a scenic resource.

c) <u>Less than Significant Impact</u>

Alternative 1 would degrade the existing visual character and quality of public views. The degree of degradation varies depending on where the viewer is located with a higher level of degradation from the beach or water.

Alternative 2 would not substantially degrade the existing visual character or quality of public views of the site or its surroundings. As proposed, the alternative is consistent with the materials and geometry of the existing conditions. Further, the alternative would be consistent with the RSP immediately south of the Project area.

d) <u>No impact</u>

Neither Build Alternative would create a new source of light or glare.

Avoidance, Minimization, and/or Mitigation Measures

Regardless of the alternative that will ultimately be chosen, the Project has been determined to have a less than significant impact on aesthetics. Therefore, no mitigation is proposed. Caltrans anticipates incorporating the following Avoidance and Minimization Measures (AMMs). All proposed AMMs are listed here and in Appendix C.

AMM-AES-01: Color Treat or Select RSP Material for Compatible Colors. The sourcing/availability of local stone that mimics the appearance of the existing RSP will be investigated. Stones of highly contrasting color should be avoided. If similarly colored rocks are not available, use of Rock Stain shall be considered.

AMM-AES-02: Round Grade Transitions at Hinge Points. Round top and bottom of embankments and slopes to produce topographic geometry that has a natural appearance.

AMM-AES-03: Revegetate Disturbed Areas. Apply erosion control seeding and similar measures to all areas of disturbance where they are beyond paved areas. Hydroseeding of RSP above the high tide line will help minimize the visual impact of newly installed RSP and blend with the surrounding shoreline.

AMM-BIO-06: Nighttime Restrictions/Lighting. Nightwork would be limited wherever possible. If nightwork must be performed, lighting will be directed towards the roadway to the greatest extent practicable to avoid exposing nocturnal wildlife and their habitats to excessive glare.

AMM-BIO-09: Replant, Reseed, and Restore Disturbed Areas. Caltrans will restore temporarily disturbed areas to the maximum extent practicable. Exposed slopes and bare ground will be reseeded with native grasses and shrubs to stabilize and prevent erosion. Where disturbance includes the removal of trees and woody shrubs, native species will be replanted, based on the local species composition.

2.1.2 Agriculture and Forestry Resources

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

forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Considering data found within the DOC Division of Land Resource Protection's (DLRP) California Williamson Act Enrollment 2024 dataset and Farmland Mapping and Monitoring Program (FMMP; California Important Farmland Finder 2020) dataset, the following significance determinations have been made:

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

Affected Environment

The Project is located in an area that does not contain forest land, timberland, or lands zoned for timber production. As such, the proposed Project would not affect forest land or forestry resources.

Within the Project area, there is no Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. No lands subject to Williamson Act contracts occur within the Project area. Just outside of the Project footprint (north of SR 1), one

parcel is part of a conservation easement (nonprime farmland) and is enrolled in the Williamson Act (Figure 19).

The Project area is mapped as Farmland of Local Importance (Figure 17); however, the site is not currently used for agricultural production and consists of developed and previously disturbed areas associated with existing infrastructure and land uses. The proposed Project would not result in the conversion of active agricultural land to non-agricultural use, nor would it interfere with ongoing agricultural operations.

Land adjacent to the Project area is predominantly low-density rural land and is classified as Grazing Land (0.1 acres), Other Land (59 acres) and Farmland of Local Importance (5,454 acres; Figure 18). Less than one mile south of the Project site is the town of Marconi, classified as *Urban and Built-up Land*. Approximately 0.2 miles north of the Project site, development along Tomales Bay begins toward Marshall. *Urban and Built-up Land* immediately north and south of the Project site totals approximately 67 acres.

As noted in Section 2.1.1, the surrounding landscape remains largely undeveloped and consists of rolling grasslands, rocky outcroppings, and wooded valleys. Scattered, mostly rustic residences are present, as well as coastal terraces of grassland and coyote brush with pockets of California bay trees in moist, shady canyons.

Figure 16. Land enrolled in Williamson Act. Land just north of PM 37.2 is non-prime farmland.

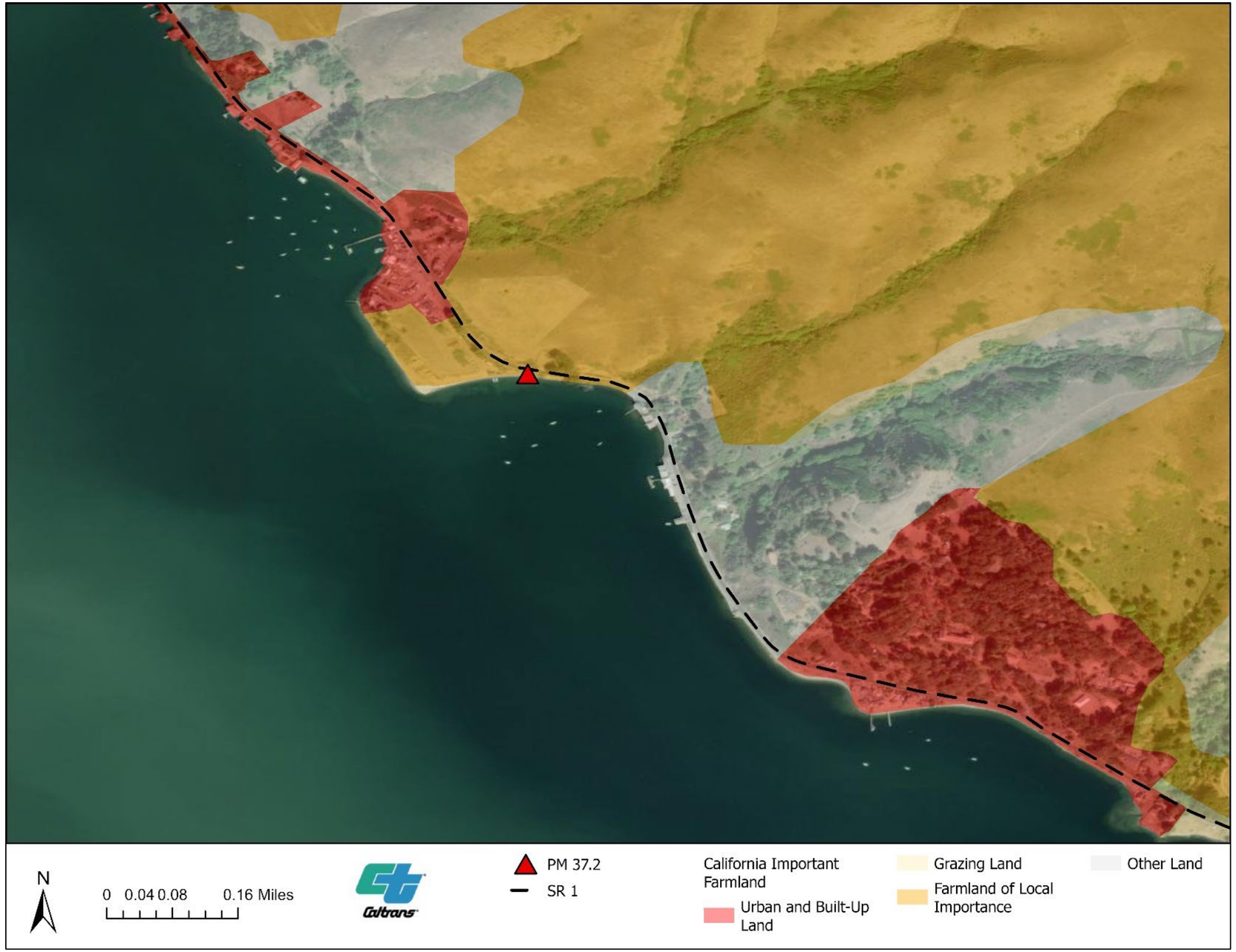

Figure 17. Surrounding land as classified by the Farmland Mapping and Monitoring Program (2020 California Important Farmland).

Figure 18. Farmland of Local Importance within Project area.

Environmental Consequences

No agricultural or forestry resource impacts are anticipated under either Build Alternative. The discussion of impacts under each of the following CEQA checklist questions applies to both proposed Build Alternatives unless otherwise noted.

a) No Impact

The Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. No changes in surrounding land use or uses of SR 1 are proposed. Further, all work is anticipated to be within Caltrans State ROW or TCEs (Section 1.6.5).

b) No Impact

The Project is not subject to a Williamson Act contract. No new uses or activities are proposed that would conflict with existing agricultural zoning or Williamson Act lands.

c, d) No Impact

The Project area does not contain forest land, timberland, or timberland zoned for Timberland Production, as defined in Public Resources Code Sections 12220(g) and 4526 or Government Code Section 51104(g). As such, the Project would not conflict with forest land zoning or require rezoning of forest or timber resources. Further, the Project would not result in the loss of, or conversion of, forest land to non-forest use.

e) No impact

The Project would not change surrounding land use or infrastructure; therefore, induced agricultural or forest land conversion is not anticipated. Growth-inducing pressures on nearby agricultural or forest resources would not occur. Therefore, no indirect conversion of farmland or forest land is expected.

Avoidance, Minimization, and/or Mitigation Measures

The Project has been determined to have no impact on agriculture or forestry resources. Therefore, no mitigation is proposed.

2.1.3 Air Quality

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

Considering information from the Caltrans Office of Environmental Engineering (Air and Noise Branch) dated May 29, 2025, the following significance determinations have been made:

Question—Would the project:	CEQA Significance Determinations for Air Quality
a) Conflict with or obstruct implementation of the applicable air quality plan?	**No Impact**
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?	**Less Than Significant Impact**
c) Expose sensitive receptors to substantial pollutant concentrations?	**No Impact**
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	**No Impact**

Affected Environment

The Project is located within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD), which is responsible for monitoring and regulating air pollutant emissions in the region. The San Francsico Bay Area Basin is currently designated as nonattainment (ozone, particulate matter 10 and 2.5), unclassified (visibility reducing particles, hydrogen sulfide), and attainment (carbon monoxide [CO], sulfur dioxide [SO_2], nitrogen dioxide [NO_2], sulfates, and lead [Pb]).

Environmental Consequences

As proposed, the Project qualifies for exemption from the air quality conformity requirements pursuant to 40 CFR 93.126 (Table 2 – Repair of damage caused by natural disasters, civil unrest, or terrorist acts, except projects involving substantial functional, locational or capacity changes”). As such, the Project is not required to demonstrate conformity with applicable air quality plans.

The discussion of impacts under each of the following CEQA checklist questions applies to both proposed Build Alternatives unless otherwise noted.

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

During construction, air pollutants are expected to be minimal to negligible. The Project would not conflict with or obstruct the implementation of an applicable air quality plan, expose sensitive receptors to substantial pollutant concentrations, or result in other emissions adversely affecting a substantial number of people. Therefore, there would be no impact.

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

The Project would be required to comply with Caltrans Standard Specification 14-9, Air Quality, which requires compliance with air-pollution control rules, regulations, ordinances, and statutes that apply in the Project area. Construction emissions are expected to be short-term and are not expected to result in a cumulative net increase in the criteria pollutants.

Avoidance, Minimization, and/or Mitigation Measures

The Project has been determined to have a less than significant impact on air quality. Therefore, no mitigation is proposed. Caltrans anticipates incorporating the following AMM. All proposed AMMs are listed here and in Appendix C.

AMM-AQ-01: Control Measures for Construction Emissions of Fugitive Dust. Dust control measures would be implemented to minimize airborne dust and soil particles generated from construction. For disturbed soil areas, the use of tackifier to control dust emissions would be included in the construction contract. Any material stockpiles would be watered, sprayed with tackifier, or covered to minimize dust production and wind erosion.

2.1.4 Biological Resources

Considering the information in the Natural Environmental Study (NES) prepared by the Caltrans Office of Biological Sciences and Permits, the following significance determinations have been made:

Question—Would the project:	CEQA Significance Determinations for Biological Resources
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, or National Oceanic and Atmospheric Administration Fisheries?	**Less Than Significant Impact**
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	**No Impact**

Question—Would the project:	CEQA Significance Determinations for Biological Resources
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	**Less Than Significant Impact**
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 Impact**
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	**No Impact**
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	**No Impact**

Affected Environment

The Project is located in the Tomales Bay Watershed (Hydrologic Unit Code 180500050304), which has a drainage area of 29,738 acres. Primary hydrologic features in the vicinity include the Tomales Bay and roadside drainages that drain into the Pacific Ocean to the west of the Project footprint. To evaluate the effects of the proposed Project on biological resources, a biological study area (BSA) was established. The BSA (1.08 acres) encompasses the Project footprint along with a buffer to include areas that Project construction activities may directly or indirectly impact (Figure 19).

Within the BSA, SR 1 is a rural two-land highway and serves as a critical connection for the small, relatively isolated communities located along the Northern Bay Area Coastline. Regional climate is temperate and humid, with substantial maritime influence along the coast including considerable summer fog.

Vegetation communities within and adjacent to the Project area include non-native eucalyptus forest fragments, coyote brush/coastal scrub, and disturbed ruderal grassland.

Environmental Consequences

To assess impacts to biological resources, desktop review was conducted in February of 2024 using Information for Planning and Consultation (IPaC), California

Natural Diversity Database (CNDDB), California Natural Plant Survey (CNPS), and National Marine Fisheries Science (NMFS) databases. Further, surveys were carried out by biologists (Table 5). Some surveys occurred multiple times as biological resources are seasonally dependent.

Table 5. Biological surveys performed.

Date	Survey
04/17/2024	Rare Plant Survey Vegetation Characterization Wildlife Habitat Assessment
05/30/2024	Aquatic Resources Delineation
06/28/2024	Rare Plant Survey Vegetation Characterization Wildlife Habitat Assessment
09/23/2024	Vegetation Characterization Environmentally Sensitive Habitat Area (ESHA) Delineation Wildlife Habitat Assessment

The discussion of impacts under each of the following CEQA checklist questions applies to both proposed Project Build Alternatives unless otherwise noted.

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

Special-Status Plant Species

A total of 16 plant species that are listed under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA) were identified as having the potential to occur within the BSA (Table 6). These include species that are federally listed as endangered (FE) as well as species listed by the State of California as endangered (CE), threatened (CT), or rare (CR).

Table 6. Special status plant species and potential to occur in BSA.

Common Name	Special Status		BSA	
	FESA	***CESA***	***Suitable Habitat***	***Potential to occur***
Baker's larkspur	FE	CE	No	None
Beach layia	FE	CE	Yes	Very Low
Contra Costa goldfields	FE	-	No	None
Golden larkspur	FE	CR	No	None
Mason's ceanothus	-	CR	No	None
Mason's lilaeopsis	-	CR	No	None
North Coast semaphore grass	-	CT	No	None
Pacific Grove clover	-	CR	No	None
Pitkin marsh lily	FE	CE	No	None
Point Reyes blennosperma	-	CE	Yes	Low
Point Reyes meadowfoam	-	CE	No	None
Sebastopol meadowfoam	FE	CE	No	None
Sonoma alopecurus	FE	-	Yes	Very Low
Sonoma spineflower	FE	CE	No	None
Sonoma sunshine	FE	CE	No	None
Tidestrom's lupine	FE	CE	No	None
Two-fork clover	FE	-	Yes	Low

While suitable habitat is present within the BSA for four of the identified special status plant species, results from the field surveys (i.e., rare plant survey, vegetation characterization, and wildlife habitat assessment) resulted in no observations of these four species. When considered in conjunction with occurrence data (i.e., records of instance), the potential for the identified species to occur within the BSA is unlikely.

Special-Status Animal Species

A total of 30 animal species that are listed under FESA and CESA (designated by the USFWS and CDFW) and are of state or federal concern were identified to potentially occur within the BSA (Table 7). These include species that are federally listed as proposed threatened (PT), threatened (FT), endangered (FE) as well as species listed by the State of California as species of special concern (SSC), fully protected (FP), threatened (ST), or endangered (SE).

Table 7. Special status wildlife species and potential to occur in BSA.

Wildlife	Common Name	Special Status		BSA
		FESA	***CESA***	***Potential to Occur***
Amphibians	California giant salamander	-	SSC	None
	Foothill yellow- legged frog	-	SSC	None
	California red-legged frog	FT	SSC	**Low/Moderate**
Birds	Tricolored blackbird	-	ST/SSC	None
	Marbled murrelet	FT	SE	None
	Western snowy plover	FT	SSC	None
	Yellow rail	-	SSC	None
	Saltmarsh common yellowthroat	-	SSC	None
	California black rail	FT	FP	None
	California Ridgway's rail	FE	FP/SE	None
	California least tern	FE	SE/FP	None
	Northern Spotted Owl	FT	ST	None
Fish	Green sturgeon – Southern DPS	FT	SSC	**Low**
	Tidewater goby	FE	SSC	None
	Southern coastal roach	-	SSC	None
	Coho salmon – central California coast ESU	FE	SE	**Low**
	Steelhead - central California coast DPS	FT	-	**Low**
	Longfin smelt – San Francisco Bay-Delta DPS	FE	ST	**Low**
Invertebrates	Western bumble bee	-	SCE	None
	Monarch butterfly	FT		**Very Low**
	Myrtle's silverspot butterfly	FE	-	**Low**
	California freshwater shrimp	FE	SE	None
Reptiles	Northwestern pond turtle	PT	SSC	**Very Low**
	Green sea turtle	FT	-	None
Mammals	Pallid bat	-	SSC	**Very Low**
	Point Reyes mountain beaver	-	SSC	None
	Townsend's big-eared bat	-	SSC	**Very Low**
	Western red bat	-	SSC	**Very Low**
	American badger	-	SSC	None
	Point Reyes jumping mouse	-	SSC	None

<u>California Species of Special Concern</u>

Six species of special concern were identified to have very low to low/moderate potential to occur within the BSA including: (1) California red-legged frog (CRLF); (2) Green sturgeon (southern Distinct Population Segment [DPS]); (3) Northwestern Pond Turtle (NWPT); (4) Pallid bat; (5) Townsend big-eared bat; and (6) Western

red bat. Three field surveys were conducted focused on looking for these species. None of the species were observed during the surveys. Considering this information in conjunction with review of available occurrence data, the potential for the identified species to occur within the BSA is unlikely.

For CRLF, suitable upland habitat is present within the BSA and 48 records of the species exist within 5 miles of the BSA. Of the 48 records within 5 miles of the BSA, none were found within the BSA itself. Although suitable upland habitat for CRLF is present within the BSA (i.e., north of SR 1), construction activities are not proposed within this area. Proposed work would occur on SR 1 and along Tomales Bay. Tomales Bay is a saline, estuarine environment which does not support CRLF reproduction, growth, or survival. As a result, the Project is anticipated to have no impacts to CRLF. A preconstruction survey for CRLF would occur to ensure impacts are avoided.

While marginally suitable coastal saltwater habitat is present within the BSA, no occurrence data exists within 5 miles for Green sturgeon. Green sturgeon are highly mobile and can tolerate naturally high turbidity levels (USACE 2008). Localized, temporary increases in turbidity may occur during cofferdam installation; however, effects would be minor. The long-term benefit of placing a cofferdam during construction activities outweighs the temporary adverse effect of physically placing the temporary dewatering feature which has the potential to result in minor sedimentation.

For NWPT, while suitable upland habitat is present east of SR 1, suitable aquatic habitats are not present within or in close proximity to the BSA. Therefore, it is highly unlikely the species would disperse through or nest within the BSA.

Finally, three bat species were identified as having the potential to occur within the BSA. Although suitable roosting habitat is not present, these species may forage within the Project area. Implementation of either Build Alternative would not impact bats, as the proposed Build Alternatives would not alter bat flight patterns or reduce available foraging habitat.

Federal and/or State Listed Species

Eight federal and/or state listed species were identified to have very low to low/moderate potential to occur within the BSA including: (1) CRLF; (2) Green sturgeon (southern Distinct Population Segment [DPS]); (3) Coho salmon (central California coast evolutionarily sensitive unit [ESU]); (4) Steelhead (central California Coast DPS; (5) Longfin smelt (San Francsico Bay-Delta DPS); (6) Monarch Butterfly; (7) Myrtle’s silverspot butterfly; and (8) NWPT. Three field surveys were conducted focused on looking for these species. None of the species were observed during the surveys. Considering this information in conjunction with review of available occurrence data, the potential for the identified species to occur within the BSA is unlikely.

Please see above for discussion of CRLF, Green sturgeon, and NWPT within the BSA. Within the BSA, there is marginally suitable coastal saltwater habitat for Coho salmon and Steelhead (i.e., salmonids). However, no recorded occurrences exist for either species within five miles of the BSA. Salmonids display avoidance behavior when exposed to sediment plumes (USACE 2008). Localized, temporary increases in turbidity may occur during cofferdam installation; however, effects would be minor. The long-term benefit of placing a cofferdam during construction activities outweighs the temporary adverse effect of physically placing the temporary dewatering feature which has the potential to result in minor sedimentation.

Similarly, marginally suitable coastal saltwater habitat is present within the BSA for Longfin smelt (federally endangered and state threatened). Within 5 miles of the BSA, there are two recorded occurrences, one of which is in Tomales Bay. Longfin smelt are adapted to turbid waters; therefore, it is unlikely temporary increases in localized turbidity from placing the cofferdam would impact adult or juvenile Longfin smelt (USACE 2011). As stated above, the long-term benefit of placing a cofferdam outweighs the temporary adverse effect of physically placing the temporary dewatering feature.

Finally, two butterfly species were identified to have the potential to occur within the BSA. While milkweed host plants were not observed during surveys, marginal roosting habitat is present within the eucalyptus grove within the BSA (north of SR 1). Although eucalyptus trees can provide habitat for overwintering, no individuals were observed during surveys. No impacts are anticipated.

With implementation of PFs and the AMMs for biological resources identified at the end of Section 2.1.4, the proposed Project would not result in temporary or permanent loss or disturbance of habitat that would result in impacts to a candidate, sensitive, or special-status species.

b) <u>No Impact</u>

According to the Aquatic Resources Delineation Report (ARDR), aquatic resources present within the BSA include wetlands and other waters. While evaluated, no riparian areas were identified within the report. Therefore, no impacts to riparian habitat are anticipated.

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

According to the ARDR, a 0.008 acre palustrine emergent wetland (WET-01) was delineated in the northwestern portion of the BSA (Figure 19). The wetland is isolated with no surface connectivity to jurisdictional waters. Additionally, Tomales Bay extends into the southern portion of the BSA and was delineated as an estuarine water feature (EW-01). A total of 0.279 acres of estuarine waters were delineated within the BSA.

These identified aquatic resources (WET-01 and EW-01) within the BSA are subject to the Clean Water Act (Section 404 and 401). Further, the features described meet

the definition of a wetland per USACE and the California Coastal Act. As a result, the two features were also delineated as California Coastal Commission (CCC) aquatic ESHAs. No CCC upland ESHAs were delineated in the BSA.

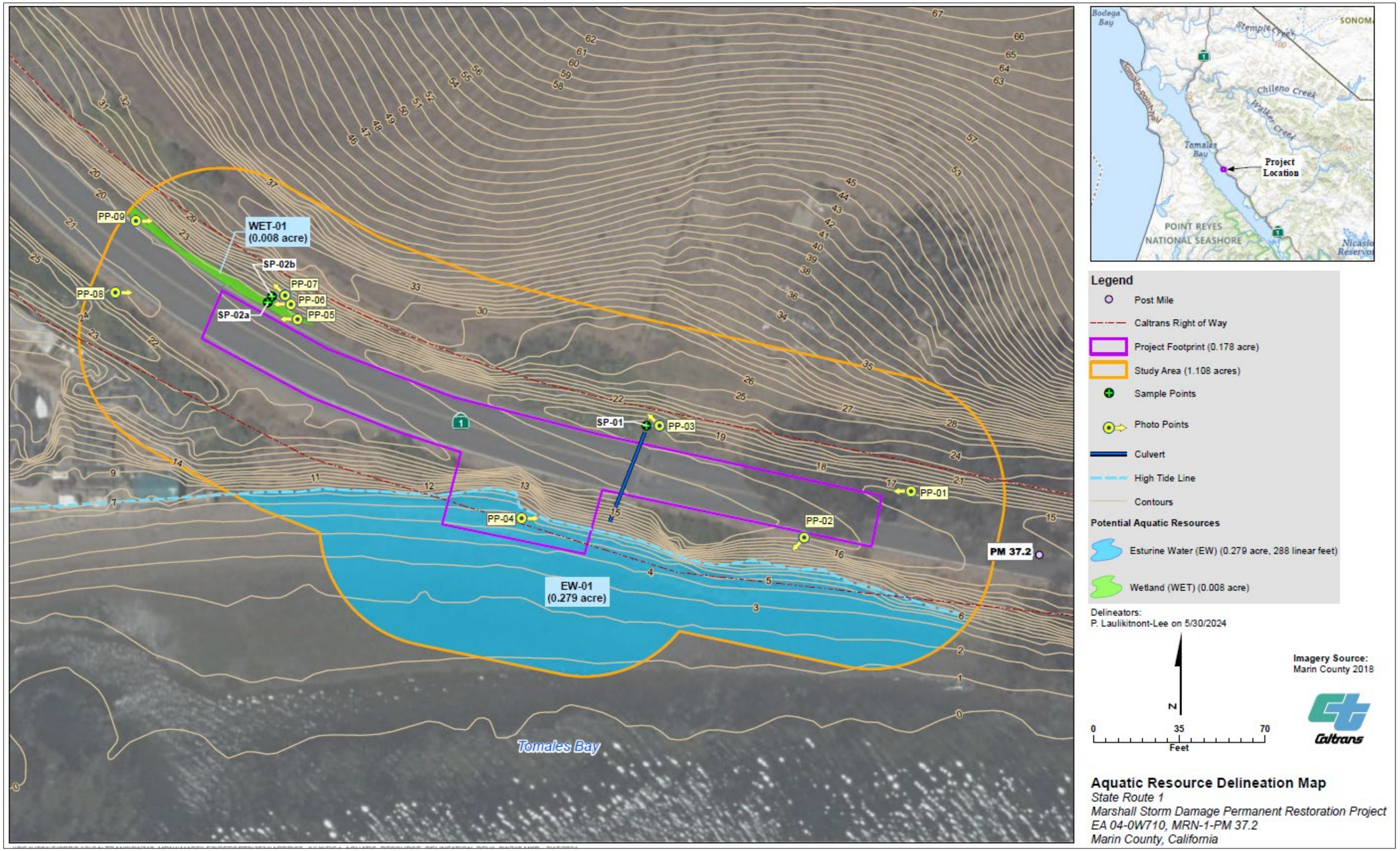

Figure 19. Aquatic Resource Delineation Map.

Implementation of either Build Alternative would involve the placement of fill (i.e., RSP or Gabion Wall with RSP Façade) within the area of the delineated estuarine water resource. This would result in 0.02 acres of impact for Alternative 1 or 0.008 acres of permanent impacts for Alternative 2. The extent of fill of would not substantially alter estuarine functions or processes of Tomales Bay. Accordingly, while impacts would be permanent, it would not constitute a substantial adverse change to the estuarine water resource.

With the use of Caltrans AMMs identified at the end of Section 2.1.4, the Project is expected to have a less than significant impact on protected wetlands and waters.

d) <u>No Impact</u>

As discussed above, several wildlife species, including state and federally listed species, are expected to have a very low to low chance of occurring in the Project area. Construction of the Project would include installation of a cofferdam which may result in temporary direct effects. While four fish species have been identified to have the potential to occur within the BSA, identified species tend to be highly mobile, display avoidance behavior, or tolerate increased turbidity (USACE 2008 and 2011).

Implementation of AMMs in Section 2.1.4, including wildlife exclusion fencing and seasonal work restrictions, would minimize Project impacts to the movement of fish species by allowing for their safe passage outside the proposed construction area and limiting construction to seasons when species are least likely to move through the Project area.

e) <u>No Impact</u>

The Project area is not subject to any local policies or ordinances specifically adopted to protect biological resources (e.g., tree preservation ordinances). Implementation of either Build Alternative would not conflict with any biological resource protection policies. Therefore, no impact is anticipated.

f) <u>No Impact</u>

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

Avoidance, Minimization, and/or Mitigation Measures

The Project has been determined to have a less than significant impact on biological resources. Therefore, no mitigation is proposed. Caltrans anticipates incorporating the following AMMs. All proposed AMMs are listed here and in Appendix C.

AMM-BIO-01: Seasonal Avoidance. To the extent practicable, work will not occur during the wet season. Except for limited vegetation clearing (necessary to minimize impacts to nesting birds), work off paved or bare gravel areas will be limited to the period from May 15 to November 15. On pavement work and work in the compacted road-lens may occur all year, in coordination with the Project Biologist.

AMM-BIO-02: Worker Environmental Awareness Training. Prior to ground-disturbing activities, the Project Biologist will conduct an education program for all construction personnel. At a minimum, the training will include a description of special-status species, migratory birds, and their habitats, how the species might be encountered within the Project area, an explanation of the status of these species and protection under the federal and state regulations, the measures to be implemented to conserve listed species and their habitats as they relate to the work site, boundaries within which construction may occur, and how to best avoid the incidental take of listed species. The field meeting will include topics on species identification, life history, descriptions, and habitat requirements during various life stages. Emphasis will be placed on the importance of the habitat and life stage requirements within the context of Project maps showing areas where AMMs are to be implemented. The program will include an explanation of applicable federal and state laws protecting endangered species as well as the importance of compliance with Caltrans and various resource agency conditions.

AMM-BIO-03: Environmentally Sensitive Area Fencing. Before starting construction, environmentally sensitive areas (ESAs) (defined as areas containing sensitive habitats adjacent to or within construction work areas for which physical disturbance is not allowed) would be clearly delineated using high-visibility orange fencing. ESA fencing would remain in place until work is complete and would prevent construction equipment or personnel from entering sensitive habitat areas. The ESA fencing also serves to delineate the Project footprint in which all construction activity is to occur. The final Project plans would depict the locations where ESA fencing would be installed and how it would be assembled/constructed. The special provisions in the bid solicitation package would clearly describe acceptable fencing material and prohibited construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within ESAs. The ESA fencing would be removed following completion of construction activities.

AMM-BIO-04: Wildlife Exclusion Fencing. Before starting construction, at the discretion of the Caltrans biologist, wildlife exclusion fencing (WEF) may be installed along the Project footprint perimeter in the areas where wildlife could enter the Project site. The final Project plans will depict the locations where WEF will be installed, if needed, and how it will be assembled/constructed. The special provisions in the bid solicitation package will clearly describe acceptable WEF fencing material and proper WEF installation and maintenance. The WEF will remain in place until work is complete and will be regularly inspected for stranded

animals and fully maintained daily. The WEF will be removed following completion of construction activities.

AMM-BIO-05: Stormwater Best Management Practices. In accordance with RWQCB requirements, a Stormwater Pollution Prevention Plan will be developed and erosion control BMPs implemented to minimize wind- or water-related erosion. The Caltrans Construction Site BMP Manual (Caltrans 2017) provides guidance for the inclusion of provisions in all construction contracts to protect sensitive areas and prevent and minimize stormwater and non-stormwater discharges. At a minimum, protective measures will include the following:

a. Prohibiting discharge of pollutants from vehicle and equipment cleaning into storm drains or watercourses.
b. Maintaining equipment to prevent the leakage of vehicle fluids, such as gasoline, oils, or solvents. Hazardous materials such as fuels, oils, solvents, etc. will be stored in manufacturer approved containers in a designated location that is at least 50 feet from aquatic habitats.
c. Servicing vehicles and construction equipment, including fueling, cleaning, and maintenance at least 50 feet from aquatic habitat, unless separated by topographic or engineered drainage barrier.
d. Collecting and disposing of concrete wastes and water from curing operations in appropriate washouts, located at least 50 feet from watercourses.
e. Maintaining spill containment kits onsite at all times during construction operations and/or staging or fueling of equipment
f. Using water trucks and dust palliatives to control dust in unvegetated areas and covering temporary stockpiles when weather conditions require.
g. Protecting graded and designated staging areas from erosion using an appropriate combination of approved erosion control items or methods, in accordance with the Stormwater Pollution Prevention Plan, as indicated in the RWQCB permit, and as stated in the contract plans and special provisions.

AMM-BIO-06: Nighttime Restrictions/Lighting. Nightwork would be limited wherever possible. If nightwork must be performed, lighting will be directed towards the roadway to the greatest extent practicable to avoid exposing nocturnal wildlife and their habitats to excessive glare.

AMM-BIO-07: Avoidance of Entrapment. To prevent inadvertent entrapment of animals during construction, excavated, steep-walled holes or trenches more than 1 foot deep will be covered at the close of each working day using plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they must be thoroughly inspected for trapped animals. Pipes, culverts, or similar structures

stored in the BSA overnight will be inspected before they are subsequently moved, capped, or buried.

AMM-BIO-08: Pre-construction Nesting Bird Surveys and Nest Avoidance. During the nesting season (February 1 through September 30), pre-construction surveys for nesting birds will be conducted by a qualified biologist no more than 72 hours prior to the start of construction activities. If work is to occur within 300 feet of active raptor nests or 50 feet of active non-game bird nests, a non-disturbance buffer will be established at a distance sufficient to minimize disturbance based on the nest location, topography, cover, the species' sensitivity to disturbance, and the intensity/type of potential disturbance. To minimize and avoid take of migratory birds, their nests, and their young, Caltrans will conduct vegetation and tree trimming outside of the bird nesting season, prior to construction. This work will be limited to vegetation and trees that are within the Project footprint. Additional bird nesting surveys will be required if work must occur during the nesting season.

AMM-BIO-09: Replant, Reseed, and Restore Disturbed Areas. Caltrans will restore temporarily disturbed areas to the maximum extent practicable. Exposed slopes and bare ground will be reseeded with native grasses and shrubs to stabilize and prevent erosion. Where disturbance includes the removal of trees and woody shrubs, native species will be replanted, based on the local species composition.

AMM-BIO-10: Reduce Spread of Invasive Species. To reduce the spread of invasive, non-native plant species and minimize the potential decrease of palatable vegetation for wildlife species, Caltrans will comply with Executive Order 13112. This order is provided to prevent the introduction of invasive species and provide for their control to minimize the economic, ecological, and human health effects. In the event that noxious weeds are disturbed or removed during construction-related activities, the contractor will be required to contain the plant material associated with these noxious weeds and dispose of it in a manner that will not promote the spread of the species. The contractor will be responsible for obtaining all permits, licenses, and environmental clearances for properly disposing of materials. Areas subject to noxious weed removal or disturbance will be replanted with fast-growing native grasses or a native erosion control seed mixture. Where seeding is not practical, the target areas within the Project area will be covered to the extent practicable with heavy black plastic solarization material until the end of the Project.

AMM-BIO-11: Work in Dry Weather Only. Work within wetted areas, including Tomales Bay, would be conducted only during periods of dry weather. Forecasted precipitation would be monitored. When 0.25 inch or more of precipitation is forecasted to occur, work would stop before precipitation commences. No Project activities would be started if their associated erosion control measures cannot be completed prior to the onset of precipitation. After any storm event, all sites currently under construction and all sites scheduled to

begin construction within the next 72 hours would be inspected for erosion and sediment problems, and corrective action would be taken as needed; 72-hour weather forecasts from the National Weather Service would be consulted, and work would not resume until runoff ceases, and there is less than a 50 percent forecast for precipitation for the following 24-hour period.

AMM-BIO-12: Dewatering. Dewatering and discharging activities will be conducted according to standard Caltrans requirements. If requested by state and federal agencies, the dewatering plan will be provided for review and comment in advance of dewatering activities.

AMM-BIO-13: Preconstruction Survey for CRLF. Pre-construction surveys for CRLF will be conducted by a USFWS-approved biologist no more than 14 calendar days prior to any initial ground disturbance and immediately prior to ground-disturbing activities (including vegetation removal) beyond the existing pavement. Suitable non-breeding upland habitat within the Project footprint, including refugia habitat such as under shrubs, downed logs, small woody debris, and burrows, will be inspected. If CRLF is observed, the individual will be evaluated and allowed to pass through the Project area. Work must avoid the species.

AMM-BIO-14: Biological Monitoring. The USFWS-approved biologist would be present during construction activities where take of a listed species could occur including site preparation activities. Through communication with the Resident Engineer or a designee, the USFWS-approved biologist may stop work if deemed necessary for any reason to protect listed species and would advise the Resident Engineer or designee on how to proceed accordingly.

AMM-BIO-15: Rare Plant/Host Plant Preconstruction Survey. During the spring season prior to construction, Caltrans would conduct focused pre-construction surveys for rare plants and butterfly host plants. If found, the extent and abundance of these plants will be mapped and flagged in the field. These surveys would be conducted during the season in which these plants are detectable and in the phenological stage of development for correct identification (typically late spring). If a rare plant or butterfly host plant is identified within the Project area during the preconstruction survey, a 50-foot no disturbance buffer zone around individual plant(s) or population(s) would be established to protect them during activities that could result in disturbance. The buffer should be clearly marked with stakes, flags, or fencing.

AMM-BIO-16: Wetland Protection. The following measures would be implemented in and adjacent to delineated wetland ESAs in the Project limits:

a. Work in and adjacent to delineated wetlands where flooding has potential to occur would be scheduled outside of the wet-weather season.

b. Work in and adjacent to delineated tidal wetlands would not occur within 2 hours before or after extreme high tide events (6.5 feet above mean lower low water elevation or greater, as determined from the NMFS tidal gage station nearest to the activity) unless isolated within a cofferdam.

AMM-BIO-17: In-Water Work Window. The in-water work window would prevent construction disturbance in Tomales Bay when most rainfall typically occurs, avoiding impacts to water quality. All work in aquatic habitat for fish species within Tomales Bay will take place from June 1 to October 31.

AMM-BIO-18: Placement of Nontoxic Structures. All material placed in Tomales Bay will be non-toxic. Any combination of wood, cured concrete, steel pilings, or other materials used for in-channel structures would not contain coatings, treatments, or consist of substances deleterious to aquatic organisms that may leach into the surrounding environment in amounts harmful to aquatic organisms.

AMM-BIO-19: Construction within Cofferdams. All work in aquatic habitat would take place within cofferdams in dewatered areas. Cofferdams will effectively isolate the work areas from the Bay and significantly reduce potential construction effects and stressors, such as sediment and noise. Cofferdams would be designed and constructed to isolate work areas, avoiding disturbance of potential fish habitat areas in Tomales Bay and allowing tidal flows to easily pass through the Project limits.

AMM-BIO-20: Cofferdam Installation. During construction, the super sac cofferdam would be installed during a period of low tide, when the cofferdam area is not inundated, to minimize the potential for fish to be present within the work area. No impact hammering or sheet pile installation would be allowed.

2.1.5 Cultural Resources

Considering the information in the Section 106 Summary Memo prepared by Caltrans Office of Cultural Resource Studies, the following significance determinations have been made:

Question—Would the project:	CEQA Significance Determinations for Cultural Resources
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	**Less Than Significant Impact**
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	**Less Than Significant Impact**

Question—Would the project:	CEQA Significance Determinations for Cultural Resources
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	**Less Than Significant Impact**

Affected Environment

Review for this Project was conducted by Caltrans District 4 Professionally Qualified Staff (PQS) in accordance with the *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, the United States Army Corps of Engineers' Sacramento District, San Francisco District, and Los Angeles District, 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 (2024) (PA), and Memorandum of Understanding between the California Department of Transportation and the California State Historic Preservation Officer Regarding Compliance with Public Resources Code Section 5024 and Governor's Executive Order W-26-92* (2024) (MOU).

To conduct Project review, in accordance with Section 106 PA Stipulation VIII.A, an Area of Potential Effects (APE) was established. The APE encompasses all Project elements for both Build Alternatives and cultural resource boundaries.

Caltrans PQS requested review of the Sacred Lands File (SLF) and contact list from the Native American Heritage Commission (NAHC) on February 6, 2024. The NAHC responded on February 15, 2024. Pursuant to Section 106 and Assembly Bill (AB) 52 and based on the list of indigenous groups and individuals provided by the NAHC, consultation was conducted with the Federated Indians of Graton Rancheria (FIGR) and Guidiville Rancheria of California. Consultation is ongoing throughout the life of the Project.

Identification and evaluation reports prepared for this Project (Historic Property Survey Report (HPSR), Archaeological Survey Report (ASR), Historical Resource Evaluation Report (HRER), Extended Phase I (XPI) Report) were submitted to the State Historic Preservation Officer (SHPO) on March 21, 2025. Concurrence on eligibility from SHPO was received April 9, 2025 (FHWA_2025_0321_003).

Environmental Consequences

Review by the NAHC of the SLF produced a negative finding for sacred sites within the Project area.

Based on the Section 106 Summary Memo, it was determined the Northwestern Pacific Railroad which intersects with the Project is not eligible for the National

Register of Historic Places (NRHP). The Draft Finding of Effect (FOE) anticipates a Finding of No Adverse Effect without standard condition. This determination will be finalized once a Build Alternative is selected and in support of the Final Environmental Document. The FOE will be sent to the SHPO for concurrence.

A cultural ESA and a monitoring area (MA) would be delineated for this Project. The cultural ESA and MA would be noted in Project plans and described in the Project specific specifications. Monitoring would be conducted during construction by a qualified archaeologist and Tribal representative from FIGR. Appropriate protective measures including demarcations with flags or high visibility spray paint, or temporary high visibility fencing, and access restrictions would be implemented.

The discussion of impacts under each of the following CEQA checklist questions applies to both proposed Build Alternatives unless otherwise noted.

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

Caltrans PQS and SHPO concurred that a resource in the APE is not eligible for the NRHP and is anticipated to have no adverse effect on a cultural resource with the use of nonstandard conditions. Therefore, the Project would not cause a substantial adverse change in the significance of historical resources pursuant to Section 15064.5.

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

Review by the NAHC of the SLF produced a negative finding for sacred sites within the Project area. A record search identified one cultural resource that can be protected through use of an ESA and MA. Therefore, the Project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.

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

There are no known human remains, including those interred outside of dedicated cemeteries, within the Project area. However, there are known human burials within the Project vicinity.

Implementing construction training, monitoring, and the establishment of an ESA and post-review discovery plan would avoid or reduce impacts to potential resources by providing for resource avoidance or protection in place where possible, and treatment of resources in accordance with tribal cultural values when avoidance or protection is not feasible.

Avoidance, Minimization, and/or Mitigation Measures

The Project has been determined to have a less than significant impact on cultural resources. Therefore, no mitigation is proposed. Caltrans anticipates incorporating the following AMMs. All proposed AMMs are listed here and in Appendix C.

AMM-CUL-01: Cultural Sensitivity Training. Prior to the initiation of construction for the Project, the Project contractor, staff, and construction crews shall be made aware of the potential to encounter cultural resources and Tribal Cultural Resources (including the traditional importance of resources such as cultural landscapes, significant waterways, and ethnobotanical plants) through a presentation provided by an archaeologist and a representative from the FIGR.

AMM-CUL-02: Environmentally Sensitive Area. A vertical and horizontal ESA exists for this Project. The ESAs will be delineated on the plans and described in the specifications. Appropriate protective measures including demarcations with flags or high visibility spray paint, or temporary high visibility fencing (THVF), access restrictions, and monitoring of the ESA boundaries by a qualified archaeologist and Tribal representative from the Federated Indians of Graton Rancheria will be implemented during construction.

AMM-CUL-03: Monitoring Area. An MA exists for this Project. The MA will be delineated/noted on the plans and described in the specifications. Appropriate protective measures including demarcations with flags or high visibility spray paint, and monitoring by a qualified archaeologist and Tribal representative from the Federated Indians of Graton Rancheria will be implemented during construction.

2.1.6 Energy

Considering the information in the Energy Analysis Report prepared by the Caltrans Office of Environmental Engineering (Air Quality and Noise Branch) dated December 17, 2025, the following significance determinations have been made:

Question—Would the project:	CEQA Significance Determinations for Energy
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	**Less Than Significant Impact**
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	**No Impact**

Affected Environment

State Route 1 (SR 1) is a vital link for the remote communities along the Northern Bay Area coast. Winding through Marin County's federal and state parklands, the highway is defined by its scenic vistas and preserved natural landscape. The Project site occupies a rural corridor, flanked to the north and south by a mix of local

businesses and housing, including small eateries, cottages, and hotels- with the nearest sensitive receptor located approximately 400 feet south of the Project site.

Environmental Consequences

In California, energy use and conservation are shaped by statewide polices aimed at reducing greenhouse gas emissions and improving energy efficiency. Under AB 32, the State requires Greenhouse Gas (GHG) emissions to return to 1990 levels, with long-term goals calling for an 80 percent reduction below 1990 levels by 2050. CEQA Guidelines, including Appendix F, further require evaluation of whether a Project would result in wasteful, inefficient, or unnecessary energy use. This regulatory setting provides the framework for understanding existing energy conditions and evaluating the Project's potential energy impacts.

Activities that consume energy generate byproducts. Greenhouse gases (GHGs) are the most extensively studied byproducts of energy consumption and are linked to climate change. To assess energy consumed by construction vehicles and equipment, the Caltrans Construction Emissions Tool (CAL-CET 2021), version 1.0.3, was used to quantify carbon dioxide (CO_2) emissions.

CO_2 is the dominant GHG from automotive sources. The U.S. Environmental Protection Agency's (USEPA's) GHG equivalencies formulas were used to convert CO_2 emissions to fuel volumes. It was assumed that diesel fuel would be used for all construction vehicles and equipment, and gasoline and electricity would be used for worker commutes. The estimated fuel consumption of construction vehicles and equipment as well as worker commute vehicles is shown in Table 8. Energy consumed during construction, operation, and maintenance of this Project is assumed to be the same for each Build Alternative.

Table 8. Total energy consumption for both Build Alternatives.

Build Alternatives	**Total Energy Consumption**		
	Diesel (gallons)	*Gasoline (gallons)*	*Electricity (kWh)*
TOTAL	1,635	488	209.524

The discussion of impacts under each of the following CEQA checklist questions applies to both proposed Build Alternatives unless otherwise noted.

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

The Project would not result in a potentially significant impact due to wasteful, inefficient, or unnecessary consumption of energy resources during construction or operation. During construction, operation of heavy-duty equipment, material deliveries, and debris hauling would require diesel consumption. Further, construction worker commutes to the Project site would require gasoline and electricity. Diesel, gasoline, and electricity usage for construction is a one-time, temporary commitment of energy, necessary for any infrastructure improvement project. AMM-ENG-01 and AMM-ENG-02 would minimize energy consumption from

construction activities. Therefore, Project construction would not result in the inefficient, wasteful, or unnecessary consumption of energy. This impact would be less than significant.

The Project is limited to restoring the road damaged by storm water and the prevention of future slope washouts and would not increase the capacity of SR-1. There would be no permanent increase in motor vehicle travel or operational energy usage. By repairing the storm damaged solidity of roadbed, the Project is anticipated to reduce future maintenance needs. The Project would have no long-term effect on energy use.

b) <u>No Impact</u>

State energy policy, as administered by the California Energy Commission and outlined in CEQA Guidelines Appendix F, promotes energy conservation and efficient use of energy resources. At the local level, the Marin Countywide Plan includes policies that encourage energy efficiency and reduction of GHG emissions.

The Project would not involve long-term increases in energy demand, would not preclude the use of renewable energy systems, and would not interfere with the County or State's ability to implement energy efficiency or climate-related policies. Therefore, the Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Avoidance, Minimization, and/or Mitigation Measures

The Project has been determined to have a less than significant impact on energy. Therefore, no mitigation is proposed. Caltrans anticipates incorporating the following AMMs. All proposed AMMs are listed here and in Appendix C.

AMM-ENERGY-01: Vehicle and equipment maintenance. Perform regular vehicle and equipment maintenance.

AMM-ENERGY-02: Reduce Offsite Disposal. To the extent feasible, recycle hazardous waste and excess materials to reduce disposal offsite. If recycling is not practicable, dispose of material.

2.1.7 Geology and Soils

Considering the information in the Geologic and Palaeontologic Technical Memo prepared by Caltrans Office of Geotechnical Design dated October 30, 2025, the following significance determinations have been made:

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

Affected Environment

The San Andreas fault lies west of the Project area in Tomales Bay. The Project area is entirely underlain by beach sand and fill material over Franciscan Complex Mélange of Jurassic-Cretaceous age. Mélange is a tectonically deformed mixture of variably sheared shale and sandstone that contains:

(1) Hard tectonic inclusions consisting primarily of greenstone, chert, graywacke, and their metamorphosed equivalents, along with isolated blocks of high-grade metamorphic rocks and serpentinite.

(2) Variably resistant masses of graywacke, greenstone, and serpentinite that may extend for several miles in their longest dimension.

Small, separate pieces of limestone also occur within the Mélange, but they are usually too small to show on detailed maps. Highly sheared shale is common in areas where blocks of rock are concentrated. The sandstone in the Mélange is typically graywacke, appears grayish green where fresh, and weathers to a brown color. The grain size is commonly medium to coarse (USGS 2000).

Environmental Consequences

To assess Geology and Soils impacts, a Geologic and Palaeontologic Memo was prepared for this Project. No impact to geological or soil resources are anticipated under either Build Alternative. The discussion of impacts under each of the following CEQA checklist questions applies to both proposed Build Alternatives unless otherwise noted.

a) No Impact

While strong ground shaking and seismically induced ground failure may occur over the life of the Project due to regional seismicity, Project elements would not expose the public to additional seismic hazards. No direct fault rupture hazard is present at the site.

b) No Impact

Construction activities may induce minor erosion; however, implementation of standard PFs would minimize the hazard.

c, d) No Impact

The Project area is not located on a geologic unit or soil that is unstable or that would become unstable because of this project. As such, the Project is not anticipated to result in on- or off-site landslides, lateral spreading, subsidence, liquefaction, or collapse. Further, the Project is not located on expansive soil (Table 18-1-B of the Uniform Building Code [1994]).

e) No Impact

Septic systems are not a part of the Project.

f) No Impact

Although the Franciscan Complex contains some fossils, Mélange terranes around the San Francisco Bay Area are typically sheared to an extent that stratigraphic

context is lost. The Project site is not considered paleontologically sensitive. Therefore, the Project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Avoidance, Minimization, and/or Mitigation Measures

The Project has been determined to have no impact on geology or soils. Therefore, no mitigation is proposed. Caltrans anticipates incorporating the following AMM. All proposed AMMs are listed here and in Appendix C.

> **AMM-AES-03: Revegetate Disturbed Areas.** Apply erosion control seeding and similar measures to all areas of disturbance where they are beyond paved areas. Hydroseeding of RSP above the high tide line will help minimize visual impact of newly installed RSP and blend with the surrounding shoreline.

2.1.8 Greenhouse Gas Emissions

Considering the information in the Construction-Related GHG Emissions Analysis prepared by the Caltrans Office of Environmental Engineering (Air Quality and Noise Branch) dated December 17, 2025, the following significance determinations have been made:

Question—Would the project:	CEQA Significance Determinations for Greenhouse Gas Emissions
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	**Less Than Significant Impact**
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	**No Impact**

Affected Environment

Refer to Section 2.1.6 (Energy) for a discussion of affected environment.

Environmental Consequences

CO_2 is the single most important GHG pollutant due to its abundance when compared with other vehicle-emitted GHG, including methane (CH_4), nitrous oxide (N_20), hydrofluorocarbon (HFCs) and black carbon (BC). Construction-generated GHG includes emissions resulting from material processing by onsite construction equipment, workers commuting to and from the Project site, and traffic delays due to construction. Emissions would be produced at different rates throughout the Project depending on activities conducted during various phases of construction.

Construction-related GHG emissions were calculated using CAL-CET 2021. Analysis conducted focus on vehicle emitted GHG. Table 9 summarizes the construction related emissions, including total CO_2e emission. CO_2e is a standard unit that allows the climate impact of different GHGs to be compared by converting them into a single metric using their global warming potential (GWP). This method enables consistent reporting, comparison, and tracking of all greenhouse gas emissions by expressing them in terms of CO_2 that would produce an equivalent warming effect.

Table 9. Summary of construction-related Greenhouse Gas (GHG) emissions.

	PARAMETERS				**PROJECT TOTAL**
	CO_2 (tons)	***CH_4 (tons)***	***N_20 (tons)***	***HFC (tons)***	***CO_2e (metric tons)***
TOTAL EMISSIONS	23	0.001	0.001	0.001	24

Estimated working days and Project cost are the same for both alternatives. As such, the discussion of impacts under each of the following CEQA checklist questions applies to both Build Alternatives unless otherwise noted.

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

While the Project would result in GHG emissions during construction, no change in roadway capacity as a result of the Project would occur. Therefore, the Project is not expected to result in an increase in operational GHG emissions. With implementation of AMMs outlined in Section 2.1.8, GHG emissions would be further reduced, resulting in less than significant impact.

b) <u>No Impact</u>

During construction of the proposed Project, Caltrans would require compliance with all local climate action plans, and State regulations, ordinances, and statutes that apply to GHG emissions. The proposed Project would not increase the capacity of the highway and therefore would not contribute to a long-term increase in GHG emissions. Accordingly, the Project would not conflict with plans, policies, or regulations aimed at reducing GHG emissions. For further discussion, please see Chapter 3.

Avoidance, Minimization, and/or Mitigation Measures

The Project has been determined to have a less than significant impact from greenhouse gas emissions. Therefore, no mitigation is proposed. Caltrans anticipates incorporating the following AMMs. All proposed AMMs are listed here and in Appendix C.

> **AMM-GHG-01: Idling Restrictions.** Contractors shall limit idling of vehicles and construction equipment on-site to reduce fuel use and associated emissions.

AMM-GHG-02: Solar-Powered Traffic Control Devices. If feasible, solar powered signal boards would be used to reduce the use of non-renewable energy during construction.

AMM-ENERGY-01: Vehicle and equipment maintenance. Perform regular vehicle and equipment maintenance.

AMM-ENERGY-02: Reduce Offsite Disposal. To the extent feasible, recycle hazardous waste and excess materials to reduce disposal offsite. If recycling is not practicable, dispose of material.

2.1.9 Hazards and Hazardous Materials

Considering information in the Initial Site Assessment (ISA) memo from Caltrans Office of Environmental Engineering (Hazardous Waste Branch) dated December 16, 2025, the following significance determinations have been made:

Question—Would the project:	CEQA Significance Determinations for Hazards and Hazardous Materials
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	**No Impact**
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	**No Impact**
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	**No Impact**
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	**No Impact**

Question—Would the project:	CEQA Significance Determinations for Hazards and Hazardous Materials
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	**No Impact**
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	**No Impact**
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	**No Impact**

Affected Environment

The Project is not anticipated to transport, use, or dispose of hazardous materials. As part of construction activities, a keyway would be excavated into undisturbed soil at the base of the side slope to use as material to fill voids along the slope. Pavement rehabilitation would consist of sealing cracks, digging out up to six inches of the existing damaged pavement, and repaving with asphalt concrete.

Nearby site investigations (2012, 2017, and 2018) for Aerially Deposited Lead (ADL) soil resulted in findings ranging from non-hazardous to California hazardous (type Z-2). This data alone is not enough to characterize the soil at the Project location. ADL levels would be characterized by a site investigation during the PS&E phase. Further, the Project area is not located on the Cortese List (Government Code Section 65962.5).

Environmental Consequences

To evaluate hazardous materials within the Project area, the Caltrans Office of Environmental Engineering (hazardous Waste Branch) reviewed the Hazardous Waste and Substances Sites List (*Cortese List* pursuant to Government Code Section 65962.5), the State Water Resources Control Board's GeoTracker database, the Department of Toxic Substances Control's EnviroStor database, and available environmental records (e.g., CalGEM, Caltrans files, District 4 Hazardous Materials Data Viewer).

There is a Geotracker site within 500 feet of State ROW with moderate risk to the Project. No oil, gas, or geothermal wells are located within 500 feet of the Project area (CalGEM database). More extensive discussion and reporting would be addressed in the PS&E phase of the Project.

No impact from hazardous waste or hazards are anticipated under either Build Alternative. The discussion of impacts under each of the following CEQA checklist questions applies to both proposed Build Alternatives unless otherwise noted.

a) No Impact

As proposed, the Project does not anticipate transporting, using, or disposing of hazardous materials. As such, the Project does not create a significant hazard to the public or environment.

b) No Impact

Based on proposed Project activities, Traffic Management Data Report, and Draft Lane Closure Chart Memo, it is unlikely the Project would encounter or release hazardous materials into the environment. Therefore, the Project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

c) No Impact

The Project is not located within 0.25 miles of a school.

d) No Impact

The Project area is not located within a site included on the Cortese List (i.e., list of hazardous materials sites compiled pursuant to Government Code Section 65962.5). As such, the Project would not create a significant hazard to the public or the environment.

e) No Impact

The Project is not located within an airport land use plan or within two miles of a public airport or public use airport. Nor is the Project located in the vicinity of a private airstrip.

f) No Impact

The Project would not impair the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Construction activities would be temporary. A Traffic Management Data Report and Draft Lane Closure Chart Memo have been prepared to identify any major impacts or concerns. A final Traffic Management Plan (TMP) would be prepared during the Plans Specifications and Estimates (PS&E) phase to minimize construction-related delays to the traveling public and disruptions to emergency services. The TMP would include press releases to notify and inform emergency services of upcoming closures and detours affecting travel way lanes.

g) <u>No Impact</u>

The Project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. As proposed, the Project would not create infrastructure or conditions that could potentially exacerbate fire risks to communities or structures.

Avoidance, Minimization, and/or Mitigation Measures

Caltrans Hazardous Waste would reassess the extent of ground disturbance in the scope of the Project in the PS&E phase. If required, a site investigation to characterize the soil for contaminants (primarily ADL) will be conducted. The results of the site investigation would dictate the special provisions required for the safe handling of the soil. If found, the soil will be managed in accordance with the 2016 DTSC-Caltrans Soil management Agreement for ADL-contaminated soils and applicable regulations.

The Project has been determined to have a less than significant impact on hazards and hazardous materials. Therefore, no mitigation is proposed. Caltrans anticipates incorporating the following AMMs. All proposed AMMs are listed here and in Appendix C.

AMM-HAZ-01: Preliminary Site Investigation. A Preliminary Site Investigation that focuses on collection and laboratory analysis of soil samples for aerially deposited lead and other contaminants will be completed during the Project PS&E phase once the limits and depths of earthwork are well defined. Results will be incorporated into the construction contract in compliance with the 2016 ADL Agreement.

AMM-TRANS-01: Traffic Management Plan. To minimize potential effects from construction activities to motorists, bicyclists, or pedestrians using local streets, a TMP would be developed by Caltrans and implemented throughout construction. The TMP would include press releases to notify and inform motorists, bicyclists, businesses, community groups, local entities, and emergency services of upcoming closures and detours affecting travel way lanes. The TMP would also include elements such as portable Changeable Message Signs and the CHP Construction Zone Enhanced Enforcement Program (COZEEP) would be utilized to minimize traffic delays and to address the safety needs for commuters, bicyclists, and highway workers.

2.1.10 Hydrology and Water Quality

Considering the information in the Water Quality Study (WQS) prepared by the Caltrans Office of Water Quality and the Location Hydrology Study (LHS) prepared by the Caltrans Office of Hydraulic Engineering, the following significance determinations have been made:

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

Affected Environment

The primary federal law regulating water quality is the Clean Water Act (CWA), issued by the Environmental Protection Agency (EPA). The EPA delegated its authority in California to the State Water Resources Control Board (SWRCB) and

nine RWQCBs. Each RWQCB prepares and adopts its water quality control plan (Basin Plan), which is a master policy document for managing surface and groundwater quality in the region. Section 401 requires a Water Quality Certification from the SWRCB or RWQCB for this Project as it requires a federal permit (Section 404 permit from the USACE). This Project is located in the Region 2 jurisdiction of the RWQCB.

The Project area is within the Tomales Bay-Frontal Pacific Ocean Hydrologic Unit Code (HUC; 2201120301) - stormwater runoff would drain into Tomales Bay which drains to the Frontal Pacific Ocean. Tomales Bay is listed on the CWA Section 303 (d) list and has established EPA approved Total Maximum Daily Loads (TMDLs) for nutrients, pathogens, sedimentation/siltation, and mercury. The Project is located within a HUC characterized as having high receiving watershed risk, indicating the downstream waters are sensitive to additional pollutant loading.

The Project is located within the 100-year floodplain as defined by the Federal Emergency Management Agency (FEMA) Flood Hazard Mapping (FEMA 2025; Figure 20). The Project area is within floodplain zones AE which indicates a 1% annual chance flood. The Project would alter terrain and add fill within the floodplain. Estimated fill for Alternative 1 is 143 yd^3, while estimated fill for Alternative 2 is 47 yd^3.

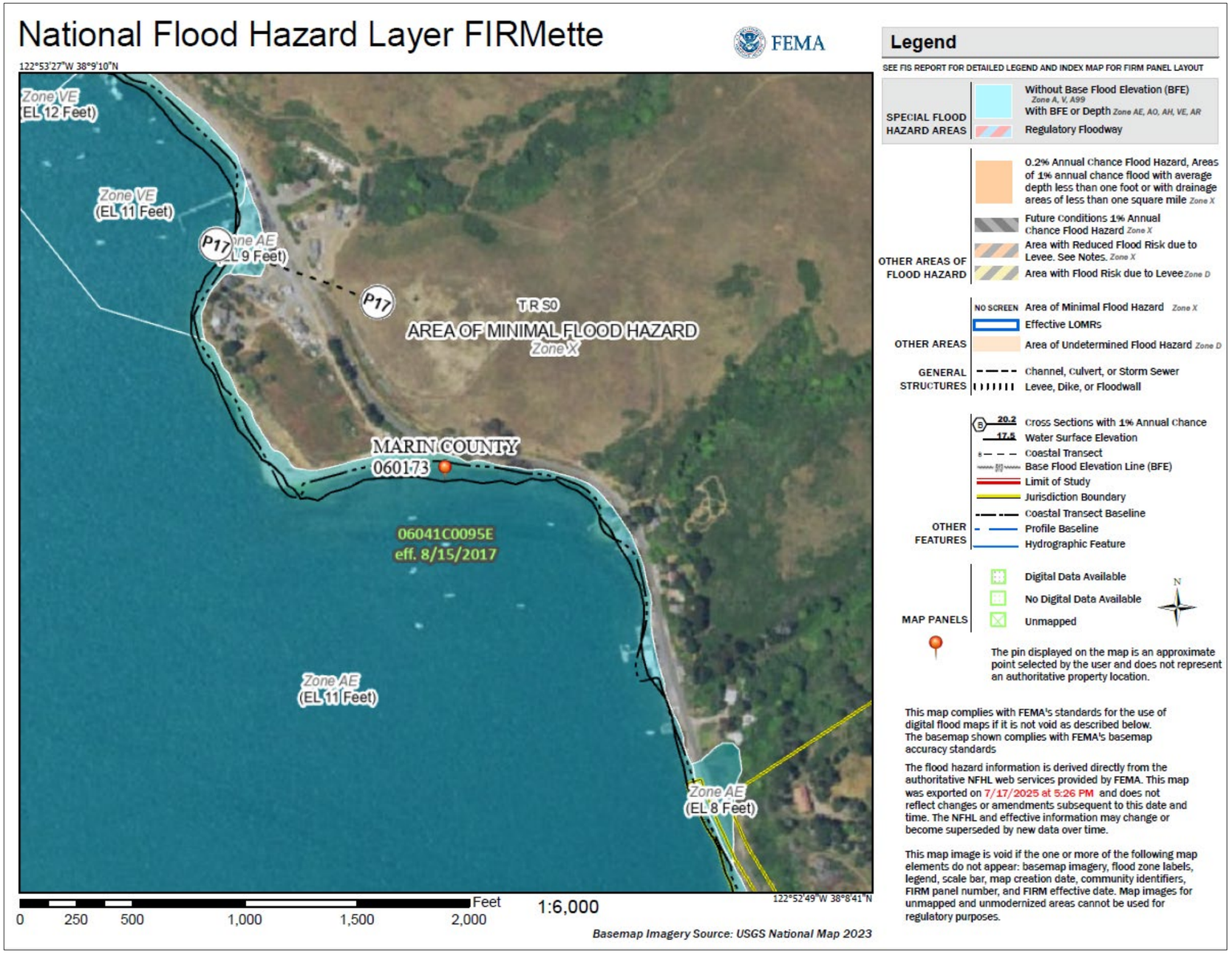

Figure 20. FEMA flood hazard map.

The Project is located in a Mediterranean climate region characterized by warm summers and mild wet winters, with the rainy season between October 15 and April 15 (Department Construction Site Best Management Practices Manual, March 2024). Average annual precipitation within the HUC is 33.9 inches. Based on information found within the National Resources Conservation Service (NRCS) Web Soil Survey tool, soil found within the Project area is classified as “C/D”, with the soil type as Soulajule/Felton-Variant. The “C/D” classification indicates dual hydrologic soil group designation, meaning the soil is classified as Group D under natural (undrained) conditions but may function as Group C if adequately drained. This soil type has moderately high to high runoff potential when thoroughly wet.

Environmental Consequences

To assess Hydrology and Water Quality impacts, a WQS and LHS were prepared. The discussion of impacts under each of the following CEQA checklist questions applies to both proposed Build Alternatives unless otherwise noted.

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

Potential temporary impacts to water quality may result from staging and active construction areas, which could result in the release of fluids, construction debris, sediment, and litter beyond the perimeter of the Project area. Impacts may include a change in localized turbidity of Tomales Bay. No long term impacts are anticipated. With the use of a super sac cofferdam (Section 1.6.1), impacts are anticipated to be less than significant with mitigation.

b) <u>No Impact</u>

The Project would not decrease groundwater supplies or interfere with groundwater recharge. While temporary dewatering would be required, the water being removed is saline ocean water, not fresh water from a ground water basin, and the activity would be limited to construction. No long-term groundwater extraction would occur, and the Project would not result in an increase in impervious surface area. Therefore, the Project would not impede sustainable groundwater management within the basin.

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

Soil within the Project area has moderately high to high runoff potential when thoroughly wet. Minimization measures would be employed to control sediment and reduce risk of erosion during construction activities.

Existing drainage patterns will not be altered, and the Project does not affect risk of flooding or damage to residences, buildings, or crops. The Project impact to the floodplain is less than significant and therefore no measures to minimize floodplain impacts are warranted.

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

Proposed fill within Tomales Bay is negligible and would not affect the Base Flood Elevation or alter flood flows. The Project would not involve the storage of hazardous materials, and standard construction best management practices would be implemented. Therefore, the risk of pollutant release due to inundation would be less than significant.

e) <u>No Impact</u>

The proposed Project would require a Section 404 permit issued by USACE and a CWA 401 Water Quality Certification from the San Francisco RWQCB. Permits would require Project implementation of measures in accordance with applicable water quality control plans. The Project will not impact groundwater supplies. The proposed Project would not conflict with or obstruct the implementation of a water quality control plan or sustainable groundwater management plan.

Avoidance, Minimization, and/or Mitigation Measures

With mitigation incorporated, the Project has been determined to have a less than significant impact on hydrology and water quality. Caltrans anticipates incorporating the following AMM and Mitigation Measure (MM). All proposed AMMs and MMs are listed here and in Appendix C.

AMM-WQ-01: Sediment Control. BMPs such as silt fence, fiber roll, concrete wash-out and street sweeping would be deployed for sediment control and material management.

MM-WQ-02: Cofferdam. Temporary dewatering and water treatment systems will be implemented to support construction activities. Dewatering will be implemented, to provide for a dry working environment within Tomales Bay.

2.1.11 Land Use and Planning

Considering information in the Marin Countywide Plan (2023), the following significance determinations have been made:

Question—Would the project:	CEQA Significance Determinations for Land Use and Planning
a) Physically divide an established community?	**No Impact**

Question—Would the project:	CEQA Significance Determinations for Land Use and Planning
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	**No Impact**

Affected Environment

Within the Project area, SR 1 is a conventional, two-lane rural highway that functions as the primary north-south travel corridor through West Marin County. This segment of SR 1 provides regional and local access between the coastal communities of Point Reyes Station, Marshall, Tomales, and southern Sonoma County.

The land adjacent to the Project area is predominantly low-density rural land and is classified as Grazing Land, Other Land, and Farmland of Local Importance (see Section 2.1.2). Less than a mile north and south of the Project site, *Urban and Built-up Land* is found along Tomales Bay.

The Project is located in the Coastal Zone and requires a consolidated CDP from the Marin LCP and CCC. Permit consolidation approval was received from the Marin County Community Development Agency on November 20, 2025. A CDP application would be submitted to the CCC in the PS&E phase of the Project.

Several CDPs have been issued for various locations along Tomales Bay including for RSP along Reynolds Cove. Broader planning coordination efforts involving a long-term adaptation solution are planned for the SR 1 corridor including within this Project vicinity (2028 SHOPP cycle). This future Project would consider nature-based solutions such as those envisioned by the *Tomales Bay Living Shoreline Feasibility Project* (2022), including creek-to-bay reconnection, placement of rocky intertidal habitat features, native oyster restoration, submerged aquatic vegetation management, tidal flat restoration, tidal marsh restoration, and construction of beaches, dunes and rocky habitat appropriate to the Tomales Bay setting. Further, it would leverage reports (e.g., Transportation Concept Report: State Route 1 North, 2021) and collaborative working groups (e.g., Marin County Coastal Communities Working Group) to create a larger corridor plan focused on addressing access, enhancement, and demand.

In coordinating with the CCC, the agency suggested the Project consider bolstering the existing coarse beach upcoast of the existing RSP to prevent edge effects (worsened erosion at ends of armoring structures). Level of drift would depend on the ultimate grain size distribution with coarser material (gravel sized) sticking around for longer than finer material (sand). This suggestion is outside of the scope and budget of the proposed Project, would require modification to a substantially

larger section of the beach, and lacks sufficient case studies demonstrating effectiveness in similar coastal settings.

In determining consistency with the California Coastal Act, the following topics were evaluated:

Public Access

The beach within the Project area is privately owned. Along this section of SR 1, bicyclists share the paved roadway shoulder, as there are no dedicated bike lanes or formal facilities within the project limits. Bicycle use is primarily recreational. During the single lane closure, bicyclists will be allowed through.

Aesthetics

The Project is located within a highly scenic landscape characterized by Tomales Bay. The studied segment of SR 1 (PM 32.7) runs along the shoreline just feet above the water, providing expansive views of the bay and across the water to Point Reyes National Seashore and Tomales Bay State Park.

Due to the proposed large footprint and consequent break in geometry from the existing RSP slope, Alternative 1 is anticipated to have adverse visual effects. Alternative 2 would not have an adverse effect on a scenic vista to or across Tomales Bay. A detailed breakdown of the visual resources within this project can be found in Section 2.1.1.

Environmentally Sensitive Habitat Areas (ESHAs)

The project area includes coastal wetland and estuarine waters aquatic resources. ESHAs are identified based on their significant ecological value, including habitats that support rare, threatened, or endangered species, and areas crucial for wildlife migration and breeding. These habitats encompass diverse coastal environments, such as wetlands, estuaries, riparian corridors, and coastal sage scrub. The designation of ESHA aims to safeguard these areas from development and other disturbances that could degrade their ecological functions. A discussion of the impacts to ESHA can be found below in this section and is further discussed in Section 2.1.4.

Environmental Consequences

Under the No Build Alternative, no construction improvements would occur. However, existing coastal resources would continue to be impacted by natural coastal processes, including the ongoing erosion along SR 1. Public access would be impacted in the event of erosion causing failure of SR 1 in this area, the severity of which could result in partial or full closure of SR 1. Visual resources, including natural shoreline features, would remain subject to change from natural coastal erosion, in line with Section 30251, which requires protection of scenic qualities. While the No Build Alternative would avoid construction-related impacts proposed

under the Build Alternative, the ongoing erosion would continue to impact ESHAs and scenic resources within the project area.

In evaluating the proposed Build Alternatives, Alternative 2 would have less visual impact than Alternative 1. Under either Build Alternative, public access would be maintained at its current level. Traffic Management will work to minimize temporary delays from one-way traffic control measures. Construction of either Build Alternative will reduce risk of unplanned closures of SR 1 due to erosion.

The proposed project would impact ESHAs through the placement of fill (i.e., RSP or Gabion Wall with RSP). Within the project area, 0.008 acres of palustrine emergent wetland (WET-01) was delineated in the northwestern portion of the BSA. The wetland is isolated with no surface connectivity to jurisdictional waters. The wetland ESHA will not be impacted by either Build Alternative. Additionally, Tomales Bay extends into the southern portion of the BSA and was delineated as an estuarine water feature. A total of 0.279 acres of estuarine waters were delineated within the BSA. As proposed, the Project would result in permanent impacts of 0.02 acres for Alternative 1 or 0.008 acres for Alternative 2. The extent of fill would not substantially alter estuarine functions or processes of Tomales Bay. Accordingly, while impacts would be permanent, they would not result in a substantial adverse change to the estuarine water resource. For further discussion of Coastal ESHAs, please see Section 2.1.4.

Key provisions of the California Coastal Act (CCC 2019) are provided below, along with an evaluation of consistency for the Build Alternatives (Table 10).

Table 10. Key Provisions of the California Coastal Act.

Section Number	Coastal Resource/Coastal Act Policy	Coastal Zone Assessment	Detailed Resource Discussion
30231	*Biological activity; water quality*	With the proposed AMMs, the Project would not have a significant effect on biological activity or water quality.	Section 2.1.4
30232	*Protect against oil, gas, petroleum, hazardous substances spill*	The Project would not harm the environment due to spillage of hazardous substances during construction.	Section 2.1.9
30233	*Diking, filling, dredging of wetlands*	Based on the design and location of the proposed project, construction activities would have direct impacts to coastal wetlands and water bodies within the BSA.	Section 2.1.4

		Effects will be minimized through the use of AMMs.	
30235	*Construction altering natural shoreline*	This project will alter the natural shoreline. Effects will be minimized through the use of AMMs.	Section 1.4
30240	*ESHAs*	This project will directly impact Coastal ESHAs. Effects will be minimized through the use of AMMs.	Section 2.1.4
30241-30242	*Agricultural land*	The Project would not affect agricultural land.	Section 2.1.2
3044	*Archaeological/ Paleontological resources*	The project would not affect paleontological resources. Potential effects to archaeological resources would be minimized through implementation of AMMs.	Sections 2.1.5, 2.1.7, and 2.1.18
30251	*Scenic and visual qualities*	Alternative 1 has a larger footprint in comparison to Alternative 2 and would result in up to 12 feet of beach encroachment. Alternative 2 would result in no beach encroachment. AMMs deployed would protect and enhance visual qualities.	Section 2.1.1
30253	*Minimization of adverse impacts*	The project would aid in creating structural stability and protect against erosion.	Section 1.4
30254	*Public works facilities*	The project would not change the function of SR 1 at this location; it would remain a two-lane highway.	Section 2.1.15
30604	*Coastal Development permits shall include a finding that the development is in conformity with public access and public recreation policies, housing*	The project would be in conformity with public access and public recreation policies. This project does not involve any opportunities for housing.	Section 2.1.14

	opportunities for low- and moderate-income persons.		
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.	Section 1.11

The discussion of impacts under each of the following CEQA checklist questions applies to both proposed Build Alternatives unless otherwise noted.

a) <u>No Impact</u>

The Project would not physically divide an established community. Project construction would implement temporary single-lane closure along SR 1. While temporary full closure is anticipated to place the cofferdam, a traffic management plan (TMP) would be developed. The Project would not result in permanent alteration to the transportation system or permanent changes that would divide an established community.

b) <u>No Impact</u>

The proposed Project is generally consistent with the California Coastal Act and the Marin County LCP. Early coordination with the CCC and LCP has occurred and will continue to occur throughout the life of the Project (Section 1.11; Chapter 4).

Section 30253 of the Coastal Act requires new development to avoid contributing significantly to erosion, geologic instability, or destruction of a site or surrounding area, and prohibits the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs. The Project would install a slope stabilization (i.e., erosion control) measure to protect the roadway embankment from scour, erosion, and slope failure. Although shoreline protective devices are generally discouraged, Section 30235 of the Coastal Act allows armoring in limited circumstances when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to minimize impacts on local shoreline sand supply. To demonstrate the proposed armoring is the only feasible option, a full range of alternatives was evaluated.

The Project would armor SR 1 to prevent further erosion and slope failure along SR 1. To address these needs, the Project proposes installing slope stabilization features such as RSP or gabion baskets. This approach is consistent with and anticipated to meet the existing structure exemption outlined in Section 30235 of the Coastal Act. Appropriate minimization and mitigation measures would be implemented to limit impacts to environmental resources.

Avoidance, Minimization, and/or Mitigation Measures

The Project has been determined to have a less than significant impact on land use or planning. Therefore, no mitigation is proposed. Caltrans anticipates incorporating the following AMMs. All proposed AMMs are listed here and in Appendix C.

> **AMM-TRANS-01: Traffic Management Plan.** To minimize potential effects from construction activities to motorists, bicyclists, or pedestrians using local streets, a TMP would be developed by Caltrans and implemented throughout construction. The TMP would include press releases to notify and inform motorists, bicyclists, businesses, community groups, local entities, and emergency services of upcoming closures and detours affecting travel way lanes. The TMP would also include elements such as portable Changeable Message Signs and the CHP Construction Zone Enhanced Enforcement Program (COZEEP) would be utilized to minimize traffic delays and to address the safety needs for commuters, bicyclists, and highway workers.

2.1.12 Mineral Resources

Considering the information in the Marin Countywide Plan (2023) and California Geological Survey Mineral Resource Zone Map, the following significance determinations have been made:

Question—Would the project:	CEQA Significance Determinations for Mineral Resources
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	**No Impact**
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	**No Impact**

Affected Environment

The State Mining and Geology Board identifies and maps mineral deposits of statewide and regional significance under the Surface Mining and Reclamation Act (SMARA). Within the North Bay region (Sonoma, Marin, and Napa counties), the primary mineral resources consist of crushed stone, alluvial sand and gravel, and other construction-grade aggregate materials used for asphaltic concrete, road base, engineered fill, and Portland cement concrete (Marin Countywide Plan 2023).

The Project is not located in a state designated mineral resource preservation site or Marin County permitted mineral resource site (Marin Countywide Plan 2023). The

Project area is located in Mineral Resource Zone 3 (MRZ-3) – areas containing mineral occurrences of undetermined mineral resource significance.

Environmental Consequences

No impact to mineral resources are anticipated under either Build Alternative. The discussion of impacts under each of the following CEQA checklist questions applies to both proposed Build Alternatives unless otherwise noted.

a) <u>No Impact</u>

The Project would not result in the loss of availability of a known mineral resource that would be of value.

b) <u>No Impact</u>

The Project would not result in the loss of availability of a locally important mineral resource recovery site.

Avoidance, Minimization, and/or Mitigation Measures

The Project has been determined to have no impact on mineral resources. Therefore, no mitigation is proposed.

2.1.13 Noise

Considering the information from the Caltrans Office of Environmental Engineering (Air and Noise Branch) dated May 29, 2025, the following significance determinations have been made:

Question—Would the project result in:	CEQA Significance Determinations for Noise
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	**No Impact**
b) Generation of excessive groundborne vibration or groundborne noise levels?	**No Impact**

Question—Would the project result in:	CEQA Significance Determinations for Noise
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	**No Impact**

Affected Environment

Refer to Section 2.1.6 (Energy) for a discussion of affected environment.

Environmental Consequences

This Project does not qualify as a Type I or Type II Project under 23CFR 772. Noise abatement does not need to be considered, and a Noise Study Report is not required.

Noise generated by the Project would be temporary construction noise, and standard Caltrans noise abatement measures would be applied to reduce noise. The discussion of impacts under each of the following CEQA checklist questions applies to both proposed Build Alternatives unless otherwise noted.

a) <u>No Impact</u>

The Project would not generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

b) <u>No Impact</u>

The Project does not include features or construction activities that would result in excessive ground-borne vibration or ground-borne noise for nearby receptors.

c) <u>No Impact</u>

The Project is not located within the vicinity of a private airstrip, an airport land use plan, or within two miles of a public airport or public use airport. Therefore, the Project would not expose people residing or working in the Project area to excessive aviation noise.

Avoidance, Minimization, and/or Noise Abatement Measures

The Project has been determined to have no impact on noise. Therefore, no mitigation is proposed.

2.1.14 Population and Housing

Considering the information in the Marin County General Plan and Farmland Mapping and Monitoring Program, the following significance determinations have been made:

Question—Would the project:	CEQA Significance Determinations for Population and Housing
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	**No Impact**
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	**No Impact**

Affected Environment

Land adjacent to the Project area is predominantly low-density rural land and is classified as Grazing Land (0.1 acres), Other Land (59 acres) and Farmland of Local Importance (5,454 acres). Less than one mile south of the Project site is the town of Marconi, classified as *Urban and Built-up Land*. Approximately 0.2 miles north of the Project site, development along Tomales Bay begins toward Marshall. *Urban and Built-up Land* immediately north and south of the Project site totals approximately 67 acres.

There are no residential homes within the Project area, and no ROW would be acquired.

Environmental Consequences

According to the First Cut Growth Analysis (Caltrans 2006), the Project does not have the potential to change accessibility. Therefore, growth related impacts are not anticipated for this Project.

No impacts to population or housing are anticipated under either Build Alternative. The discussion of impacts under each of the following CEQA checklist questions applies to both proposed project Build Alternatives unless otherwise noted.

a) <u>No Impact</u>

The Project would not induce indirect or direct growth. No new commercial or residential establishments would be built, and no travel lanes would be added to SR 1. Roadway capacity would not increase; therefore, unplanned population growth is not anticipated.

b) <u>No Impact</u>

The Project would not displace existing housing or people that would necessitate the construction of replacement housing elsewhere.

Avoidance, Minimization, and/or Mitigation Measures

The Project has been determined to have no impact on population or housing. Therefore, no mitigation is proposed.

2.1.15 Public Services

Considering the information in the Traffic Management Data Report, Draft Lane Closure Chart Memo, and Marin Countywide Plan, the following significance determinations have been made:

Question:	CEQA Significance Determinations for Public Services
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: Fire protection?	**No Impact**
Police protection?	**No Impact**
Schools?	**No Impact**
Parks?	**No Impact**
Other public facilities?	**No Impact**

Affected Environment

Approximately 0.2 miles north of the Project area, there is a United States Postal Office (Figure 21). Further, about 8 miles north and south of the Project area are two schools. Substantial alteration of existing facilities are not anticipated.

Figure 21. United States Postal Office north of project area.

Environmental Consequences

No impacts to public services are anticipated under either Build Alternative. The discussion of impacts under each of the following CEQA checklist questions applies to both proposed Build Alternatives unless otherwise noted.

a) <u>No Impact</u>

The Project would not result in substantial alteration of government facilities, such as fire and police protection, schools, parks, or other public facilities. Additionally, the Project would not trigger the need for new government facilities or alter the demand for public services.

Traffic management would require temporary full and lane/shoulder closures on SR 1 for the Project. Due to equipment size, a full closure would be required to install the cofferdam. As such, the cofferdam would be placed at night (11pm - 6am) on a weekday (i.e., Monday – Thursday). The placement of the cofferdam would require two nights of full closure. To perform slope repair, Caltrans anticipates temporary, single lane closure and long-term one-way traffic control with temporary signals. During the single lane closure, there will be delays of up to 5 minutes and bicyclist will be allowed through. Caltrans will work with the school districts to ensure delays are minimal.

A TMP would be prepared in the PS&E phase of the Project to minimize traffic delays and provide accommodation for police, schools, fire, emergency, and medical services in the local area during construction.

Avoidance, Minimization, and/or Mitigation Measures

The Project has been determined to have a less than significant impact on public services. Therefore, no mitigation is proposed. Caltrans anticipates incorporating the following AMMs. All proposed AMMs are listed here and in Appendix C.

> **AMM-TRANS-01: Traffic Management Plan.** To minimize potential effects from construction activities to motorists, bicyclists, or pedestrians using local streets, a TMP would be developed by Caltrans and implemented throughout construction. The TMP would include press releases to notify and inform motorists, bicyclists, businesses, community groups, local entities, and emergency services of upcoming closures and detours affecting travel way lanes. The TMP would also include elements such as portable Changeable Message Signs and the CHP Construction Zone Enhanced Enforcement Program (COZEEP) would be utilized to minimize traffic delays and to address the safety needs for commuters, bicyclists, and highway workers.

2.1.16 Recreation

Considering the information in the Marin Countywide Plan (2023), the following significance determinations have been made:

Question—Would the project:	CEQA Significance Determinations for Recreation
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	**No Impact**
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	**No Impact**

Affected Environment

Point Reyes National Seashore and Tomales Bay State Park occur near the Project area. The Project would not alter roadway capacity or traffic patterns in a way that might increase the use of the existing recreational facilities or require the construction or expansion of recreational facilities. All existing recreational facilities would be accessible during and after construction.

Environmental Consequences

No impacts to recreation are anticipated under either Build Alternative. The discussion of impacts under each of the following CEQA checklist questions applies to both proposed Build Alternatives unless otherwise noted.

a) <u>No Impact</u>

The Project would not increase the use of existing neighborhood and regional parks or other recreational facilities and would not directly or indirectly increase the demand of existing recreational facilities such that substantial deterioration of the facilities would occur.

b) <u>No Impact</u>

The proposed Project does not require the construction or expansion of recreational facilities.

Avoidance, Minimization, and/or Mitigation Measures

The Project has been determined to have no impact on recreation. Therefore, no mitigation is proposed.

2.1.17 Transportation

Considering information in the Traffic Management Data Report, Draft Lane Closure Chart Memo, Countywide Transportation Plan, and Marin Countywide Plan, the following significance determinations have been made:

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

Affected Environment

Within the Project area, SR 1 is a conventional, two-lane rural highway that functions as the primary north-south travel corridor through West Marin County. This segment of SR 1 provides regional and local access between the coastal communities of Point Reyes Station, Marshall, Tomales, and southern Sonoma County. SR 1 is also designated as part of the Pacific Coast Bicycle Route. Bicycle use is relatively common along the corridor. Within the Project area, cyclists travel within the vehicular travel lane or shoulders (2 feet north- and south-bound). No pedestrian facilities are present within the Project area.

Local transportation planning in Marin County is led by several agencies with different roles. The Transportation Authority of Marin (TAM) serves as the County's Congestion Management Agency and administers the Countywide Transportation Plan (CTP), which outlines long-range multimodal planning priorities for Marin

County, including strategies for roadway preservation, bicycle and pedestrian safety, emergency access, and reductions in vehicle miles traveled (VMT). The Marin County Community Development Agency prepares and maintains the Marin Countywide Plan and LCP, which establish long-term land use and transportation policies for unincorporated coastal areas.

The Metropolitan Transportation Commission (MTC) serves as both the Regional Transportation Planning Agency and the federally designated Metropolitan Planning Organization for the Bay Area. Plan Bay Area 2050, prepared by MTC, serves as the region's long-range transportation and land use plan and establishes countywide transportation investment strategies and Sustainable Communities Strategy requirements.

Environmental Consequences

The discussion of impacts under each of the following CEQA checklist questions applies to both proposed Build Alternatives unless otherwise noted.

a) <u>No Impact</u>

The Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, highway, bicycle, and pedestrian facilities. The Project would place a slope stabilization (i.e., erosion control) measure to protect the embankment from scour, erosion, and slope failure. The scope of work for this Project supports the goals outlined in the transit plans for Marin County that are listed above. The Project would maintain and improve all existing highway facilities and would not permanently alter the circulation or increase the capacity of SR 1 within the Project area.

A TMP (AMM-TRANS-01) would be developed to minimize potential effects from construction to all users. The TMP would include press releases to notify and inform the public of upcoming closures and detours affecting travel way lanes and bicycle lanes. The TMP would also include portable Changeable Message Signs as a traveler information strategy. CHP Construction Zone Enhanced Enforcement Program (COZEEP) would be utilized to minimize traffic delays and to address the safety needs for commuters, bicyclists, and highway workers.

b) <u>No Impact</u>

The Project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b). The Project would have no permanent impact on vehicle miles traveled (VMT). Under Section 15064.3, subdivision b, transportation Projects that have no impact on VMT should be presumed to cause no impact on transportation.

c) <u>No Impact</u>

The Project would not increase hazards because of a geometric design feature. The Project would not include any design features or construction elements (such as sharp curves or dangerous intersections) that would substantially increase hazards.

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

This Project does not include changes in the use of the current roadway and would not require or cause changes in the use of adjacent properties. Prior to construction, Caltrans would develop a TMP to minimize delays during both day and nighttime construction. The project would not result in inadequate emergency access.

Avoidance, Minimization, and/or Mitigation Measures

The Project has been determined to have a less than significant impact on transportation. Therefore, no mitigation is proposed. Caltrans anticipates incorporating the following AMMs. All proposed AMMs are listed here and in Appendix C.

> **AMM-TRANS-01: Traffic Management Plan.** To minimize potential effects from construction activities to motorists, bicyclists, or pedestrians using local streets, a TMP would be developed by Caltrans and implemented throughout construction. The TMP would include press releases to notify and inform motorists, bicyclists, businesses, community groups, local entities, and emergency services of upcoming closures and detours affecting travel way. The TMP would also include elements such as portable Changeable Message Signs and the CHP Construction Zone Enhanced Enforcement Program (COZEEP) would be utilized to minimize traffic delays and to address the safety needs for commuters, bicyclists, and highway workers.

2.1.18 Tribal Cultural Resources

Considering the information in the Section 106 Summary Memo dated October 29, 2025, significance determinations in the table below were made.

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:

Question:	CEQA Significance Determinations for Tribal Cultural Resources
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or	**Less Than Significant Impact**

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

Affected Environment

Refer to Section 2.1.5 (Cultural Resources) for a discussion of tribal cultural resources.

Environmental Consequences

The discussion of impacts under each of the following CEQA checklist questions applies to both proposed Build Alternatives unless otherwise noted.

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

To date, Caltrans Office of Cultural Resource Studies has determined that the proposed Project is not located within or adjacent to a site listed or eligible for listing in the California Register of Historic Resources, or a local register or historical resources as defined in PRC section 5020.1(k). A cultural resource considered eligible is adjacent to the Project footprint.

In coordination with the Federated Indians of Graton Rancheria (FIGR), Caltrans determined there is potential to encounter tribal cultural resources. With the implementation of PFs and AMMs, impacts to tribal cultural resources would be less than significant. If previous unidentified cultural resources are discovered, Caltrans would implement tribal consultation protocols in coordination with the representatives of FIGR and other interested Native American groups.

Avoidance, Minimization, and/or Mitigation Measures

The Project has been determined to have a less than significant impact on tribal cultural resources. Therefore, no mitigation is proposed. Caltrans anticipates incorporating the following AMMs. All proposed AMMs are listed here and in Appendix C.

AMM-TRIBCUL-01: Long term cultural monitoring. Caltrans Professionally Qualified Staff (PQS) will prepare a bi-annual monitoring memorandum documenting the status of the known cultural resource. This measure will be in place for five years following the completion of construction. Caltrans will provide the memoranda to FIGR bi-annually and continue consultation on the site conditions.

AMM-CUL-01: Cultural Sensitivity Training. Prior to the initiation of construction for the Project, the Project contractor, staff, and construction crews shall be made aware of the potential to encounter cultural resources and Tribal Cultural Resources (including the traditional importance of resources such as cultural landscapes, significant waterways, and ethnobotanical plants) through a presentation provided by an archaeologist and a representative from the Federated Indians of Graton Rancheria.

AMM-CUL-02: Environmentally Sensitive Area. A vertical and horizontal Environmentally Sensitive Area (ESA) exists for this Project. The ESAs will be delineated on the plans and described in the specifications. Appropriate protective measures including demarcations with flags or high visibility spray paint, or temporary high visibility fencing (THVF), access restrictions, and monitoring of the ESA boundaries by a qualified archaeologist and Tribal representative from the Federated Indians of Graton Rancheria will be implemented during construction.

AMM-CUL-03: Monitoring Area. A Monitoring Area (MA) exists for this Project. The MA will be delineated/noted on the plans and described in the specifications. Appropriate protective measures including demarcations with flags or high visibility spray paint, and monitoring by a qualified archaeologist and Tribal representative from the Federated Indians of Graton Rancheria will be implemented during construction.

2.1.19 Utilities and Service Systems

Considering the information in the email correspondence with Caltrans Office of Utility Engineering dated November 18, 2025, the following significance determinations have been made:

Question—Would the project:	CEQA Significance Determinations for Utilities and Service Systems
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 Impact**

Question—Would the project:	CEQA Significance Determinations for Utilities and Service Systems
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	**No Impact**
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	**No Impact**
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	**No Impact**
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	**No Impact**

Affected Environment

Within the Project area, there are overhead American Telephone and Telegraph (AT&T) lines.

Environmental Consequences

No impacts to utilities or service systems are anticipated under either Build Alternative. The discussion of impacts under each of the following CEQA checklist questions applies to both proposed Build Alternatives unless otherwise noted.

a) <u>No Impact</u>

The Project would not require or result in the relocation or construction of new water or wastewater treatment facilities, storm water drainage, electric power, natural gas, or telecommunications facilities. Nor would the Project result in the expansion of existing facilities.

The Project is not expected to exceed wastewater treatment requirements of the San Francisco Bay RWQCB (Region 2).

b) <u>No Impact</u>

The Project does not require water supplies and would not impact current or future water supply.

c) <u>No Impact</u>

The Project does not require the services of a wastewater treatment provider.

d) <u>No Impact</u>

The Project would not require the services of a solid waste facility. The Project would not impact the capacity of local infrastructure or impair the attainment of solid waste reduction goals.

e) <u>No impact</u>

The Project is anticipated to comply with federal, state, and local statutes and regulations related to solid waste.

Avoidance, Minimization, and/or Mitigation Measures

The Project has been determined to have no impact on utilities or service systems. Therefore, no mitigation is proposed.

2.1.20 Wildfire

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

Question—Would the project:	CEQA Significance Determinations for Wildfire
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	**No Impact**
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	**No Impact**
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	**No Impact**

Question—Would the project:	CEQA Significance Determinations for Wildfire
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	**No Impact**

Affected Environment

The Project area traverses a moderate Fire Hazard Severity Zone in a State Responsibility Area (SRA), as designated by the California Department of Forestry and Fire Protection. An SRA signifies that the State of California is financially responsible for preventing and suppressing wildfires. The Caltrans District 4 Climate Change Vulnerability Assessment indicates that under the MC1 Dynamic Vegetation Model (2025, 2055, and 2085), the Project area is not expected to experience an increased likelihood of wildfires

Environmental Consequences

No impacts from wildfire are anticipated under either Build Alternative. The discussion of impacts under each of the following CEQA checklist questions applies to both proposed Build Alternatives unless otherwise noted.

a) <u>No Impact</u>

All work is expected to occur within State ROW or within TCEs. The Project does not propose changes to the use of SR 1 and would not require or cause changes in the use of adjacent properties. The proposed Project would not substantially impair an adopted emergency response or evacuation plan and a TMP would be developed that would identify traffic diversion and alternate routes. Emergency response times are not anticipated to change during construction because the TMP would provide measures to ensure priority for emergency vehicles during traffic control.

b) <u>No Impact</u>

The Project area traverses a moderate Fire Hazard Severity Zone in a State Responsibility Area (SRA), as designated by the California Department of Forestry and Fire Protection. The proposed Project would not exacerbate wildfire risks.

c, d) <u>No Impact</u>

All Project work is anticipated to occur within State ROW or within TCEs. The Project does not propose to install or maintain infrastructure that would exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. No changes to the use of SR 1 are proposed. Further, the Project would not require or cause changes in the use of adjacent properties.

The Project would not alter topography, drainage patterns, or slope conditions in a manner that would increase risk of post-fire slope instability, landslides, or downstream flooding. The Project would have 0 acres of net new impervious surface area.

Avoidance, Minimization, and/or Mitigation Measures

The Project has been determined to have no impact on wildfire. Therefore, no mitigation is proposed.

2.1.21 Mandatory Findings of Significance

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

Affected Environment

Within Chapter 2, Project impacts to environmental resources revealed significance determinations ranging from no impact to less than significant impact with mitigation incorporated. The Project would have no effect on Agriculture and Forestry Resources, Geology and Soils, Hazards and Hazardous Materials, Land Use and

Planning, Mineral Resources, Noise, Population and Housing, Public Services, Recreation, Transportation, Utilities and Service Systems, and Wildfire. The Project is anticipated to have less than significant impacts on Aesthetics, Air quality, Biological Resources, Cultural Resources, Energy, Greenhouse Gas Emissions, and Tribal Cultural Resources. Finally, with mitigation incorporated, the Project is expected to have less than significant impact on hydrology and water quality.

Impacts to Aesthetics vary by Build Alternative, while impacts to Hydrology and Water Quality and Tribal Cultural Resources are anticipated to be the same for both Build Alternative. Differences between Build Alternatives is minimal for Biological Resources. ROW requirements are the same for each Build Alternative.

Temporary visual impacts would occur under both Build Alternatives during construction due to the presence of construction equipment, material staging, signage, and potential temporary lighting. Short term impacts would be avoided or minimized through PFs and AMMs (Appendix C). Due to the proposed large footprint and consequent break in geometry from the existing RSP slope, permanent moderate adverse visual effects are anticipated under Alternative 1. Alternative 2 is consistent with the geometry of the existing RSP within the Project area and has the potential to increase visual unity. Alternative 2 would result in fewer aesthetic impacts relative to Alternative 1.

Within the BSA, a total of 30 animals are listed under FESA and/or CESA (designated by the USFWS and CDFW) and are of state or federal concern. Additionally, a total of 16 plant species under FESA and/or CESA were identified as having the potential to occur within the BSA. According to field surveys and occurrence data, the potential for identified species to occur within the BSA ranges from none to very low. Impacts to identified species are expected to be approximately the same for each Build Alternative. Within the BSA, there is a palustrine emergent wetland and estuarine water feature. The wetland is isolated with no surface connectivity to jurisdictional waters. Construction of both Build Alternatives result in fill of the bay. Alternative 1 would result in 0.02 acres of permanent impacts, while Alternative 2 would result in 0.008 acres of permanent impacts. While impacts would be permanent, it would not constitute a substantial adverse change to the estuarine water resource.

Potential temporary impacts to water quality may result from staging and active construction areas. Temporary impacts are the same for each Build Alternative. No long-term impacts are anticipated.

In coordination with FIGR, Caltrans determined there is potential to encounter tribal cultural resources. If previous unidentified cultural resources are discovered, Caltrans would implement tribal consultation protocols in coordination with the representatives of FIGR and other interested Native American groups.

Environmental Consequences

Overall, Alternative 2 would have less impact on environmental resources.

The discussion of impacts under each of the following CEQA checklist questions applies to both proposed Build Alternatives unless otherwise noted.

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

While permanent impacts to estuarine water resources are anticipated, the resource would not be substantially adversely changed. Impacts to state and federally listed species are not anticipated. Identified species potential to occur within the BSA ranges from none to low. With implementation of Project PFs and AMMs, impact to environmental resources would be less than significant impact.

b) <u>No Impact</u>

Because the Project will not result in any substantial impacts to the resources identified in this Initial Study, the potential for the Project to contribute to any meaningful cumulative impacts is very low. As a result, the Project would not result in impacts that are individually limited but cumulatively considerable when viewed in conjunction with past, present, or reasonably foreseeable future Projects.

c) <u>No Impact</u>

The Project would not cause direct or indirect effects to human beings. Project impacts are anticipated to be temporary as a result of construction related activities and delays due to traffic management. Overnight and one-way lane closures are anticipated which would cause potential impacts to vehicles traveling through the Project vicinity. With the implementation of PFs and AMMs, impacts would be reduced.

Avoidance, Minimization, and/or Mitigation Measures

Caltrans would incorporate PFs and AMMs into the Project to offset or avoid potential impacts. PFs and AMMs are listed in Appendix C.

Chapter 3 Climate Change

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

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

3.1 Regulatory Setting

For a full list of laws, regulations, and guidance related to climate change (GHGs and adaptation), refer to SER, Chapter 16, Climate Change.

3.1.1 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).

In 2005, EO S-3-05 initially set a goal to reduce California’s GHG emissions to 80 percent below year 1990 levels by 2050, with interim reduction targets. Later EOs and Assembly and Senate bills refined interim targets and codified the emissions reduction goals and strategies. The California Air Resources Board (ARB) was directed to create a climate change scoping plan and implement rules to achieve “real, quantifiable, cost-effective reductions of greenhouse gases.” Ongoing GHG emissions reduction was also mandated in Health and Safety Code (H&SC) Section 38551(b). In 2022, the California Climate Crisis Act was passed, establishing state policy to reduce statewide human- caused GHG emissions by 85 percent below 1990 levels, achieve net zero GHG emissions by 2045, and achieve and maintain negative emissions thereafter.

Beyond GHG reduction, the State maintains a climate adaptation strategy to address the full range of climate change stressors and passed legislation requiring state agencies to consider protection and management of natural and working lands as an important strategy in meeting the state's GHG reduction goals.

3.2 Environmental Setting

The proposed coastal project is in Marin County on SR 1 along Tomales Bay (referred to as Bay hereafter) nestled in Reynolds Cove at post mile 37.2. The Project is proposed in response to storm damage to protect the shoreline from continued erosion that could expose the adjacent transportation system to hazards, thereby increasing risk to the traveling public. The landscape surrounding the project area is characterized by rolling grasslands, rocky outcroppings, and wooded valleys. Land adjacent to the project area is predominantly low-density rural land and is classified as Grazing Land, Other Land, and Farmland of Local Importance. Less than one mile south of the project site is the town of Marconi and approximately 0.2 miles north of the project site is the start of development leading to Marshall (Urban and Built-up Land).

Tomales Bay is a narrow, approximately 15-mile-long, estuarine embayment of the Pacific Ocean nestled between Point Reyes Peninsula and the mainland of Marin County. The Bay averages 1 mile wide and 18 feet deep, tracing a segment of the San Andreas Fault before opening into Bodega Bay. The shoreline consists of national seashore, state and county parks, transportation corridors, and historical and modern development. The Bay contains significant ecological, recreational, and cultural value. The Bay's shoreline supports a diverse range of sensitive coastal habitats which provide critical habitat for migratory birds, fish, shellfish, and marine mammals.

Over the last several centuries, the shoreline has evolved significantly in response to natural processes and human interventions. Studies show ecological resources and human infrastructure along the Bay are under threat of flooding and erosion (Tomales Bay Living Shoreline Feasibility Project 2022*)*. As sea level rises and more extreme and frequent weather conditions occur, keeping SR 1 open has become more difficult and expensive.

Reynolds Cove is characterized by steep coastal bluffs, narrow shoreline beaches, and direct exposure to tidal fluctuations and wave energy. Due to its orientation and topography, it is particularly vulnerable to coastal erosion, storm surge, and roadway instability. Both Marshall (near Hog Island Oyster Company) and Marconi (near the Conference Center) were identified within the 2022 Feasibility Study Report as locations with assets vulnerable to current or projected future flooding and erosion (Figure 22). The proposed project area within this document is located between those two study locations.

In examining long-term shoreline change via shoreline, aerial images from 1965 and 2016, it was found an area near Reynolds Cove has experienced 20 to 40 feet of

erosion (Figure 23) over 51 years. In general, erosional and depositional trends indicate a net southward movement of sediment along the shore. Erosion control efforts within Reynolds Cove are needed to balance infrastructure protection with environmental stewardship needs.

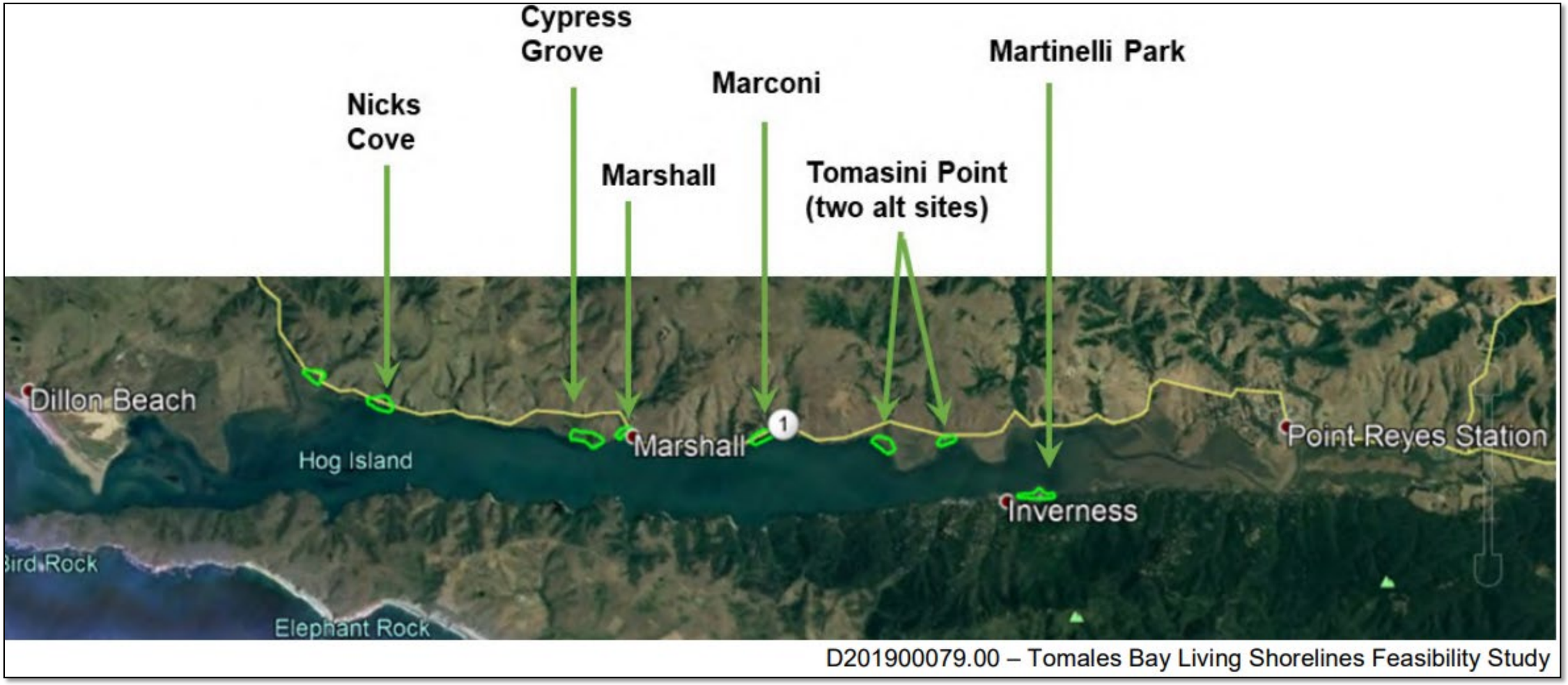

Figure 22. Map of candidate site locations reviewed within the 2022 Tomales Bay Living Shorelines Feasibility Project, Feasibility Study Report.

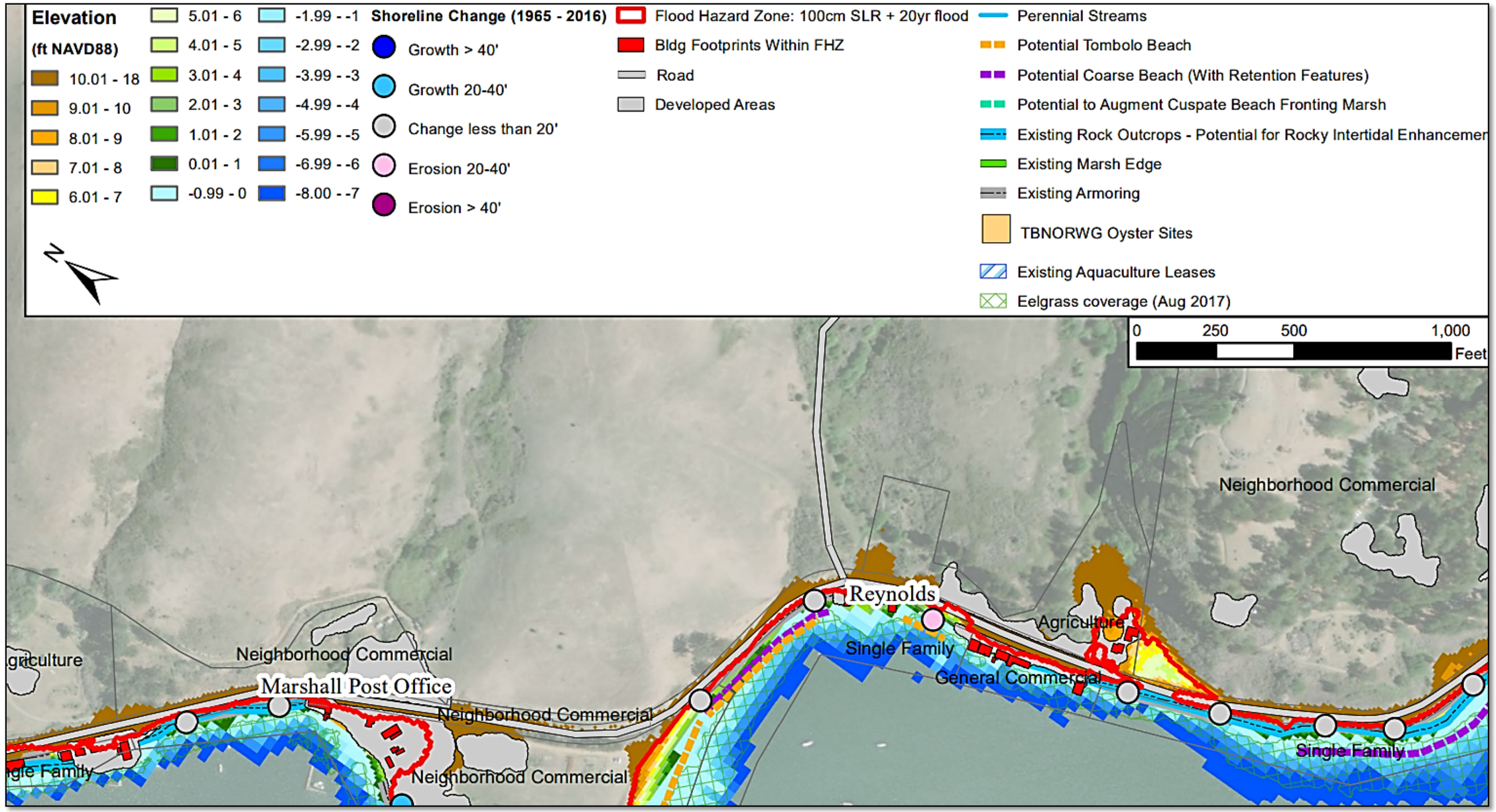

Figure 23. Overlay Map of sea level rise inundation areas, existing features, and potential living shorelines screening sites reviewed within the 2022 Tomales Bay Living Shorelines Feasibility Project, Feasibility Study Report.

Flooding on the shoreline of the Bay is largely caused by winter storm surge events. Storm-related processes that influence surge include low atmospheric pressure, strong winds, and changes in large-scale ocean circulation, particularly during winters associated with El Niño conditions. The magnitude of storm surge depends on the intensity of these processes. Winter storms can also generate waves that pose an additional flood hazard. Flooding impacts can be compounded by increased sediment transport into the Bay during flood events.

Several major flood events have occurred in the Bay in recent decades, with the most destructive event occurring in January 1982. Flooding during this event resulted from a prolonged period of heavy rainfall, which elevated coastal water levels. While heavy rainfall was attributed as the primary cause, coastal water levels were also elevated due to storm conditions and limited flood conveyance (i.e., how well water can flow through an area during heavy rain or high tides without causing flooding or damage).

Climate change may increase stress on the Bay shoreline through rising sea levels, more frequent and intense coastal storms, and changes in rainfall patterns. These conditions can accelerate shoreline erosion and increase flooding. The proposed Project is intended to improve shoreline stability.

3.2.1 GHG Inventories

A GHG emissions inventory estimates the amount of GHGs discharged into the atmosphere by specific sources over a period of time. Tracking annual GHG emissions allows countries, states, and smaller jurisdictions to understand how emissions are changing and what actions may be needed to attain emission reduction goals

National GHG Inventory

The annual GHG inventory submitted by the U.S. EPA to the United Nations provides a comprehensive accounting of all human-produced sources of GHGs in the United States. Total national GHG emissions from all sectors in 2022 were 5,489.0 million metric tons (MMT), factoring in deductions for carbon sequestration in the land sector. (Land Use, Land Use Change, and Forestry provide a carbon sink equivalent to 15% of total U.S. emissions in 2022 [U.S. EPA 2024a].) While total GHG emissions in 2022 were 17% below 2005 levels, they increased by 1% over 2021 levels. Of these, 80% were CO_2, 11% were CH_4, and 6% were N_2O; the balance consisted of fluorinated gases. From 1990 to 2022, CO_2 emissions decreased by only 2% (U.S. EPA 2024a).

The transportation sector's share of total GHG emissions remained at 28% in 2022 and continues to be the largest contributing sector (Figure 24). Transportation activities accounted for 37% of U.S. CO_2 emissions from fossil fuel combustion in 2022. This is a decrease of 0.5% from 2021 (U.S. EPA 2024a, 2024b)).

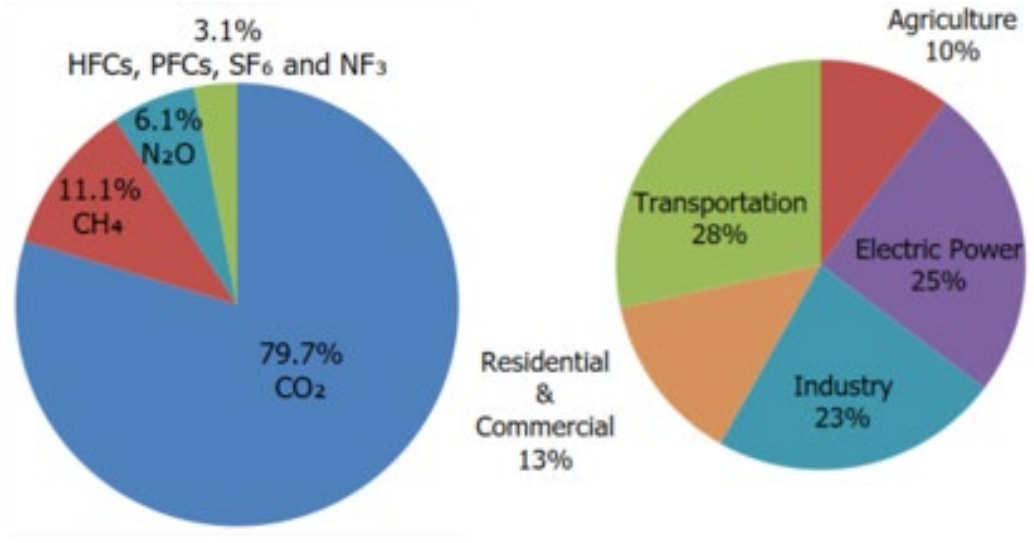

Figure 24. U.S. 2022 Greenhouse Gas Emissions.

State GHG Inventory

ARB collects GHG emissions data for transportation, electricity, commercial/residential, industrial, agricultural, and waste management sectors each year. It then summarizes and highlights major annual changes and trends to demonstrate the state's progress in meeting its GHG reduction goals. Overall statewide GHG emissions declined from 2000 to 2021 despite growth in population and state economic output (Figure 26). Transportation emissions remain the largest contributor to GHG emissions in the state (Figure 25; ARB 2023).

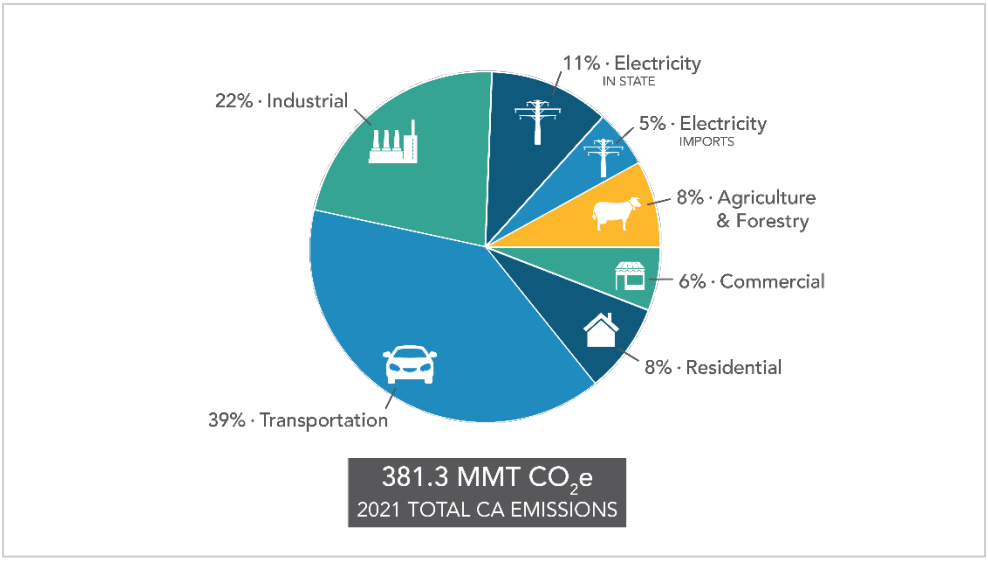

Figure 25. California 2021 Greenhouse Gas Emissions by Economic Sector.

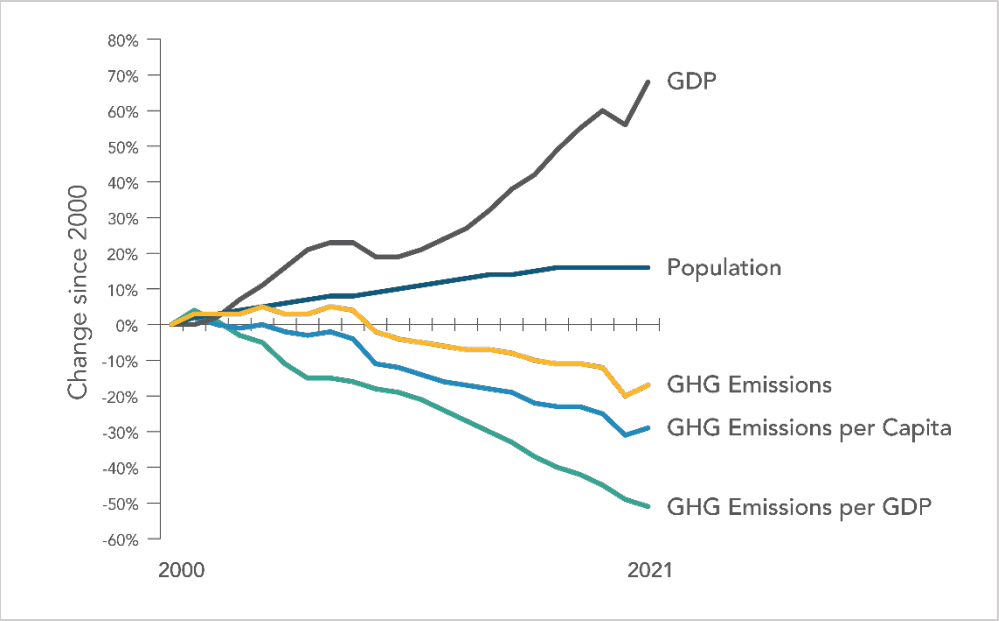

Figure 26. Change in California GDP, Population, and GHG Emissions since 2000.

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. The AB 32 Scoping Plan and the subsequent updates contain the main strategies California will use to reduce GHG emissions. 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 *2022 Scoping Plan for Achieving Carbon Neutrality,* adopted September 2022, assesses progress toward the statutory 2030 reduction goal and defines a path to reduce human-caused emissions to 85 percent below 1990 levels and achieve carbon neutrality no later than 2045, in accordance with AB 1279 (ARB 2022a).

3.2.2 Regional Plans

As required by *The Sustainable Communities and Climate Protection Act of 2008 (Senate Bill 375)*, California Air Resources Board sets regional GHG reduction targets for California's 18 metropolitan planning organizations (MPOs) to achieve through planning future projects that will cumulatively achieve those goals and reporting how they will be met in the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Targets are set as a percentage reduction in passenger vehicle GHG emissions per person, based on 2005 levels The proposed project is included in the RTP/SCS for the Metropolitan Transportation Commission (MTC). The regional reduction target for the Bay Area is 19 percent by 2035 (ARB 2021).

The Marin County Unincorporated Area Climate Action Plan (2020) sets targets for the County to reduce contributions to climate change by 2030. The plan targets 60%

reduction below 2005 GHG levels by 2030. The 'Greenhouse Gas Inventory for Unincorporated Community Emissions: 2030' was used to define this 2030 reduction target. Regional collaboration through Marin Climate and Energy Partnership (MCEP) and community-driven efforts led by Marin Climate Action Network (MarinCAN) further support the implementation and tracking of these GHG reduction goals.

Other Marin County climate resilience planning programs include the Marin County Sea Level Rise Adaptation Program and BayWAVE (Bay Waterfront Adaptation and Vulnerability Evaluation). The Regional Shoreline Adaptation Plan (RASP) developed by the San Francisco Bay Conservation and Development Commission (BCDC) provides framework and guidelines for local governments (e.g., Marin County) to use when crafting subregional shoreline adaptation plans.

3.3 Project Analysis

GHG emissions from transportation projects can be divided into those produced during operation and use of the State Highway System (operational emissions) and those produced during construction. The primary GHGs produced by the transportation sector are carbon dioxide (CO_2), methane, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, and various hydrofluorocarbons. CO_2 emissions are a product of burning gasoline or diesel fuel in internal combustion engines, along with relatively small amounts of methane and nitrous oxide. Additionally, the transportation sector emits a minor amount of hydrofluorocarbon emissions, which are related to refrigeration and air conditioning systems used in vehicles.

GHGs vary in their ability to trap heat in the atmosphere, a characteristic known as global warming potential. CO_2 is the most significant GHG due to its abundance and impact, and thus, the amounts of other gases are expressed relative to CO_2 using a metric called "carbon dioxide equivalent" (CO_2e). The global warming potential of CO_2 is assigned as a value of 1, and the global warming potential of other gases is assigned as multiples of CO_2. Both operational and construction emissions associated with the proposed project are analyzed in the sections below and emission values, if required, are expressed in CO_2e to provide a standardized measure of their impact.

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 greenhouse gases must necessarily be found to contribute to a significant cumulative impact on the environment.

3.3.1 Operational Emissions

The purpose of the proposed project is to restore integrity of the roadway and prevent future coastal erosion and slope washouts. The project would not increase the vehicle capacity of the roadway. This type of project generally causes minimal or no increase in operational GHG emissions. Because the project would not increase the number of travel lanes on SR 1, no increase in vehicle mile travelled (VMT) would occur. While some GHG emissions during the construction period would be unavoidable, no increase in operational GHG emissions is expected.

3.3.2 Construction Emissions

Construction GHG emissions would result from material processing and transportation, on-site construction equipment, and traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. While construction GHG emissions are only produced for a short time, they have long-term effects in the atmosphere, so cannot be considered “temporary” in the same way as criteria pollutants that subside after construction is completed.

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

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

3.3.3 CEQA Conclusion

While the proposed project would result in GHG emissions during construction, it is anticipated that the project would not result in any increase in operational GHG emissions. The proposed project does not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

With implementation of construction GHG-reduction measures, there would be less than significant impact.

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

3.4 Greenhouse Gas Reduction Strategies

3.4.1 Statewide Efforts

In response to Assembly Bill 32, the Global Warming Solutions Act, California is implementing measures to achieve emission reductions of GHGs that cause climate change. Additionally, Caltrans has enacted policies and initiatives to reduce GHG emissions in transportation to reach the state's climate goals. For a full list of statewide and Caltrans GHG reduction strategies, refer to SER, Chapter 16, Climate Change.

Climate change programs in California are effectively reducing GHG emissions from all sectors of the economy. These programs include regulations, market programs, and incentives that will transform transportation, industry, fuels, and other sectors to take California into a sustainable, cleaner, low-carbon future, while maintaining a robust economy (ARB 2022b).

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

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

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

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

3.4.2 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.

Climate Action Plan for Transportation Infrastructure

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

California Transportation Plan

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

Caltrans Strategic Plan

The *Caltrans 2020–2024 Strategic Plan* includes goals of stewardship, climate action, and equity. Climate action strategies include developing and implementing a

Caltrans Climate Action Plan; a robust program of climate action education, training, and outreach; partnership and collaboration; a VMT monitoring and reduction program; and engaging with the most vulnerable communities in developing and implementing Caltrans climate action activities (Caltrans 2021b).

Caltrans Policy Directives and Other Initiatives

Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012) established a policy to ensure coordinated efforts to incorporate climate change into Caltrans decisions and activities. Other Director's policies promote energy efficiency, conservation, and climate change, and commit Caltrans to sustainability practices in all planning, maintenance, and operations. *Caltrans Greenhouse Gas Emissions and Mitigation Report* (Caltrans 2020) provides a comprehensive overview of Caltrans' emissions and current Caltrans procedures and activities that track and reduce GHG emissions. It identifies additional opportunities for further reducing GHG emissions from Department-controlled emission sources, in support of Caltrans and State goals.

3.4.3 Project-Level GHG Reduction Strategies

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

AMM-GHG-01: Idling Restrictions. Contractors shall limit idling of vehicles and construction equipment on-site to reduce fuel use and associated emissions.

AMM-GHG-02: Solar-Powered Traffic Control Devices. If feasible, solar powered signal boards would be used to reduce the use of non-renewable energy during construction.

AMM-ENERGY-01: Vehicle and equipment maintenance. Perform regular vehicle and equipment maintenance.

AMM-ENERGY-02: Reduce Offsite Disposal. To the extent feasible, recycle hazardous waste and excess materials to reduce disposal offsite. If recycling is not practicable, dispose of material.

3.5 Adaptation

While reducing GHG emissions is crucial in combating climate change, it is only one part of the solution. Caltrans must proactively plan for the impact of climate change on California's transportation infrastructure. This involves modifying and protecting facilities to reduce potential damage and build resilience against future climate-related challenges.

Caltrans has conducted District Climate Change Vulnerability Assessments to identify segments of the State Highway System that are vulnerable to climate

change impacts, such as sea level rise, increased temperatures, and extreme weather events. These assessments help prioritize areas for adaptation efforts and inform the development of strategies to enhance the resilience of critical infrastructure.

Additionally, Caltrans periodically prepares a Sustainability Roadmap, which outlines the agency's strategic plans and progress reports aimed at achieving state sustainability goals. The roadmap is a two-year progress report on several important milestones achieved by Caltrans while implementing Executive Orders B-16-12, B-18-12, and the adaptation planning process of Executive Orders B-30-15, N-19-19, and N-82-20.

Refer to SER, Chapter 16, Climate Change for additional information regarding federal, state, and Caltrans adaptation efforts.

3.5.1 State Efforts

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

California's Fourth Climate Change Assessment (Fourth Assessment) (2018) provides information to help decision makers across sectors and at state, regional, and local scales protect and build the resilience of the state's people, infrastructure, natural systems, working lands, and waters. The Fourth Assessment reported that if no measures are taken to reduce GHG emissions by 2021 or sooner, the state is projected to experience an up to 8.8 degrees Fahrenheit increase in average annual maximum daily temperatures; a two-thirds decline in water supply from snowpack resulting in water shortages; a 77% increase in average area burned by wildfire; and large-scale erosion of up to 67% of Southern California beaches due to sea level rise. These effects will have profound impacts on infrastructure, agriculture, energy demand, natural systems, communities, and public health (State of California 2018).

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

To help actors throughout the state address the findings of California's Fourth Climate Change Assessment, AB 2800's multidisciplinary Climate-Safe Infrastructure Working Group published *Paying it Forward: The Path Toward Climate-Safe Infrastructure in California*. This report provides guidance on assessing risk in the face of inherent uncertainties still posed by the best available climate

change science. It also examines how state agencies can use infrastructure planning, design, and implementation processes to respond to the observed and anticipated climate change impacts (Climate-Safe Infrastructure Working Group 2018).

EO S-13-08, issued in 2008, directed state agencies to consider sea level rise scenarios for 2050 and 2100 during planning to assess project vulnerabilities, reduce risks, and increase resilience to sea level rise. It gave rise to the 2009 *California Climate Adaptation Strategy*, the Safeguarding California Plan, and a series of technical reports on statewide sea level rise projections and risks, including the *State of California Sea-Level Rise Guidance Update* in 2018. The reports addressed the full range of climate change impacts and recommended adaptation strategies. The current *California Climate Adaptation Strategy* incorporates key elements of the latest sector-specific plans such as the *Natural and Working Lands Climate Smart Strategy*, *Wildfire and Forest Resilience Action Plan*, *Water Resilience Portfolio,* and the CAPTI (described above). Priorities in the 2023 *California Climate Adaptation Strategy* include acting in partnership with California Native American Tribes, strengthening protections for climate-vulnerable communities that lack capacity and resources, implementing nature-based climate solutions, using best available climate science, and partnering and collaboration to best leverage resources (California Natural Resources Agency 2023).

EO B-30-15 recognizes that effects of climate change threaten California's infrastructure and requires state agencies to factor climate change into all planning and investment decisions. Under this EO, the Office of Planning and Research published *Planning and Investing for a Resilient California: A Guidebook for State Agencies*, to encourage a uniform and systematic approach to building resilience.

SB 1 Coastal Resources: Sea Level Rise (Atkins 2021) established statewide goals to "anticipate, assess, plan for, and, to the extent feasible, avoid, minimize, and mitigate the adverse environmental and economic effects of sea level rise within the coastal zone." As the legislation directed, the Ocean Protection Council collaborated with 17 state planning and coastal management agencies to develop the *State Agency Sea-Level Rise Action Plan for California* in February 2022. This plan promotes coordinated actions by state agencies to enhance California's resilience to the impacts of sea level rise (California Ocean Protection Council 2022).

3.5.2 Caltrans Adaptation Efforts

Caltrans Vulnerability Assessments

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

The climate change data in the assessments were developed in coordination with climate change scientists and experts at federal, state, and regional organizations at

the forefront of climate science. The findings of the vulnerability assessments guide analysis of at-risk assets and development of Adaptation Priority Reports as a method to make capital programming decisions to address identified risks.

Caltrans Sustainability Programs

The Director's Office of Equity, Sustainability and Tribal Affairs supports implementation of sustainable practices at Caltrans. The *Sustainability Roadmap* is a periodic progress report and plan for meeting the Governor's sustainability goals related to EOs B-16-12, B-18-12, and B-30-15. The Roadmap includes designing new buildings for climate change resilience and zero-net energy, and replacing fleet vehicles with zero-emission vehicles (Caltrans 2023).

3.5.3 Project Adaptation Analysis

The Caltrans Climate Change Vulnerability Assessment evaluates the potential for changes to future sea level rise, precipitation and flooding, wildfire risk, and temperature ranges. This section evaluates the potential for each future projection and the potential for tsunamis to affect the proposed project alternatives, as well as identify any steps the project development team (PDT) is taking to incorporate uncertainties from climate change into the project's design.

Sea Level Rise

The proposed project limits are located along the Bay, an estuarine embayment of the Pacific Ocean. SR 1 along the Bay is particularly vulnerable to coastal erosion, storm surge, and roadway instability. Towns north and south of the project area (Marshall and Marconi) have been identified as locations with assets vulnerable to current or projected future flooding and erosion (Figure 22). Over the years, long-term shoreline change has occurred. Areas near Reynolds Cove have experienced 20 to 40 feet of erosion (Figure 23) over the past 51 years. In general, erosional and depositional trends indicate a net southward movement of sediment along the shore. The tidal range in the Project vicinity is approximately 5.8 feet, and waves can reach between 2 feet and 4 feet during storm events (Integral 2025). For more information regarding project setting, please refer to Section 3.2.

Both Build Alternatives would armor the shoreline and protect against future erosion.

According to sea level rise guidance (California Ocean Protection Council 2024) for the Point Reyes tide gauge (closest tide gauge to the project limits), projected sea level rise by 2050 ranges from 0.5 to 1.3 feet (Table 11). Projections for 2050 are relevant as the maximum design life of the project is 20 years.

Table 11. California Ocean Protection Council Sea Level Rise Projections (feet).

Year	Low	Intermediate	High
2030	0.3	0.4	0.5

2040	0.4	0.6	0.8
2050	0.4	0.8	1.3
2060	0.6	1.1	2.0
2070	0.7	1.4	3.0
2080	0.8	1.9	4.1
2090	0.9	2.5	5.4
2100	1.0	3.1	6.6
2110	1.1	3.8	7.9
2120	1.2	4.4	9.0
2130	1.2	4.9	9.9
2140	1.3	5.5	10.9
2150	1.4	6.0	11.8

The Coastal Storm Modeling System (CoSMoS) is a modeling approach developed by the U.S. Geological Survey (USGS) to predict coastal flooding and shoreline change due to sea level rise and coastal storms. This data was used to evaluate sea level rise effects within the Project area (Figure 27).

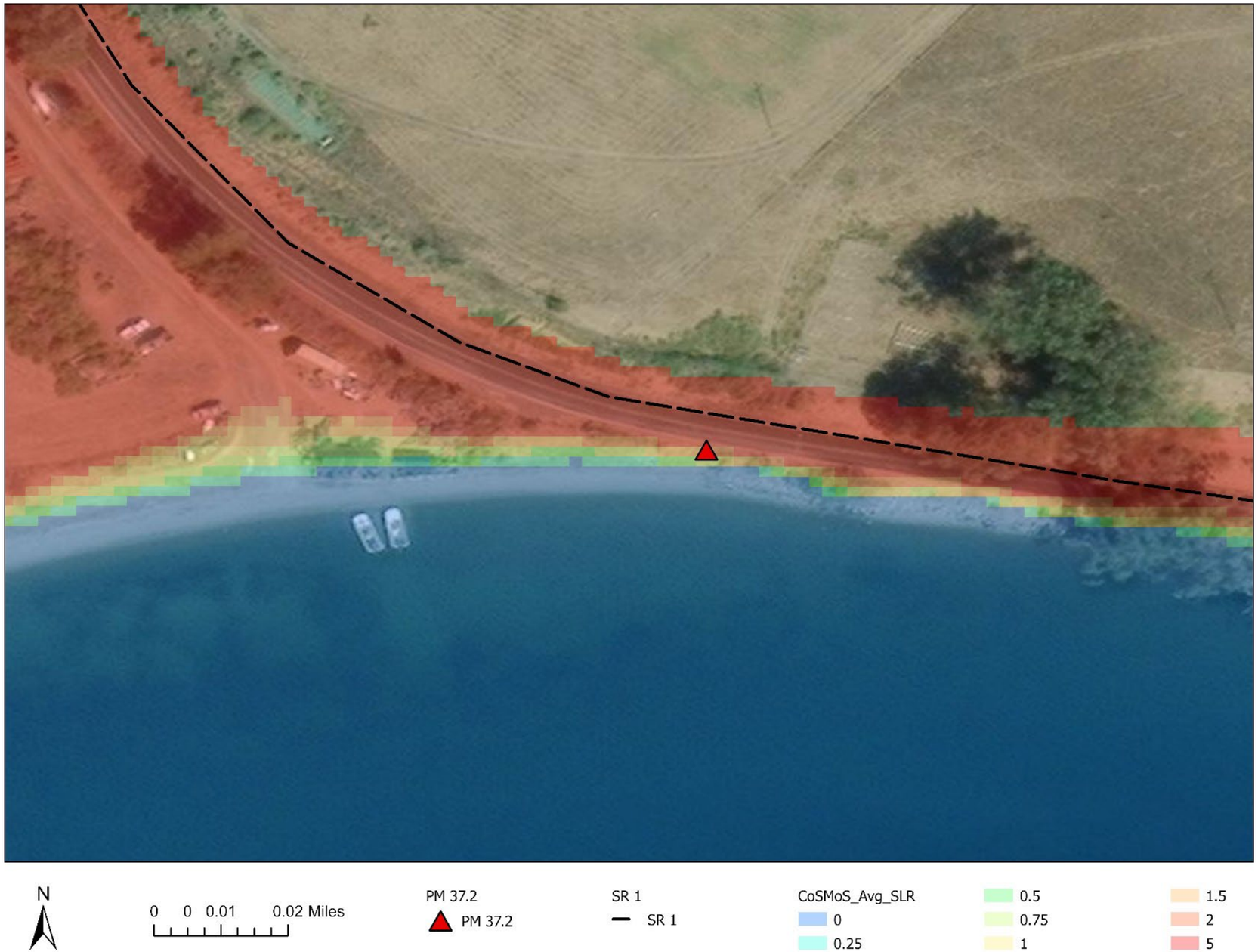

Figure 27. Coastal Storm Monitoring System (CoSMoS) within the project area for various estimated levels of sea level rise (meters).

CoSMoS data shows the project area would be subject to coastal flooding starting at approximately 0.75 meters (2.46 feet) of sea level rise. The project area is projected to be fully flooded at 5 meters of sea level rise.

Both Build Alternatives would address the purpose and need of the project by reducing vulnerability to sea-level-rise-related coastal hazards along the Bay. Rising sea levels and increased frequency and magnitude of storm events are expected to accelerate shoreline erosion and increase coastal flooding. Both Build Alternatives would improve shoreline stability and reduce exposure to wave action and tidal forces.

Precipitation and Flooding

Neither Build Alternative is expected to increase precipitation or flooding. As noted in Section 2.1.10, the project is located within the 100-year floodplain as defined by the FEMA Flood Hazard Mapping (FEMA 2025). The Project area is within floodplain zones AE which indicates a 1% annual chance flood. The project would alter terrain and add fill within the floodplain. Estimated fill for Alternative 1 is 143 yd^3, while estimated fill for Alternative 2 is 47 yd^3. Proposed fill within the Bay is negligible and would not affect the Base Flood Elevation or alter flood flows.

Soil within the project area has moderately high to high runoff potential when thoroughly wet. Minimization measures would be employed to control sediment and reduce risk of erosion during construction activities. Existing drainage patterns are not altered, and the project does not affect risk of flooding or damage to residences, buildings, or crops. The project impact to the floodplain is less than significant and therefore no measures to minimize floodplain impacts are warranted.

The Caltrans District 4 Climate Change Vulnerability Assessment (Caltrans Vulnerability 2019) depicts the potential increase in rainfall depth during 100-year events (1% probability of occurring in any given year due to the sheer volume of rainfall that they produce compared to average rainfall for an area) in District 4 under the Intergovernmental Panel on Climate Change (IPCC) representative concentration pathway (RCP) 8.5 (depicts high emissions). For 2025, 2055, and 2085, the assessment indicates a 5.0 – 9.9% increase in 100-year storm precipitation depth in the Project vicinity.

Caltrans would incorporate the following PFs into the Project to reduce potential impacts from precipitation and flooding. PFs are listed here and in Appendix C.

AMM-WQ-01: Sediment Control. BMPs such as silt fence, fiber roll, concrete wash-out and street sweeping would be deployed for sediment control and material management.

MM-WQ-02: Cofferdam. Temporary dewatering and/or temporary active treatment system are expected for scoped work. A creek diversion would be implemented, to provide for a dry working environment within Tomales Bay.

Wildfire

The project area traverses a moderate Fire Hazard Severity Zone in a State Responsibility Area (SRA), as designated by the California Department of Forestry and Fire Protection.

The Caltrans District 4 Climate Change Vulnerability Assessment indicates that across three project scenarios (2025, 2055, and 2085), the project area is not expected to experience an increased likelihood of wildfires. Proposed Build Alternatives and associated construction activities would not increase the negative effects of wildfires.

Temperature

The Caltrans Climate Change Vulnerability Assessment indicates that average minimum temperatures within the project limits could increase by 4.0 to 5.9 degrees Fahrenheit by 2055 and 8.0 to 9.9 degrees Fahrenheit by 2085. During final design, Caltrans would evaluate construction material choices for the potential future temperature increases. Temperature increases would impact Build Alternatives the same.

Chapter 4 Coordination

The Project requires permits from the USACE, RWQCB (Region 2), and the CCC (Section 1.11). Based on the contact list the NAHC provided (Section 2.1.5), consultation has occurred with the FIGR. Further, technical assistance is required from USFWS and NOAA Fisheries. Accordingly, early coordination has been conducted with these agencies and interested parties.

During the K Phase, as documented in the mini–Preliminary Environmental Analysis Report (PEAR; June 2020), the CCC provided feedback identifying issues that would need to be addressed in subsequent project phases. In noting the Office of Geotechnical Design's recommendation for placement of RSP, the CCC requested that a full range of alternatives be evaluated to consider ways to meet the Coastal Act's requirements and minimize adverse impacts.

In March of 2024, the Caltrans Project Development Team (PDT) acknowledged this request. In consultation with hydraulic consultants, the Caltrans Office of Hydraulic Engineering conducted a Shoreline Protection Feasibility Analysis. In addition to RSP, eight alternatives, including optional routine wave buffering strategies, were identified for evaluation by the PDT. Based on consideration of environmental resources and project constraints, two Build Alternatives were selected for inclusion within the Draft Environmental Document (DED) in August of 2024 (i.e., RSP and Gabion Wall with RSP Façade).

While the CCC requested evaluation of a full range of alternatives to RSP, coordination with other resource agencies (USACE and RWQCB) indicated that gabion walls are not preferred due to potential water quality concerns. To facilitate interagency discussion, a multi-agency field meeting was held September 15, 2025 at the project site with representatives present from the CCC, RWQCB, and FIGR. Due to travel restrictions, the USACE was unable to attend.

During the field meeting, RWQCB stated that, given project constraints, the agency would consider the use of a gabion wall; however, the agency requested an example of a gabion wall installed in a similar environment (i.e., saline). As of March 2026, an applicable example has not been identified.

Following the field meeting, Caltrans shared plans for the two selected alternatives with all agencies (CCC, RWQCB, USACE) and FIGR. The agencies were informed that they would be notified when the DED is published so that external comments on the proposed approach may be provided.

Appendix A Title VI Policy Statement

CALIFORNIA STATE TRANSPORTATION AGENCY

GAVIN NEWSOM, GOVERNOR

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September 2025

TITLE VI/NON-DISCRIMINATION POLICY STATEMENT

It is the policy of the California Department of Transportation (Caltrans), in accordance with Title VI of the Civil Rights Act of 1964 and the assurances set forth in the Caltrans' Title VI Program Plan, to ensure that no person in the United States shall on the grounds 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. Related non-discrimination authorities, remedies, and state law further those protections, including sex, disability, religion, sexual orientation, age, low income, and Limited English Proficiency (LEP).

Caltrans is committed to complying with 23 C.F.R. Part 200, 49 C.F.R. Part 21, 49 C.F.R. Part 303, and the Federal Transit Administration Circular 4702.1B. Caltrans will make every effort to ensure nondiscrimination in all of its services, programs, and activities, whether they are federally funded or not, and that services and benefits are fairly distributed to all people, regardless of race, color, or national origin (including LEP). In addition, Caltrans will facilitate meaningful participation in the transportation planning process in a non-discriminatory manner.

The overall responsibility for this policy is assigned to the Caltrans Director. The Caltrans Title VI Coordinator is assigned to the Caltrans Office of Civil Rights Deputy Director, who then delegates sufficient responsibility and authority to the Office of Civil Rights' managers, including the Title VI Branch Manager, to effectively implement the Caltrans Title VI Program. Individuals with questions or requiring additional information relating to the policy or the implementation of the Caltrans Title VI Program should contact the Title VI Branch Manager at title.vi@dot.ca.gov or at (916) 639-6392, or visit the following web page: https://dot.ca.gov/programs/civil-rights/title-vi.

Dina El-Tawansy (Sep 12, 2025 16:52:12 PDT)

DINA A. EL-TAWANSY
Director

"Improving lives and communities through transportation."

Appendix B List of Abbreviations & Acronyms

American Telephone and Telegraph	AT&T
Archaeological Survey Report	ASR
Area of Potential Effects	APE
Area of Visual Effect	AVE
Asphalt Concrete	AC
Assembly Bill	AB
Avoidance and Minimization Measures	AMMs
Bay Area Air Quality Management District	BAAQMD
Biological Study Area	BSA
California Natural Diversity Database	CNDDB
Black carbon	BC
Bonded Wearing Course	BWC
California Coastal Commission	CCC
California Department of Transportation	Caltrans
California Endangered Species Act	CESA
California Environmental Quality Act	CEQA
National Environmental Policy Act	NEPA
California Environmental Quality Act	CEQA
California Natural Plant Survey	CNPS
Carbon Dioxide	CO_2
Carbon Monoxide	CO
Cast In Place	CIP
Categorical Exclusion	CE
Clean Water Act	CWA
Coastal Development Permit	CDP
Construction Emissions Tool	CAL CET
Council on Environmental Quality	CEQ
Damage Assessment Form	DAF
Edge of Pavement	EOP
Environmental Protection Agency	EPA
Environmentally Sensitive Area	ESA
Extended Phase I	XPI Report
Federal Emergency Management Agency	FEMA
Federal Endangered Species Act	FESA
Federally Engendered	FE
Federated Indians of Graton Rancheria	FIGR
Finding of Effect	FOE
Global Warming Potential	GWP
Greenhouse Gas	GHG
Historic Property Survey Report	HPSR
Historical Resource Evaluation Report	HRER
Hydrofluorocarbons	HFCs
Hydrologic Unit Code	HUC
Initial Study with Mitigated Negative Declaration	ISMND

Information for Planning and Consultation	IPaC
Initial Study Assessment	ISA
Lead	Pb
Local Coastal Program	LCP
Location Hydrology Study	LHS
Methane	CH_4
Metropolitan Transportation Commission	MTC
Monitoring Area	MA
National Marine Fisheries Sciences	NMFS
National Register of Historic Places	NRHP
National Resources Conservation Service	NRCS
Native American Heritage Commission	NAHC
Natural Environment Study	NES
NEPA Process Improvement Team	NPIT
Nitrogen dioxide	NO_2
Nitrous oxide	N_2O
National Marine Fisheries Science	NMFS
Post miles	PM
Project Development Team	PDT
Project Features	PFs
Regional Water Quality Control Board	RWQCB
Right of Way	ROW
Rock Slope Protection	RSP
Sacred Lands File	SLF
Soil Nail Wall	SNW
Standard Environmental Reference	SER
State Endangered	CE
State Highway Operation and Protection Program	SHOPP
State Historic Preservation Officer	SHPO
State Rare	CR
State Responsibility Area	SRA
State Route	SR
State Threatened	CT
State Water Resources Control Board	SWRCB
Storm Damage Restoration Project	Project
Sulfur Dioxide	SO_2
Surface Mining and Reclamation Act	SMARA
Temporary Construction Easement	TCE
Total Maximum Daily Loads	TMDLs
Traffic Management Plan	TMP
Transportation Authority of Marin	TAM
United States Army Corp of Engineers	USACE
United States Coast Guard	USCG
United States Fish and Wildlife Service	USFWS
Vehicle Miles Travelled	VMT
Water Quality Study	WQS

Appendix C Avoidance and Minimization Measures and Mitigation Measures

Aesthetics

AMM-AES-01: Color Treat or Select RSP Material for Compatible Colors. The sourcing/availability of local stone that mimics the appearance of the existing RSP will be investigated. Stones of highly contrasting color should be avoided. If similarly colored rocks are not available, use of Rock Stain shall be considered.

AMM-AES-02: Round Grade Transitions at Hinge Points. Round top and bottom of embankments and slopes to produce topographic geometry that has a natural appearance.

AMM-AES-03: Revegetate Disturbed Areas. Apply erosion control seeding and similar measures to all areas of disturbance where they are beyond paved areas. Hydroseeding of RSP above the high tide line will help minimize the visual impact of newly installed RSP and blend with the surrounding shoreline.

Air Quality

AMM-AQ-01: Control Measures for Construction Emissions of Fugitive Dust. Dust control measures would be implemented to minimize airborne dust and soil particles generated from construction. For disturbed soil areas, the use of tackifier to control dust emissions would be included in the construction contract. Any material stockpiles would be watered, sprayed with tackifier, or covered to minimize dust production and wind erosion.

Biological Resources

AMM-BIO-01: Seasonal Avoidance. To the extent practicable, work will not occur during the wet season. Except for limited vegetation clearing (necessary to minimize impacts to nesting birds), work off paved or bare gravel areas will be limited to the period from May 15 to November 15. On pavement work and work in the compacted road-lens may occur all year, in coordination with the Project Biologist.

AMM-BIO-02: Worker Environmental Awareness Training. Prior to ground-disturbing activities, the Project Biologist will conduct an education program for all construction personnel. At a minimum, the training will include a description of special-status species, migratory birds, and their habitats, how the species might be encountered within the Project area, an explanation of the status of these species and protection under the federal and state regulations, the measures to be implemented to conserve listed species and their habitats as they relate to the work site, boundaries within which construction may occur, and how to best avoid the incidental take of listed species. The field meeting will include topics on

species identification, life history, descriptions, and habitat requirements during various life stages. Emphasis will be placed on the importance of the habitat and life stage requirements within the context of Project maps showing areas where AMMs are to be implemented. The program will include an explanation of applicable federal and state laws protecting endangered species as well as the importance of compliance with Caltrans and various resource agency conditions.

AMM-BIO-03: Environmentally Sensitive Area Fencing. Before starting construction, environmentally sensitive areas (ESAs) (defined as areas containing sensitive habitats adjacent to or within construction work areas for which physical disturbance is not allowed) would be clearly delineated using high-visibility orange fencing. ESA fencing would remain in place until work is complete and would prevent construction equipment or personnel from entering sensitive habitat areas. The ESA fencing also serves to delineate the Project footprint in which all construction activity is to occur. The final Project plans would depict the locations where ESA fencing would be installed and how it would be assembled/constructed. The special provisions in the bid solicitation package would clearly describe acceptable fencing material and prohibited construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within ESAs. The ESA fencing would be removed following completion of construction activities.

AMM-BIO-04: Wildlife Exclusion Fencing. Before starting construction, at the discretion of the Caltrans biologist, wildlife exclusion fencing (WEF) may be installed along the Project footprint perimeter in the areas where wildlife could enter the Project site. The final Project plans will depict the locations where WEF will be installed, if needed, and how it will be assembled/constructed. The special provisions in the bid solicitation package will clearly describe acceptable WEF fencing material and proper WEF installation and maintenance. The WEF will remain in place until work is complete and will be regularly inspected for stranded animals and fully maintained daily. The WEF will be removed following completion of construction activities.

AMM-BIO-05: Stormwater Best Management Practices. In accordance with RWQCB requirements, a Stormwater Pollution Prevention Plan will be developed and erosion control BMPs implemented to minimize wind- or water-related erosion. The Caltrans Construction Site BMP Manual (Caltrans 2017) provides guidance for the inclusion of provisions in all construction contracts to protect sensitive areas and prevent and minimize stormwater and non-stormwater discharges. At a minimum, protective measures will include the following:

A. Prohibiting discharge of pollutants from vehicle and equipment cleaning into storm drains or watercourses.

B. Maintaining equipment to prevent the leakage of vehicle fluids, such as gasoline, oils, or solvents. Hazardous materials such as fuels, oils, solvents,

etc. will be stored in manufacturer approved containers in a designated location that is at least 50 feet from aquatic habitats.

C. Servicing vehicles and construction equipment, including fueling, cleaning, and maintenance at least 50 feet from aquatic habitat, unless separated by topographic or engineered drainage barrier.

D. Collecting and disposing of concrete wastes and water from curing operations in appropriate washouts, located at least 50 feet from watercourses.

E. Maintaining spill containment kits onsite at all times during construction operations and/or staging or fueling of equipment

F. Using water trucks and dust palliatives to control dust in unvegetated areas and covering temporary stockpiles when weather conditions require.

G. Protecting graded and designated staging areas from erosion using an appropriate combination of approved erosion control items or methods, in accordance with the Stormwater Pollution Prevention Plan, as indicated in the RWQCB permit, and as stated in the contract plans and special provisions.

AMM-BIO-06: Nighttime Restrictions/Lighting. Nightwork would be limited wherever possible. If nightwork must be performed, lighting will be directed towards the roadway to the greatest extent practicable to avoid exposing nocturnal wildlife and their habitats to excessive glare.

AMM-BIO-07: Avoidance of Entrapment. To prevent inadvertent entrapment of animals during construction, excavated, steep-walled holes or trenches more than 1 foot deep will be covered at the close of each working day using plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they must be thoroughly inspected for trapped animals. Pipes, culverts, or similar structures stored in the BSA overnight will be inspected before they are subsequently moved, capped, or buried.

AMM-BIO-08: Pre-construction Nesting Bird Surveys and Nest Avoidance. During the nesting season (February 1 through September 30), pre-construction surveys for nesting birds will be conducted by a qualified biologist no more than 72 hours prior to the start of construction activities. If work is to occur within 300 feet of active raptor nests or 50 feet of active non-game bird nests, a non-disturbance buffer will be established at a distance sufficient to minimize disturbance based on the nest location, topography, cover, the species' sensitivity to disturbance, and the intensity/type of potential disturbance. To minimize and avoid take of migratory birds, their nests, and their young, Caltrans will conduct vegetation and tree trimming outside of the bird nesting season, prior to construction. This work will be limited to vegetation and trees that are within the Project footprint. Additional bird nesting surveys will be required if work must occur during the nesting season.

AMM-BIO-09: Replant, Reseed, and Restore Disturbed Areas. Caltrans will restore temporarily disturbed areas to the maximum extent practicable. Exposed slopes and bare ground will be reseeded with native grasses and shrubs to stabilize and prevent erosion. Where disturbance includes the removal of trees and woody shrubs, native species will be replanted, based on the local species composition.

AMM-BIO-10: Reduce Spread of Invasive Species. To reduce the spread of invasive, non-native plant species and minimize the potential decrease of palatable vegetation for wildlife species, Caltrans will comply with Executive Order 13112. This order is provided to prevent the introduction of invasive species and provide for their control to minimize the economic, ecological, and human health effects. In the event that noxious weeds are disturbed or removed during construction-related activities, the contractor will be required to contain the plant material associated with these noxious weeds and dispose of it in a manner that will not promote the spread of the species. The contractor will be responsible for obtaining all permits, licenses, and environmental clearances for properly disposing of materials. Areas subject to noxious weed removal or disturbance will be replanted with fast-growing native grasses or a native erosion control seed mixture. Where seeding is not practical, the target areas within the Project area will be covered to the extent practicable with heavy black plastic solarization material until the end of the Project.

AMM-BIO-11: Work in Dry Weather Only. Work within wetted areas, including Tomales Bay, would be conducted only during periods of dry weather. Forecasted precipitation would be monitored. When 0.25 inch or more of precipitation is forecasted to occur, work would stop before precipitation commences. No Project activities would be started if their associated erosion control measures cannot be completed prior to the onset of precipitation. After any storm event, all sites currently under construction and all sites scheduled to begin construction within the next 72 hours would be inspected for erosion and sediment problems, and corrective action would be taken as needed; 72-hour weather forecasts from the National Weather Service would be consulted, and work would not resume until runoff ceases, and there is less than a 50 percent forecast for precipitation for the following 24-hour period.

AMM-BIO-12: Dewatering. Dewatering and discharging activities will be conducted according to standard Caltrans requirements. If requested by state and federal agencies, the dewatering plan will be provided for review and comment in advance of dewatering activities.

AMM-BIO-13: Preconstruction Survey for CRLF. Pre-construction surveys for CRLF will be conducted by a USFWS-approved biologist no more than 14 calendar days prior to any initial ground disturbance and immediately prior to ground-disturbing activities (including vegetation removal) beyond the existing pavement. Suitable non-breeding upland habitat within the Project footprint, including refugia habitat such as under shrubs, downed logs, small woody debris,

and burrows, will be inspected. If CRLF is observed, the individual will be evaluated and allowed to pass through the Project area. Work must avoid the species.

AMM-BIO-14: Biological Monitoring. The USFWS-approved biologist would be present during construction activities where take of a listed species could occur including site preparation activities. Through communication with the Resident Engineer or a designee, the USFWS-approved biologist may stop work if deemed necessary for any reason to protect listed species and would advise the Resident Engineer or designee on how to proceed accordingly.

AMM-BIO-15: Rare Plant/Host Plant Preconstruction Survey. During the spring season prior to construction, Caltrans would conduct focused pre-construction surveys for rare plants and butterfly host plants. If found, the extent and abundance of these plants will be mapped and flagged in the field. These surveys would be conducted during the season in which these plants are detectable and in the phenological stage of development for correct identification (typically late spring). If a rare plant or butterfly host plant is identified within the Project area during the preconstruction survey, a 50-foot no disturbance buffer zone around individual plant(s) or population(s) would be established to protect them during activities that could result in disturbance. The buffer should be clearly marked with stakes, flags, or fencing.

AMM-BIO-16: Wetland Protection. The following measures would be implemented in and adjacent to delineated wetland ESAs in the Project limits:

a. Work in and adjacent to delineated wetlands where flooding has potential to occur would be scheduled outside of the wet-weather season.

b. Work in and adjacent to delineated tidal wetlands would not occur within 2 hours before or after extreme high tide events (6.5 feet above mean lower low water elevation or greater, as determined from the NMFS tidal gage station nearest to the activity) unless isolated within a cofferdam.

AMM-BIO-17: In-Water Work Window. The in-water work window would prevent construction disturbance in Tomales Bay when most rainfall typically occurs, avoiding impacts to water quality. All work in aquatic habitat for fish species within Tomales Bay will take place from June 1 to October 31.

AMM-BIO-18: Placement of Nontoxic Structures. All material placed in Tomales Bay will be non-toxic. Any combination of wood, cured concrete, steel pilings, or other materials used for in-channel structures would not contain coatings, treatments, or consist of substances deleterious to aquatic organisms that may leach into the surrounding environment in amounts harmful to aquatic organisms.

AMM-BIO-19: Construction within Cofferdams. All work in aquatic habitat would take place within cofferdams in dewatered areas. Cofferdams will

effectively isolate the work areas from the Bay and significantly reduce potential construction effects and stressors, such as sediment and noise. Cofferdams would be designed and constructed to isolate work areas, avoiding disturbance of potential fish habitat areas in Tomales Bay and allowing tidal flows to easily pass through the Project limits.

AMM-BIO-20: Cofferdam Installation. During construction, the super sac cofferdam would be installed during a period of low tide, when the cofferdam area is not inundated, to minimize the potential for fish to be present within the work area. No impact hammering or sheet pile installation would be allowed.

Cultural Resources

AMM-CUL-01: Cultural Sensitivity Training. Prior to the initiation of construction for the Project, the Project contractor, staff, and construction crews shall be made aware of the potential to encounter cultural resources and Tribal Cultural Resources (including the traditional importance of resources such as cultural landscapes, significant waterways, and ethnobotanical plants) through a presentation provided by an archaeologist and a representative from the FIGR.

AMM-CUL-02: Environmentally Sensitive Area. A vertical and horizontal ESA exists for this Project. The ESAs will be delineated on the plans and described in the specifications. Appropriate protective measures including demarcations with flags or high visibility spray paint, or temporary high visibility fencing (THVF), access restrictions, and monitoring of the ESA boundaries by a qualified archaeologist and Tribal representative from the Federated Indians of Graton Rancheria will be implemented during construction.

AMM-CUL-03: Monitoring Area. An MA exists for this Project. The MA will be delineated/noted on the plans and described in the specifications. Appropriate protective measures including demarcations with flags or high visibility spray paint, and monitoring by a qualified archaeologist and Tribal representative from the Federated Indians of Graton Rancheria will be implemented during construction.

Energy

AMM-ENERGY-01: Vehicle and equipment maintenance. Perform regular vehicle and equipment maintenance.

AMM-ENERGY-02: Reduce Offsite Disposal. To the extent feasible, recycle hazardous waste and excess materials to reduce disposal offsite. If recycling is not practicable, dispose of material.

Greenhouse Gas Emissions

AMM-GHG-01: Idling Restrictions. Contractors shall limit idling of vehicles and construction equipment on-site to reduce fuel use and associated emissions.

AMM-GHG-02: Solar-Powered Traffic Control Devices. If feasible, solar powered signal boards would be used to reduce the use of non-renewable energy during construction.

Hazards and Hazardous Materials

AMM-HAZ-01: Preliminary Site Investigation. A Preliminary Site Investigation that focuses on collection and laboratory analysis of soil samples for aerially deposited lead and other contaminants will be completed during the Project PS&E phase once the limits and depths of earthwork are well defined. Results will be incorporated into the construction contract in compliance with the 2016 ADL Agreement.

Hydrology and Water Quality

AMM-WQ-01: Sediment Control. BMPs such as silt fence, fiber roll, concrete wash-out and street sweeping would be deployed for sediment control and material management.

MM-WQ-02: Cofferdam. Temporary dewatering and water treatment systems will be implemented to support construction activities. Dewatering will be implemented, to provide for a dry working environment within Tomales Bay.

Transportation

AMM-TRANS-01: Traffic Management Plan. To minimize potential effects from construction activities to motorists, bicyclists, or pedestrians using local streets, a TMP would be developed by Caltrans and implemented throughout construction. The TMP would include press releases to notify and inform motorists, bicyclists, businesses, community groups, local entities, and emergency services of upcoming closures and detours affecting travel way. The TMP would also include elements such as portable Changeable Message Signs and the CHP Construction Zone Enhanced Enforcement Program (COZEEP) would be utilized to minimize traffic delays and to address the safety needs for commuters, bicyclists, and highway workers.

Tribal Cultural Resources

AMM-TRIBCUL-01: Long term cultural monitoring. Caltrans Professionally Qualified Staff (PQS) will prepare a bi-annual monitoring memorandum documenting the status of the known cultural resource. This measure will be in place for five years following the completion of construction. Caltrans will provide the memoranda to FIGR bi-annually and continue consultation on the site conditions.

Appendix D List of Technical Studies and References

California Air Resources Board (CARB). December 2008. *Climate Change Scoping Plan Appendices. Volume II: Analysis and Documentation*. Appendix I, p. I-19. https://ww3.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm. Accessed: June 14, 2024.

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To obtain a copy of one or more of these technical studies/reports or the Initial Study, please send your request to:

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Email: amanda.goldsmith@dot.ca.gov
Phone Number: (510)715-8399

Please provide the following information in your request:

Project title: Storm Damage Permanent Restoration
General location information: MRN-1-37.2
District number-county code-route-post mile: 04-MRN-1-37.2
Project ID number: 0420000281