## Project Description

The proposed project was initiated by the California Department of Transportation (Caltrans) District 1 Office of Traffic Safety in response to public complaint about lack of access and safety for non-motorized users on the highway between Gualala and Point Arena. A subsequent review of the collision history indicated shoulder widening would address the run-off-road collisions by providing a recovery area.

The proposed project would realign the roadway, widen the lanes to a uniform 11 feet and shoulders to 4 feet in both directions, install guardrail and supporting retaining walls, replace culverts, and relocate utility poles on State Route 1 (SR 1) at two locations north of Gualala in Mendocino County, from postmiles (PM) 6.40 to 6.80 between the intersection of Havens Neck Drive and Gypsy Flat Road (Rd) and from PM 9.20 to 9.50 between Signal Port Creek Rd and Iversen Point Rd (Figure 1).

### *Project Objective*

#### *Purpose*

The purpose of this project is to reduce the frequency and severity of motor vehicle collisions and improve highway safety conditions for non-motorized users on SR 1 in Mendocino County between PM 6.40 to 6.80 and PM 9.20 to 9.50.

#### *Need*

The project is needed to reduce the frequency and severity of motor vehicle collisions occurring along the project limits and improve highway facility conditions for bicyclists and pedestrians. The project locations were determined from collision data indicating greater than 4 collisions occurring within a 5-year period from 2008 to 2013 within a 0.1-mile segment of the road.

The segments of highway from PM 6.55 to 6.75 experienced six total motor vehicle collisions between 4/1/2008 and 3/31/2013. Two of these resulted in injury and four were property damage only. The collision patterns showed 5 of the 6 collisions leaving the southbound lane and having inadequate space to recover. All of the collisions involved single vehicles.

The section of highway from PM 9.30 to 9.45 experienced five motor vehicle collisions between 4/1/2008 and 3/31/2013. Two of these were injury collisions and two were property damage only. All four of the collisions occurred from single vehicles leaving the southbound lane.


**Figure 1. Project Location Map within Mendocino County, California**

## Proposed Project

Caltrans proposes to realign the roadway, widen the travel lanes and shoulders in the northbound (NB) and southbound (SB) directions, replace culverts (Table 1), install guardrail and supporting retaining walls, and relocate utility poles on SR 1 at two locations between post mile (PM) 6.40 and PM 6.80, and between PM 9.20 and PM 9.50 (Figure 1). Additional work would include pavement overlay, restriping, right of way (ROW) acquisition, cut and fill earthwork, tree removal, private driveway conforms, and erosion control (Table 2). The existing highway is a two-lane conventional highway, with lanes that vary from 9.5 to 10.5 feet wide and shoulders that vary from 0 to 1 foot wide. There are no existing signals, lighting, or parking facilities in the project area.

## Road Widening and Improvements

Construction of the new traveled way and widened shoulders would include a new roadway alignment and superelevation improvements at both locations in the project area. Travel lanes would be widened throughout the two construction areas to provide uniform 11'-wide lanes and 4'-wide shoulders in the NB and SB directions. Pavement cold planing and Hot Mix Asphalt (HMA) overlay would be performed throughout the project limits.

In Location 1, the road would be widened primarily to the east to provide space for the 4'-wide shoulders and 11'-wide lanes. The widening in this area would result in the anticipated wetland impacts due to the widening of the driving surface and reconstruction of the roadside ditch. The existing trapezoidal ditch will be perpetuated through the project area and extended north. The center line would be moved east, the driveway (PM 6.62) located just north of the culvert location (PM 6.60) would be adjusted to meet the new road edge, and the mailboxes would be adjusted and reset to accommodate the widened road. The driveway apron would be paved where it meets SR 1.

In Location 2, the road profile would be raised approximately 1 foot to reduce the severity of the dip at Walker Gulch. A mechanically stabilized embankment would be used on both sides of the road to provide space for the proposed widening. Utilities would need to be relocated through this area to accommodate the widened road surface and embankment. The cut and grading area north of Walker Gulch on the northbound shoulder (east side) would provide room for the proposed shoulder and lane widening and is the location of some Bishop pine impacts. A residential fence on the west side of the road would be replaced in kind at the edge of the new ROW.

### *Culvert and Drainage Improvements*

Culvert improvements would take place in both project locations (Table 1). The culvert work is described by location below. Culverts would be replaced using half width construction during the dry season (June 15-October 15) to avoid aquatic impacts. Additional construction details are provided in the Construction Scenario section below.

#### Location 1

The 36"-diameter culvert that crosses under SR 1 at PM 6.60 would be replaced with a culvert of the same diameter with a 9'-long inlet extension with a flared end section and a 12'-wide by 9'-long area of Rock Slope Protection (RSP) added on the inlet (northbound side). The culvert would be replaced using half width construction with a temporary stream diversion that would temporarily block the stream flow and pump it into the roadside ditch to flow to the adjacent southerly culvert. The stream diversion would be built using Caltrans' standard specifications controlling stream diversions, which include submittal of a temporary stream diversion plan to Caltrans for review and approval by Caltrans Construction and Environmental staff at least 30 days prior to implementation and construction.

A new 12"-diameter driveway culvert would be placed at PM 6.62 under a driveway on the northbound side and would include a 3'-wide by 9'-long area of RSP after the outlet where it drains to the inlet of the cross-road culvert at PM 6.60.

The 24"-diameter culvert at PM 6.71 would be replaced with a 30"-diameter culvert extended 16'10" on the northbound (upstream) side. A Drainage Inlet (DI) would be installed at the upstream inlet on the northbound side and a 14'-wide by 9'-long area of RSP would be placed at the flared end section at the downstream outlet on the southbound side. This culvert drains stormwater from the roadway only and is not associated with a larger stream drainage.

A fourth drainage system at PM 6.74 would be improved by installing a 15'-wide by 6'-tall headwall and 168 square-foot area of RSP on the inlet of the existing 30"-diameter culvert. The RSP would protect the inlet from undercutting and allow for maintenance access.

#### Location 2

At Location 2, Type F dikes would be constructed in the southbound direction. An overside drain would be re-installed at PM 9.33 and the downdrain would be replaced and extended to the bottom of the embankment. A 3'-wide by 17'-long RSP lined v-ditch would be installed on the east side of SR 1 at PM 9.30 to drain the hillside water to the newly aligned roadside ditch. A 12"-diameter, 50'-long culvert would be installed under the existing concrete driveway located at PM 9.37 on the west side of the highway. The new culvert will have a grate type inlet and a 3'-

wide by 14'-long v-ditch of RSP at the outlet. A 12"-diameter, 39'-long, downdrain would be added to the end of the RSP v-ditch. Ditch reconstruction and flowline re-establishment would be performed in both directions throughout the project limits.

| Location | Post Mile | Drainage System Work |
|---|---|---|
| 1 | 6.60 | Drainage system 1: Replace and Extend Culvert - remove 36"-diameter by 49.4'-long CMP*; Replace w/ 36"-diameter by 58.4'-long APC* 6'-wide by 12'-long RSP at flared end section inlet. Culvert crosses under SR 1 |
| 1 | 6.62 | Drainage System 2: Add New Culvert - add new 12"-diameter by 36.8'-long APC under driveway on east side of SR 1 with a 3'-wide by 9'-long area of RSP at outlet. Culvert does not cross SR 1. |
| 1 | 6.71 | Drainage System 3: Replace and Extend Culvert – remove 24"-diameter by 40.4'-long CMP, replace w/ 30"-diameter by 57.2'-long APC with a 14'-wide by 9'-long area of RSP placed at the flared end section outlet. Culvert drains stormwater only and crosses under SR 1. |
| 1 | 6.74 | Drainage System 4: Add Headwall to Existing Culvert – add 15'-wide by 6'-tall headwall and 168 square foot area of RSP on the inlet of the 30"-diameter PPC* existing culvert. |
| 2 | 9.30 | Install RSP lined v-Ditch, 3'-wide by 17'-long to drain hillside water to newly aligned roadside ditch on east side of SR 1. |
| 2 | 9.33 | Install Overside Drain on west side of SR 1 to connect with downdrain terminating at pm 9.35 |
| 2 | 9.35 | Replace and Extend Downdrain on west side of SR 1 – remove 10"-diameter by 31'-long CMP, replace w/ 12"-diameter by 54'-long CMP. |
| 2 | 9.37 | Drainage System 6: Add New Culvert under driveway on west side of SR 1– install new 12"-diameter by 50'-long APC with grate type inlet and 3'-wide by 14'-long v-ditch of RSP at outlet. A 12"-diameter, 39'-long, downdrain would be added to the end of the RSP v-ditch. |

**Table 1: Proposed Culvert and Drainage Improvements**

### *Guardrail and Retaining Wall Improvements*

At Location 1 a Rail Element Wall (REW) would be constructed on the west side of the road to provide additional space for the proposed southbound shoulder for approximately 55 feet through the corner. A Midwest Guardrail System (MGS) with minor concrete vegetation control and Alternative In-Line Terminal System (AILTS) would be installed on the southbound shoulder for 175 feet to protect southbound traffic. The REW would support a portion of the MGS and shoulder area where the west side slope is steepest just north of the existing culvert at PM 6.60.

At Location 2 the existing guardrail would be replaced with MGS and minor concrete vegetation control would be installed in the NB direction from PM 9.33 to PM 9.36. MGS with minor concrete vegetation control would be installed in the SB direction from approximately PM 9.31 to PM 9.37. Mechanically Stabilized Embankments would be constructed in the NB direction (east side) from PM 9.33 to PM 9.36 and in the SB direction (west side) from PM 9.32 to PM 9.37 with variable visible heights. These walls would be constructed from the highway. The height of the north bound wall (east side) is estimated to be 7 feet in total, with 5 visible feet above the ground surface and 2 feet below ground surface while the southbound wall (west side) would have a maximum visible height of about 3 feet (Table 2). The proposed work is summarized by Post Mile (PM) in Table 2.

### *Staging and Disposal*

Staging for construction work within the immediate project area is limited. Caltrans has identified 3 paved or gravel pullouts along SR 1 as potential areas for contractor use located at PM 6.30, 9.00 and 9.10, which are shown in the project plans. No grading or earthwork is proposed at these locations and trucks and equipment would be limited to paved or graveled and unvegetated road surfaces. Additional paved pullouts within the Caltrans Right of Way may also be used.

| Approximate PM Location | Construction Activity |
|---|---|
| 6.50- 6.77 | Centerline shifted east 0 to 11 feet |
| 9.39 - 9.37 | Centerline shifted east 0 to 4 feet |
| 6.50 - 6.77 (NB) | Existing lanes widened to 11 feet (NB) |
| 6.519 - 6.770 (SB) | Existing lanes widened to 11 feet (SB) |
| 6.50 - 6.77 (NB) | Existing shoulder widened to 4 feet (NB) |
| 9.30 - 9.474 | Existing lanes widened to 11 feet and shoulders widened to 4 feet (NB and SB) |
| 6.540 - 6.770 (SB) | Existing shoulder widened to 4 feet (SB) |
| 6.492 - 6.770<br>9.290 - 9.474 | Pavement cold planning and HMA overlay (throughout project limits) |
| 6.584<br>6.748<br>9.354<br>9.365 | Existing driveways conformed to new pavement |
| 6.492 - 6.770<br>9.290 - 9.474 | Superelevation improvements (throughout project limits) |
| 6.60 | 36-inch-diameter culvert replacement in-kind. RSP added at inlet. |
| 6.62 | 12-inch-diameter culvert installed. |
| 6.71 | 30-inch-diameter culvert replacement in-kind. |
| 6.74 | Install headwall at the existing culvert inlet and RSP. |
| 6.492 - 6.770<br>9.290 - 9.474 | Ditch reconstruction and flowline reestablishment (throughout project limits) |

| | |
|---|---|
| 6.492 - 6.770<br>9.290 - 9.474 | Cut and fill earthwork (throughout project limits) |
| 6.517<br>6.590<br>6.745<br>9.338 | Existing road sign signs relocated |
| 6.587<br>6.751<br>9.356 | Mailboxes relocated |
| 6.497<br>6.540<br>6.563<br>6.601<br>6.642<br>6.671<br>6.739<br>9.368<br>9.372<br>9.428 | Utility poles, including joint poles, would be relocated |
| 6.593 | Abandoned utility pole removed |
| 6.576 | Private waterline sleeve installed (if necessary) |
| 6.522 | Minor adjustments for valve covers. |
| 6.3 (SB)<br>9.0 (NB)<br>9.1 (SB) | Potential staging areas (paved turnouts) and disposal |
| 6.492 - 6.770<br>9.290 - 9.474 | Tree removal and erosion control (throughout the project limits) |
| 9.301 - 9.329 | Construct dikes (SB) |

| | |
|---|---|
| 9.329 - 9.356 | Type F dike constructed (SB) |
| 9.329 | Overside drain installation |
| 9.345 | Downdrain replacement |
| 9.337 - 9.354 (NB)<br>9.329 - 9.361 (SB) | Reinforced mechanically stabilized embankment soil welded wire walls constructed |
| 9.335 - 9.352 | Guardrail replacement with minor concrete vegetation control (NB) |
| 9.318 - 9.363 | Guardrail replacement with minor concrete vegetation control (SB) |
| 9.37 | 12-inch-diameter culvert installed. RSP added at outlet |

**Table 2. Construction Activities by Postmile (PM)**

### *Right of Way/Parcel Acquisition*

Permanent right-of-way (ROW) acquisition has been acquired for 16 parcels between both locations. Four of these parcels are located in Location 1, and 12 parcels are located within Location 2. Acquisitions include fee title, utility easements, and Temporary Construction Easements. Negotiations have been completed with these landowners and payments are being completed. Additional details will be provided to the County once these negotiations are concluded and specific information can be made public.

### *Construction Scenario*

Construction is anticipated to take up to 80 days. The project construction would begin with staking the clearing limits of the project. The clearing limits would establish the limits of vegetation removal of approximately 1 to 3 feet beyond the top of cut or below the toe of fill. All vegetation in the work area would be cleared and grubbed to allow access for construction. Both manual labor and equipment would be used to remove and dispose of cleared vegetation (see Table 3, Equipment), which would be chipped and disposed of off-site or utilized on-site as duff. Utility relocation would be completed by the utility companies to allow for an unobstructed work zone either before or concurrent with construction (see Appendix C, plan sheets).

Once the vegetation is cleared the excavation for the widened lanes and shoulder area would be completed using a combination of excavators and dozers. The cut material would be loaded into trucks or possibly scrapers to short haul the material onsite to construct the fill prisms within the

project limits. The fill prisms would be constructed to create the new widened roadway prism. Construction would utilize dozers and segmented foot compaction equipment to adequately consolidate the fill material. All cut material would be either utilized as fill for the fill prisms or would become the property of the contractor and disposed of off-site.

Culverts would be replaced using half width construction techniques after the cut and fill operations are complete during the dry season, June 15-October 15, to avoid impacts to aquatic organisms and water quality. However, if water is present, a clear water diversion would be required. Typical clear water diversions use either gravity flow pipes placed through the new culvert sections or a temporary gravel bag check dam upstream of the culvert inlet to allow for the water to be captured and pumped via pressure hose to the outlet location of the culvert. Culverts would be replaced using excavators and manual labor to install the pipe and trenches would be backfilled with either native material, aggregate base, or a cement sand slurry.

Once the cut/fill operations and culvert replacements are completed, the new structural section of the roadway would be prepared with the placement of aggregate base. Construction of the new roadway would be completed with motor graders, smooth drum compaction equipment and possibly paddle wheel scrapers. Once all subgrade is made and compacted the aggregate base section would be installed, watered, and compacted to the finish base grade. This operation would be completed with the same equipment and hand work. After the aggregate base is finished the roadway would be surfaced with asphalt concrete utilizing pavers, rollers and asphalt milling machines to establish appropriate conforms and paving notches.

The next step would be to install all new Midwest Guardrail Systems (MGS), mechanically stabilized embankment, and concrete vegetation control utilizing a Guard Railing Punch Truck, excavators, and forklifts. Lastly, final traffic striping would be applied to utilizing Thermoplastic Striping trucks, paint sprayers, marker installation trucks, sweepers and possibly recessed grinding machines to recess pavement markers.

Final project erosion control would be applied to all exposed earth resulting from construction, to protect the finished slopes from erosion and restore vegetative cover removed for construction access. Erosion control would be applied using either truck or trailer mounted hydroseeding equipment and manual labor to install wattles or jute netting to protect the bare slopes from the weather and elements. Revegetation on-site would begin approximately one year after construction as described in the Revegetation Plan to give erosion control plantings time to become established.

Other incidental work includes installing traffic signs, relocating mailboxes and other appurtenance work. This work would be completed with manual labor, possibly assisted by

augers or other small power equipment. Additional work includes installing Construction Stormwater Best Management Practices and performing periodic and final cleanup of the jobsite.

| Category | Equipment |
|---|---|
| Equipment for earth movement | Backhoe and excavator |
| Equipment for Grind, Overlay, Dikes, and Shoulder Backing | AC saws<br>Haul Trucks (flat bed and dump trucks)<br>Material Transfer Vehicle (MTV)<br>Pavers<br>Rollers<br>Breakdown Roller w/vibratory capability |
| | Intermediate, Finish, and Standby Rollers<br>Sand Spreader<br>Scraper<br>Sweeper<br>Compactor<br>Cold Planer or Milling Machine<br>Water Truck<br>Shoulder Backing Application Vehicle<br>Striper/Marking Truck |
| Equipment for MGS and Retaining Wall Construction | Drill<br>Pole/Post Driver<br>Cable Tensioner |
| Equipment to Adjust Existing Concrete DI's | Air Compressor<br>Chipping gun/Rivet Buster |

**Table 3. Construction equipment**

## *Biological Resources*

The Natural Environment Study (NES) and Environmentally Sensitive Habitat Area (ESHA) Report identified the habitats on site. They include wetlands, Bishop Pine Forest, relatively permanent waters, riparian areas, and Pacific reed grass meadow, among others (Figure 2). Impacts to each species type are summarized below in Table 4, Impacts to Habitat Types and Table 5, Impacts to Other Waters of the State. The proposed project would have both temporary and permanent impacts to jurisdictional waters of the United States and State due to 1) cut and fill earthwork for road widening, 2) culvert extensions, 3) ditch reconstruction, and 4) minor temporary vegetation disturbance. In total, there would be approximately 0.0079 acre of permanent impacts to potentially jurisdictional Other Waters of the U.S. and Waters of the State. Additionally, there would be 0.0598 acre of permanent and 0.0745 acre of temporary impacts to 3-parameter wetlands.

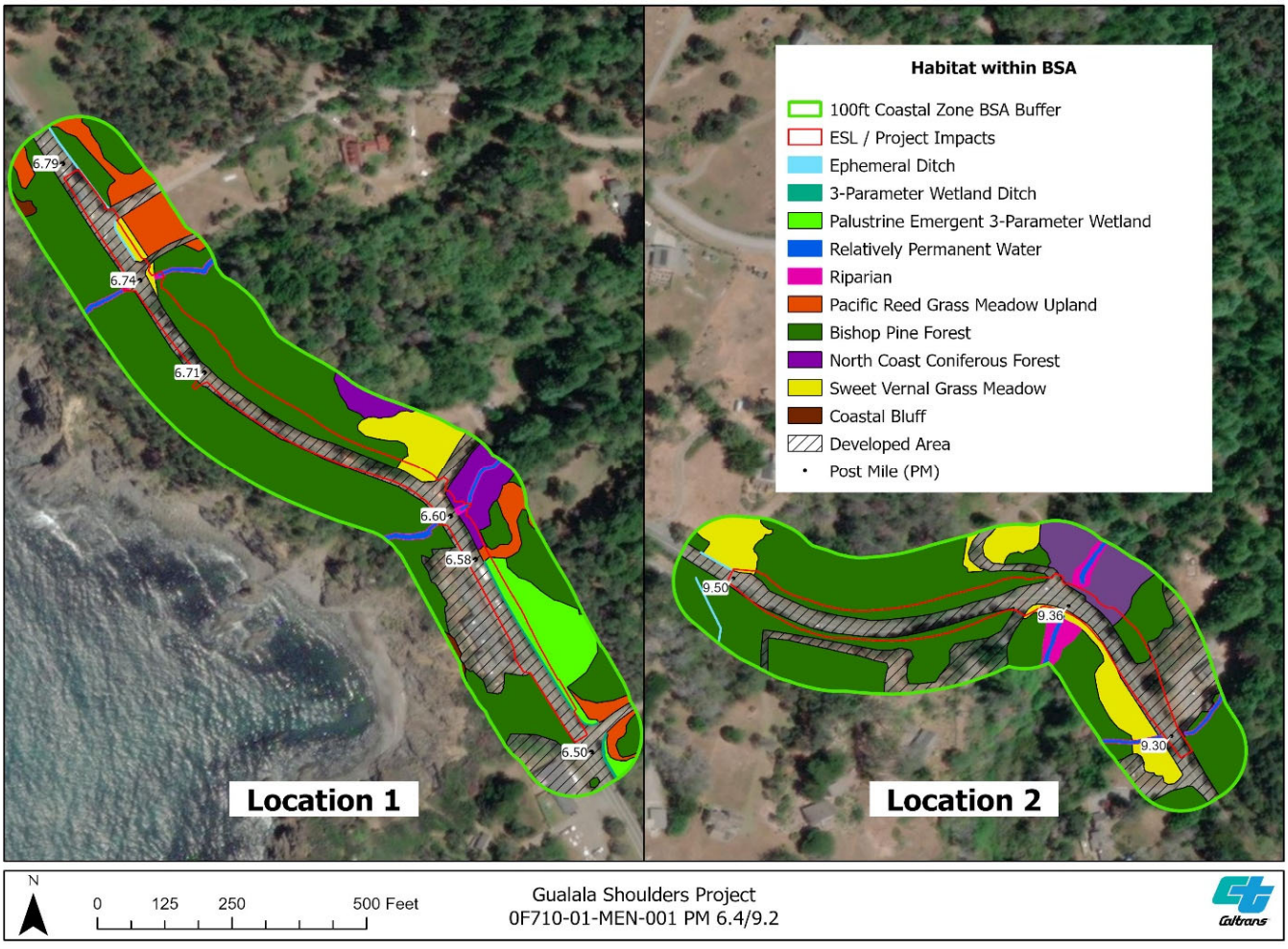


**Figure 2: Habitats Located within the 100-foot Coastal Zone Biological Study Area for Locations 1 and 2. Direct impacts would be limited to the area within the ESL**

| Habitat Type | Total Temporary Impacts (acres) | Total Temporal Impacts (acres) | Total Permanent Impacts (acres) | Total Impacts (acres) |
|---|---|---|---|---|
| Potentially Jurisdictional Riverine (Other Waters of U.S. and State) | 0 | 0 | 0.0079 | 0.0079 |
| PEM wetland (PEM1D-Seep and PEM1F-Ditch) | 0 | 0.0745 | 0.0598 | 0.1343 |
| Ephemeral Drainage Ditches (OWOTS) | 0.0021 | 0 | 0 | 0.0021 |
| Coniferous Riparian | 0 | 0 | 0.0109 | 0.0109 |
| Pacific reed grass SNC (Upland) | 0 | 0.0031 | 0.0050 | 0.0081 |
| Bishop pine Forest Alliance SNC | 0 | 0 | 0.7959 | 0.7959 |
| **Total** | **0.0021** | **0.0776** | **0.8795** | **0.9592** |

**Table 4: Summary of Potential Temporary and Permanent Impacts to Habitats**

The project impacts would be split between Locations 1 and 2 and would be limited to the area within the ESL shown on Figure 2. Caltrans defines the impacts in Table 4 as follows:

1) Temporary impacts are those in which restoration begins within one year of the first date of impact.

2) Temporal impacts occur when restoration begins more than one year after the first date of impact and there is a temporal loss of function.

3) Permanent impacts are impacts that are not restorable.

However, the California Coastal Commission (CCC) uses different definitions for the impact classes. These are listed below. For the purposes of the Coastal Development Permit and the proposed mitigation effort, the CCC definitions have been used to classify impacts resulting from this project.

The definitions used by the CCC to classify impacts are as follows:

1) Temporary: temporary impacts are defined as either a) no significant ground disturbance or killing of native vegetation or b) vegetation and habitat function recovers to comparable age/size class within 12 months of initial disturbance.

2) Long-Term Temporary: Impact occurs over no more than 24 months and vegetation recovers to comparable age/size class no more than 12 months following the conclusion of disturbance.
3) Permanent: All other impacts not covered above.

Based on these definitions, most impacts from the project classified as temporal in Table 3 are either Long-Term Temporary or Permanent. Revegetation and habitat restoration would occur on and off-site as described in the Revegetation and Restoration section of this Project Description.

The ephemeral drainage ditch impacts shown in Table 4 are associated with roadside drainage ditches classified as Other Waters of the State. Ditches 4 and 5 are included because they are within the BSA, but outside of the ESL and will not be impacted by project activities. Specific measurements of impacts are provided below in Table 5.

| Other Waters of the State | Total Length within BSA (feet) | Average Width (feet) | Impacted Length (feet) | Area of Temporary Impacts (acres) |
|---|---|---|---|---|
| Location 1 Non-RPW Drainage Ditch (Ditch-3) | 110 | 1.15 | 80 | 0.0021 |
| Location 1 Non-RPW Drainage Ditch (Ditch-4) | 200 | 1 | 0.0 | 0.0 |
| Location 2 Non-RPW Drainage Ditch (Ditch-5) | 500 | 1.5 | 0.0 | 0.0 |
| **Total** | **810** | | **80** | **0.0021** |

**Table 5. Anticipated Project Impacts to Other Waters of the State**

## *Revegetation and Restoration*

Revegetation and restoration work would be implemented both on and off-site as necessary to mitigate for impacts to Sensitive Natural Communities (SNCs) identified in the Initial Study/Mitigated Negative Declaration and described above. Onsite planting locations, the areal extent of the plantings, and plant species proposed to be used for revegetation are discussed in the Onsite Revegetation Plan. Additional Standard Measures, Best Management Practices (BMPs), and Avoidance and Minimization Measures are provided in Section 1.5 of the Initial Study/ Mitigated Negative Declaration and provided below for easy reference. Mitigation for temporary impacts to ephemeral roadside ditches would be completed on site through erosion control planting and would not be held to the monitoring and maintenance schedule of the other revegetation areas. These ditches would be reestablished alongside the new roadbed and would

continue to function similar to pre-project conditions, allowing for seasonal drainage and supporting herbaceous and annual plants subject to annual maintenance and mowing activities.

Offsite mitigation would take place at one or more offsite mitigation locations to restore the habitat types impacted by this project. The two SNCs impacted by this project that would require off-site mitigation include the Bishop Pine Forest Alliance and wetlands. Impacts to Waters of the US would be mitigated on site with revegetation. These communities and the impacts to them are described in more detail in the ESHA Report, the NES, the NES Addendum, and the Initial Study/Mitigated Negative Declaration for this project. Mitigation is discussed in the Onsite Revegetation Plan and are further detailed in the Habitat Mitigation and Monitoring Plan (HMMP). Mitigation for permanent impacts to these SNCs, including wetlands, are intended to account for: 1) the temporal loss of resources between the start of mitigation activities and the time when replacement habitat structure and function are achieved, and 2) the inherent risk in implementing successful mitigation. Locations to complete mitigation can be difficult to identify and acquire, especially on the Mendocino Coast.

Proposed mitigation would be done at both onsite and offsite locations for wetland and Bishop Pine impacts. Off-site mitigation is necessary due to the constrained area within the right of way and the difficulty in identifying and acquiring sites appropriate for mitigation. The wetland impacts would be mitigated with on-site wetland revegetation to the extent feasible and by purchasing credits from the Mendocino Mitigation Bank at Garcia River, currently under development.

Bishop Pine impacts would be offset with on-site replanting of species in the Bishop Pine Forest Alliance and off-site planting of approximately one acre of Bishop Pine at the Saunders Landing property located approximately 10.2 miles north of the Mendocino-Sonoma County border and 6 miles south of the town of Point Arena, along State Route 1 in Mendocino County (APN 142-010-54). Saunders Landing has been acquired by Caltrans for mitigation purposes and will be transferred to the Mendocino Land Trust for long term management and monitoring.

Wetland mitigation would be completed by purchasing wetland credits from the Mendocino Mitigation Bank which is currently under development by Resource Environmental Solutions (RES) under contract with Caltrans. The Bank is developing restoration plans and mitigation credits for a number of habitats, including seasonal wetlands. The Mitigation Bank is scheduled to be permitted and completed by late 2024, 6 months prior to the onset of construction for the Gualala Shoulders project. The Bank will reestablish habitats and habitat function on the bank parcels in areas where these habitats were historically located but do not currently exist. Habitat reestablishment would be done through grading, planting, seeding, weeding, livestock exclusion,

and either removal or improvement of human infrastructure such as ditches and roads. The amount of wetland mitigation, or number of credits to be purchased, will be established through mitigation ratios assigned by the North Coast Regional Water Quality Control Board. As discussed above, impacts to wetlands from the project are approximately 0.1343 acre of permanent impacts resulting from the expanded road surface required to provide the 11'-wide lanes and 4'-wide shoulders proposed by the project at Location 1.

Impact to the Bishop Pine Forest Alliance from the work at both Location 1 and 2 would be mitigated with a combination of on-site revegetation using species identified as part of the Bishop Pine Forest Alliance and off-site planting of Bishop Pine seedlings and Alliance species. Caltrans restricts planting Bishop Pine in the Right of Way due to safety concerns, so on-site revegetation species will be shrubs, herbaceous species, and potentially other tree species associated with the Bishop Pine Forest Alliance. The off-site mitigation would be completed at the Saunders Landing property and would include between 0.8 and 1.1 acres of Bishop Pine planting. This site is outside of the Right of Way and would have no restrictions on tree species plantings and will be managed as a preserve and mitigation site by the Mendocino Land Trust. The planting effort on this site would include some invasive species removal prior to planting the trees to reduce competition and improve survival of the plantings. Monitoring for both survival and health of the plantings for 5 years, and maintenance efforts including weeding and watering would be conducted as necessary to improve the chances of success of the revegetation effort. Additional information is available in the project's Revegetation Plan as well as the Habitat Monitoring and Mitigation Plan (HMMP).

### *Alternatives Analysis*

The proposed project contains elements intended to reduce environmental impact and additional right of way needs while addressing site specific restrictions and meeting the purpose and need of the project. The Caltrans project development process is iterative and results in a proposal containing portions of multiple alternatives that have been analyzed for feasibility and impacts by the project development team during the development of the project.

An early alternative would have maintained the existing centerline and required less cut and fill but would have required condemnation of a structure on an occupied parcel, additional guardrail and retaining walls to accommodate the widened road surface and created additional impacts at an existing drainage outfall by requiring it to be relocated. The proposed alternative was developed to avoid condemnation of the structure, reduce impacts to the drainage, and reduce the number and length of the retaining walls.

The proposed alternative moves the centerline 8 feet to the east of its current location in Location 2, which required additional cut on the east side of the highway and road surface construction as compared to the rejected alternative. However, this avoided impacts to the structure, and prevented relocation of the culvert. To reduce the footprint and impact of the proposed alternative, the cuts have been steepened to a slope ratio of 0.75 to 1, rather than the standard 1 to 1 or 1.5 to 1, and lane widths have been reduced to 11 feet from the standard 12 feet. Proposed shoulder widths were also reduced to 4 feet from the originally proposed 5 feet, and the Caltrans standard of 8 feet, throughout the extent of the project.

### *Impact Minimization Measures*

Under CEQA, "mitigation" is defined as avoiding, minimizing, rectifying, reducing/ eliminating, and compensating for an impact. In contrast, Standard Measures and Best Management Practices (BMPs) are prescriptive and sufficiently standardized to be generally applicable, and do not require special tailoring for a project. They are measures that typically result from laws, permits, agreements, guidelines, and resource management plans. For this reason, the measures and practices are not considered "mitigation" under CEQA; rather, they are included as part of the project description in environmental documents.

The following measures were included in the project through the CEQA Initial Study/Mitigated Negative Declaration. They are included here for convenient reference.

### *Aesthetics/Visual Resources*

**AR-1**: Aesthetic treatment to the guardrails/retaining walls would be included, such as tribal patterns, to address context sensitivity.

**AR-2:** Temporary access roads, construction easements, and staging areas that were previously vegetated would be restored to a natural contour and revegetated with regionally appropriate native vegetation.

**AR-3:** Where feasible, guardrail terminals would be buried; otherwise, an appropriate terminal system would be used, if appropriate.

**AR-4:** Where feasible, construction lighting would be limited to within the area of work.

**AR-5:** Where feasible, the removal of established trees and vegetation would be minimized. Environmentally sensitive areas would have Temporary High Visibility Fencing (THVF) installed before start of construction to demarcate areas where vegetation would be preserved, and root systems of trees protected.

## *Biological Resources*

**BR-1**: **General**

Before start of work, as required by permit or consultation conditions, a Caltrans biologist or ECL would meet with the contractor to brief them on environmental permit conditions and requirements relative to each stage of the proposed project, including, but not limited to, work windows, drilling site management, and how to identify and report regulated species within the project areas.

**BR-2: Animal Species**

A. To protect migratory and nongame birds (occupied nests and eggs), if possible, vegetation removal would be limited to the period outside of the bird breeding season (removal would occur between September 16 and January 31). If vegetation removal is required during the breeding season, a nesting bird survey would be conducted by a qualified biologist within one week prior to vegetation removal. If an active nest is located, the biologist would coordinate with CDFW to establish appropriate species-specific buffer(s) and any monitoring requirements. The buffer would be delineated around each active nest and construction activities would be excluded from these areas until birds have fledged, or the nest is determined to be unoccupied.

B. Pre-construction surveys for active raptor nests within one-quarter mile of the construction area would be conducted by a qualified biologist within one week prior to initiation of construction activities. Areas to be surveyed would be limited to those areas subject to increased disturbance because of construction activities (i.e., areas where existing traffic or human activity is greater than or equal to construction-related disturbance need not be surveyed). If any active raptor nests are identified, appropriate conservation measures (as determined by a qualified biologist) would be implemented. These measures may include, but are not limited to, establishing a construction-free buffer zone around the active nest site, biological monitoring of the active nest site, and delaying construction activities near the active nest site until the young have fledged.

C. Seasonally appropriate emergence surveys prior to construction would be conducted by a qualified bat biologist to fully assess bat presence and behavior.

D. To prevent attracting corvids (birds of the Corvidae family which include jays, crows, and ravens), no trash or foodstuffs would be left or stored on-site. All trash would be deposited in a secure container daily and disposed of at an approved waste facility at least once a week. Also, on-site workers would not attempt to attract or feed any wildlife.

E. A qualified biologist would monitor in-stream construction activities that could potentially impact sensitive biological receptors. The biological monitor would be present during activities such as installation and removal of dewatering or diversion systems. In-water work restrictions would be implemented.

F. An Aquatic Species Relocation Plan, or equivalent, would be prepared by a qualified biologist and include provisions for pre-construction surveys and the appropriate methods or protocols to relocate any species found. If previously unidentified threatened or endangered species are encountered or anticipated incidental take levels are exceeded, work would either be stopped until the species is out of the impact area, or the appropriate regulatory agency would be contacted to establish steps to avoid or minimize potential adverse effects. This Plan may be included as part of the Temporary Creek Diversion System Plan identified in **BR-5**.

G. Artificial night lighting may be required. To reduce potential disturbance to sensitive resources, lighting would be temporary, and directed specifically on the portion of the work area actively under construction. Use of artificial lighting would be limited to Cal/OSHA work area lighting requirements.

H. A Limited Operating Period would be observed, whereby all in-stream work below ordinary high water would be restricted to the period between June 15 and October 15 to protect water quality and vulnerable life stages of sensitive fish species.

I. Caltrans would contact USFWS if proposed NSO or MAMU habitat removal is within the designated critical habitat area to ensure removal would not result in an adverse effect.

J. Implement species specific avoidance and minimization measures proposed to minimize effects on the California red-legged frog (CRLF) pursuant to the PLOC.

K. If vegetation removal or other project work would occur during the California monarch overwintering season (generally between October and March), a qualified biologist would survey all habitat trees (e.g., eucalyptus, Bishop pine) for active monarch roosts within 200 feet of the proposed project footprint, or as much of the 200-foot survey area as is possible to survey from within accessible areas (e.g. Caltrans ROW, project TCE, or adjacent roads). Survey efforts for monarch roosts must be conducted in favorable conditions following an approved survey protocol (low temperatures, low wind speeds,

and good visibility) (Western Monarch Count 2020) to identify monarch aggregations and be conducted no more than five days before construction activities commence. If an aggregation is identified adjacent to the project area, all vegetation removal, grading, or noise-generating work associated with this project would cease within 200 feet of the roost until appropriate minimization measures could be developed in coordination with CDFW and USFWS.

L. If additional populations of potential host plants are located within the project footprint prior to construction, protocol surveys for federally listed butterfly species Behren's silverspot butterfly (*Speyeria zereene sp. beherensii*) or additional protocol surveys for the Lotis blue butterfly (*Plebejus (Lycaeides*) *anna lotis*) may be required – see 2.4 for details.

M. If vegetation removal or other project work would occur during the California monarch overwintering season (generally between October and March), the project biologist or a qualified biologist would survey all habitat trees (e.g., eucalyptus, Bishop pine) for active monarch roosts within 100 feet of the proposed project footprint. Surveys must be conducted in favorable conditions to identify monarch aggregations and be conducted no more than five days before construction activities commence.

   If an active aggregation (present for one week or more) is present within the project BSA, all vegetation removal, grading, or noise-generating work associated with this project would be timed to avoid direct impacts and minimize indirect impacts to aggregating monarch butterflies to the extent practicable. No work would occur during overwintering season, beginning approximately October 1 – March 1). Or, if avoidance of monarch overwintering season is not feasible, work would cease within 200 feet of the roost until appropriate minimization measures could be developed in coordination with CDFW and USFWS.

**BR-3: Invasive Species**

Invasive non-native species control would be implemented. Measures would include:

- Straw, straw bales, seed, mulch, or other material used for erosion control or landscaping which would be free of noxious weed seed and propagules.

- All equipment would be thoroughly cleaned of all dirt and vegetation prior to entering the job site to prevent importing invasive non-native species. Project personnel would adhere to the latest version of the California Department of Fish and Wildlife Aquatic

Invasive Species Cleaning/Decontamination Protocol (Northern Region) for all field gear and equipment in contact with water.

- When working within potential areas of infestation or within a designated Zone of Infestation for Pitch Pine Canker (Fusarium circinatum), Sudden Oak Death (*Phytophthora ramorum*), Port Orfred Cedar Root Disease (*Phytophthora lateralis*), or the pathogen (*Phytophthora cinnamomi*) – vehicles and machinery, including wheels and tracks, and hand-held equipment, must be cleaned from mud and soil and then sterilized (as indicated below) before leaving work site.

    – All tools and machinery used to prune, cut, or chip material potentially infected with one of these pathogens would be cleaned and sterilized before use on uninfected trees or in un-infested areas. Lysol™ or a 10% solution of bleach (1-part household bleach in 9 parts water) are effective sterilizers.

**BR-4: Plant Species, Sensitive Natural Communities, and ESHA**

A. Seasonally appropriate, pre-construction surveys for sensitive plant species would be completed (or updated) by a qualified biologist prior to construction in accordance with Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities.

B. A Revegetation Plan would be prepared which would include a plant palette, establishment period, watering regimen, monitoring requirements, and pest control measures. The Revegetation Plan would also address measures for wetland and riparian areas temporarily impacted by the project.

   Prior to the start of work, Temporary High Visibility Fencing (THVF) and/or flagging would be installed around sensitive natural communities, environmentally sensitive habitat areas, rare plant occurrences, intermittent streams, and wetlands and other waters, where appropriate. No work would occur within fenced/flagged areas.

C. Where feasible, the structural root zone would be identified around each large-diameter tree (>2-foot DBH) directly adjacent to project activities, and work within the zone would be limited.

D. Where feasible, the structural root zone would be identified around each large-diameter tree (>2-foot DBH) directly adjacent to project activities, and work within the zone would be limited.

E. When possible, excavation of roots of large diameter trees (>2-foot DBH) would not be conducted with mechanical excavator or other ripping tools. Instead, roots would be severed using a combination of root-friendly excavation and severance methods (e.g., sharp-bladed pruning instruments or chainsaw). At a minimum, jagged roots would be pruned away to make sharp, clean cuts.

F. After completion, all superfluous construction materials would be completely removed from the site. The site would then be restored by regrading and stabilizing with a hydroseed mixture of native species along with fast growing sterile erosion control seed, as required by the Erosion Control Plan.

**BR-5: Wetlands and Other Waters**

A. The contractor would be required to prepare and submit a Temporary Creek Diversion System Plan to Caltrans for approval prior to any creek diversion. Depending on site conditions, the plan may also require specifications for the relocation of sensitive aquatic species (see also Aquatic Species Relocation Plan in BR-2). Water generated from the diversion operations would be pumped and discharged according to the approved plan and applicable permits.

B. In-stream work would be restricted to the period between June 15 and October 15 to protect water quality and vulnerable life stages of sensitive fish species (see also **BR-2**). Construction activities restricted to this period include any work below the ordinary high-water mark. Construction activities performed above the ordinary high water mark of a watercourse that could potentially directly impact surface waters (i.e., soil disturbance that could lead to turbidity) would be performed during the dry season, typically between June through October, or as weather permits per the authorized contractor-prepared Storm Water Pollution Prevention Plan (SWPPP) and/or project permit requirements.

C. See **BR-4** for Temporary High Visibility Fencing (THVF) information.

## *Cultural Resources*

**CR-3:** If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find in consultation with the State Historic Preservation Officer.

**CR-4:** If human remains were discovered, State Health and Safety Code § 7050.5 states that further disturbances and activities would cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to CA Public Resources Code (PRC) § 5097.98, if the remains were thought to be Native American, the coroner would notify the Native American Heritage Commission (NAHC) who would then notify the Most Likely Descendent (MLD).

At this time, the person who discovered the remains would contact the Environmental Senior and Professionally Qualified Staff so they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC § 5097.98 would be followed as applicable.

### *Geology and Seismic/Topography, and Paleontology*

**GS-1:** The project would be designed to minimize slope failure, settlement, and erosion using recommended construction techniques and Best Management Practices (BMPs). New earthen slopes would be vegetated to reduce erosion potential.

**GS-2:** In the unlikely event that paleontological resources (fossils) are encountered, all work within a 60-foot radius of the discovery would stop, the area would be secured, and the work would not resume until appropriate measures are taken.

### *Greenhouse Gas Emissions*

**GHG-1:** Caltrans Standard Specification "Air Quality" requires compliance by the contractor with all applicable laws and regulations related to air quality.

**GHG-2:** Compliance with Title 13 of the California Code of Regulations, which includes restricting idling of diesel-fueled commercial motor vehicles and equipment with gross weight ratings of greater than 10,000 pounds to no more than 5 minutes.

**GHG-3:** Caltrans Standard Specification "Emissions Reduction" ensures construction activities adhere to the most recent emissions reduction regulations mandated by the California Air Resources Board (CARB).

**GHG-4:** Use of a Transportation Management Plan (TMP) to minimize vehicle delays and idling emissions. As part of this, construction traffic would be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along the highway during peak travel times.

**GHG-5:** All areas temporarily disturbed during construction would be revegetated with appropriate native species. Landscaping reduces surface warming and, through photosynthesis, decreases CO2. This replanting would help offset any potential CO2 emissions increase.

**GHG-6:** Pedestrian and bicycle access would be maintained on SR 1 during project activities.

### *Hazardous Waste and Material*

**HW-1:** Per Caltrans requirements, the contractor(s) would prepare a project-specific Lead Compliance Plan (CCR Title 8, § 1532.1, the "Lead in Construction" standard) to reduce worker exposure to lead-impacted soil. The plan would include protocols for environmental and personnel monitoring, requirements for personal protective equipment, and other health and safety protocols and procedures for the handling of lead-impacted soil.

**HW-2:** When identified as containing hazardous levels of lead, traffic stripes would be removed and disposed of in accordance with Caltrans Standard Special Provision "Residue Containing Lead from Paint and Thermoplastic."

**HW-3**: If treated wood waste (such as removal of sign posts or guardrail) is generated during this project, it would be disposed of in accordance with Standard Specification "Treated Wood Waste."

### *Traffic and Transportation*

**TT-1:** Pedestrian and bicycle access would be maintained during construction.

**TT-2:** The Contractor would be required to reduce any access delays to driveways or public roadways within or near the work zones.

**TT-3:** A Traffic Management Plan (TMP) would be applied to the project.

### *Utilities and Emergency Services*

**UE-1:** All emergency response agencies in the project area would be notified of the project construction schedule and would have access to SR 1 throughout the construction period.

**UE-2:** Caltrans would coordinate with the utility providers before relocation of any utilities to ensure potentially affected utility customers would be notified of potential service disruptions before relocations.

### *Water Quality and Stormwater Runoff*

**WQ-1:** The project would comply with the Provisions of the Caltrans Statewide National Pollutant Discharge Elimination System (NPDES) Permit (Order 2012-0011-DWQ), which became effective July 1, 2013, for projects that result in a land disturbance of one acre or more, and the Construction General Permit (Order 2009-0009-DWQ).

Before any ground-disturbing activities, the contractor would prepare a Stormwater Pollution Prevention Plan (SWPPP) that includes erosion control measures and construction waste containment measures so that waters of the State are protected during and after project construction.

The SWPPP would identify the sources of pollutants that may affect the quality of stormwater; include construction site BMPs to control sedimentation, erosion, and potential chemical pollutants; provide for construction materials management; include non-stormwater BMPs; and include routine inspections and a monitoring and reporting plan. All construction site BMPs would follow the latest edition of the *Storm Water Quality Handbooks: Construction Site BMPs Manual* to control and reduce the impacts of construction-related activities, materials, and pollutants on the watershed.

The project SWPPP would be continuously updated to adapt to changing site conditions during the construction phase.

Construction would likely require the following temporary construction site BMPs:

- Any spills or leaks from construction equipment (i.e., fuel, oil, hydraulic fluid, and grease) shall be cleaned up in accordance with applicable local, state, and/or federal regulations.
- Water would be removed by means of dewatering the individual pipe piles or cofferdams as applicable.
- Water generated from the dewatering operations would be trucked off-site to an appropriate facility, or treated and used on-site for dust control and/or discharged to an infiltration basin or used to irrigate agricultural lands.
- Fiber rolls or silt fences would be installed.
- Existing vegetated areas would be maintained to the maximum extent practicable.
- Clearing, grubbing, and excavation would be limited to specific locations, as delineated on the plans, to maximize the preservation of existing vegetation.

- Vegetation reestablishment or other stabilization measures would be implemented on disturbed soil areas, per the Erosion Control Plan.
- Soil disturbing work would be limited during the rainy season.

**WQ-2**: The project would incorporate pollution prevention and design measures consistent with the 2016 *Caltrans Storm Water Management Plan.* This plan complies with the requirements of the Caltrans Statewide NPDES Permit (Order 2012-0011-DWQ) as amended by subsequent orders.

The project design would likely include the following permanent stormwater treatment BMPs:

- Vegetated surfaces would feature native plants and revegetation would use the seed mixture, mulch, tackifier, and fertilizer recommended in the Erosion Control Plan prepared for the project.
- Where possible, stormwater would be directed in such a way as to sheet flow across vegetated slopes, thus providing filtration of any potential pollutants.