CALIFORNIA COASTAL COMMISSION
NORTH COAST DISTRICT OFFICE
1385 EIGHTH STREET, SUITE 130
ARCATA, CA 95521
VOICE (707) 826-8950
FAX (707) 826-8960

F9b

1-22-0711 (Caltrans)

November 18, 2022

EXHIBITS

Exhibit 1 – Project Area Vicinity Map

Exhibit 2 – Project Location Map

Exhibit 3 – Existing Conditions Visuals

Exhibit 4 – Project Description

Exhibit 5 – Proposed Conditions Visuals

Exhibit 6 – Proposed BMPs and AMMs

Exhibit 7 – Caltrans Jack Peters ESHA Report

Exhibit 8 – Onsite Revegetation Plan

Exhibit 9 – Draft Offsite Habitat Mitigation and Monitoring Plan

Exhibit 10 – Public Access Easement Map

VICINITY MAP

PROJECT LOCATION

1. JACK PETERS MEN-001-PM-51.3/52.1

EA 01-43484 / 0117000133

MEN-001-51.3/52.1

JACK PETERS CREEK BRIDGE

No Scale

Exhibit 2 - Project Location Map
CDP Application 1-22-0711
(Caltrans) Page 1 of 1

Jack Peters Creek Bridge - View 1 looking North (existing)

County of Mendocino

Prepared by DES / Structure Design Services - Bridge Architecture and Aesthetics S. Heath 3-1-2022

Jack Peters Creek Bridge - View 2 looking South (existing)

County of Mendocino

Prepared by DES / Structure Design Services - Bridge Architecture and Aesthetics S. Heath 3-1-2022

Jack Peters Creek Bridge - View 4 looking West (existing)

County of Mendocino

Prepared by DES / Structure Design Services - Bridge Architecture and Aesthetics S. Heath 3-29-2022

Jack Peters Creek Bridge - View 3 looking South (existing)

County of Mendocino

Prepared by Structure Design Services - Bridge Architecture and Aesthetics S. Heath 11-13-2019

Jack Peters Creek Bridge - View 3 looking East (existing)

County of Mendocino

Prepared by DES / Structure Design Services - Bridge Architecture and Aesthetics S. Heath 3-1-2022

Project Description & Construction Scenario

The California Department of Transportation proposes to widen the bridge structure and upgrade the bridge railing of Jack Peters Creek bridge (Bridge No. 10-0150) located on SR 1 from PM 51.3 to PM 52.1 in Mendocino County.

Jack Peters Creek Bridge

This project proposes to widen Jack Peters Creek Bridge approximately 17 feet east to accommodate two 12-foot-wide lanes, two 6-foot-wide shoulders and a 6-foot-wide separated pedestrian walkway on the west side of the widened structure. The existing bridge rails would be upgraded to current standards and a 1" polyester concrete overlay would be placed on the existing and widened structure. Construction would last approximately 305 days. There shall be no earthwork below the OHM flood elevation of 13' MSL (Mean Sea Level) between October 15 to June 15.

Clearing and grubbing of vegetation and trees will be necessary for construction and access. Typical construction equipment types for this work are excavators, cranes, dozers, and mulchers. All construction spoils and debris would be removed and disposed of at a commercial disposal site. All soil areas disturbed by construction activities would receive permanent erosion control treatments sufficient to address the erosion potential of that soil area/slope. Those permanent erosion control will include the following items: combination of hydroseed, hydro mulch, compost, duff, and linear sediment controls.

The roadway would be widened and shifted to the east requiring the removal of trees which include saplings. SR 1 centerline alignment would be shifted 12 feet east to accommodate the pedestrian walkway along the west of the widened structure. The roadway portion of the project along SR 1 would be widened to two 12-foot lanes and two 4-6-foot shoulders from approximately 300 feet south of Larkin Road (PM 51.3) to approximately 600 feet north of County Road 500D (PM 52.1). The bridge shoulder widths would be 6-feet wide and taper to 4-foot shoulders along the widened roadway approximately 250 feet north and 1000 feet south of the widened bridge. Roadway shifting and widening would require excavation along the east side slope of SR 1 from approximately 170-feet north of Larkin Road (PM 51.35) to approximately 600 feet north of County Road 500D (PM 52.10). Approximately 17,500 CY of excavated material would be stockpiled on the USPS parcel (under a Temporary Construction Easement) adjoining Lansing Street approximately 2900-feet south of the intersection of SR-1 and Lansing Street, used as import borrow on the Salmon Creek Lead Abatement project, or temporarily stockpiled at an authorized disposal site. Construction staging may occur along the east side of the widened roadway from approximately 170-feet north of Larkin Road (PM 51.35) to 100-feet south of the intersection of SR-1 and County Road 500D (PM 51.95), the northwest corner of the intersection of SR-1 and Lansing Street, and at the USPS parcel adjoining Lansing Street approximately 2900 feet south of the intersection of SR-1 and Lansing Street. The contractor would be responsible for securing and environmentally clearing additional staging areas for equipment and material storage outside the project limits.

Figure 1: Existing Jack Peters Bridge North Bound

The existing overhead PG&E powerline would be temporarily raised to a minimum of 100 feet above the bridge deck to provide adequate clearance for the contractor perform the work and operate their equipment. Temporary power poles would be installed along the west side of SR-1 approximately 70-feet north of Lansing Street and approximately 125-feet south of the intersection of SR-1 and County Road 500D and approximately 100 feet east of the centerline of SR-1. After construction has been completed, the temporary poles would be removed, and the overhead powerlines will be relocated back to the original power pole locations.

Stage Construction

Stage 1

This stage would require traffic be shifted to the west side of the existing structure. The number of lanes would be reduced from two 12-foot lanes to one-way-reversing traffic control with one 11 to 12-foot-wide traffic lane controlled by either a temporary signal system or flagging.

The existing barrier rails and overhang on the east side of the existing structure would be removed. Any debris from this removal would be captured using a debris catchment system. The work may be needed to be performed at night during extended road closures to have room for required work to be completed and have the least impact on traffic. The removal of the existing overhang may require up to 5 full work shifts with both directions of traffic closed.

Equipment access to the proposed temporary trestle and falsework east and parallel to the bridge may be necessary. The temporary trestle, if necessary, would be approximately 25 feet wide and could extend the length of the existing 221.3-foot-long bridge or shorter, as needed. The temporary trestle may be constructed of timber decking on steel stringer beams supported approximately every 25 ft. The supports for the temporary trestle may be constructed on timber spread footings notched into the side of the canyon wall or supported by drilled steel piles. If timber pads are used, each timber pad support would likely be approximately 25 ft x 6 ft and required excavating a level surface. If piles are used, each steel pile support could consist of approximately 5-10 piles per bent. The temporary access trestle may consist of approximately 10 support bents with a mixture of timber pad spread footings and steel pile supports depending on specific location as determined by the Contractor.

Falsework would be constructed along the length of the bridge structure to support the new widening before it is self-supporting. Falsework will be approximately 25 feet wide and the length of the widened structure. The falsework would be constructed like the temporary trestle described above. Since loads are typically less for a falsework system, the contractor may be able to utilize fewer falsework bents than trestle bents. Typical falsework spans are 40 feet. The falsework will have similar foundation supports as the temporary trestle, described above. It is likely that a total of 10 falsework bents would be required for bridge construction based on bridge pier locations. If piles are used for the falsework bents, it can be assumed that approximately 5-6 piles will be needed per bent. Material excavated from notching the bench in the canyon sidewall would be hauled out of the canyon.

No falsework or temporary trestle supports will be allowed to be constructed in the wetted channel. However, falsework or temporary trestle supports will be allowed to be constructed during the dry season below the 50-year flood elevation of 13-feet MSL including the streambed between June 15th and October 15th. Falsework or temporary trestle foundations are constructed above the flood elevation to prevent the foundation from handling additional high-water flows. It is anticipated one falsework support bent and one temporary access trestle support bent would be required to be constructed below the high-water elevation.

It may be required to build one temporary access support foundation and one falsework support foundation below the 50-year flood elevation. The falsework bents would be supported on timber or precast concrete spread footings anchored into the bedrock to handle high water flows above the 50-year flood elevation. The spread footings for the falsework and access trestle would each be approximately 25 ft wide. If the bedrock below the 50-year flood

elevation is not adequate for spread footings, the temporary access trestle and falsework foundation would need to be supported on drilled steel piles.

The informal public access trail along the north facing slope of Jack Peters Creek would be improved to provide contractor access by foot to the temporary trestle and falsework to prevent erosion from foot traffic by the contractor.

The new bridge foundation types will be spread footings at Abutments 1 and 4 and Cast-in-drilled-hole (CIDH) piles at Piers 2 and 3. A reinforced pile cap will be used to connect the piles. Ground anchors will be required for spread footings at Abutments 1 and 4. The minimum diameter of the CIDH piles to be built at Piers 2 and 3 will be 24-inches. It is anticipated that no more than 16 full night closures would be needed to install the CIDH piles. All Pier 2 and Pier 3 construction will be above the ordinary high-water mark. A temporary soil nail or other type of temporary shoring by contractor may be needed during foundation excavation.
The work for the foundations would be accessed from a temporary access trestle or from cranes sitting at abutments 1 and 4. The excavation would likely be performed with rock hammers mounted on excavators and removed using buckets suspended from a crane. Impact hammer activities would only occur during daylight hours and no other impact hammer activity would occur in other parts of the environmental study limits (ESL), thus providing the opportunity for fish to disperse away from disturbance. The duration of this activity is expected to be between two to four days and no more than eight days total.
A temporary soil nail or other type of temporary shoring system may be needed to safely excavate vertical, or near-vertical, cuts in existing canyon walls to access the new pier foundations at piers 2 and 3.

Pier and abutment footings will be constructed using typical timber forming and reinforced concrete. Concrete will likely be delivered from truck mounted concrete pumps sitting on abutments or on the access trestle. Full night closure of Highway 1 may be required for the concrete placement. No more than 10 non-consecutive night closures would be required for this work.

The new pier walls and abutments will be constructed using timber and/or steel forms guyed off to the existing canyon walls for stability. Concrete will likely be placed either from the trestle or from the abutments using concrete pump trucks. A full closure of Highway 1 may be required for this operation. There would be 2 non-consecutive night closures for this work.

After falsework and new pier walls are in place, the bridge superstructure, the new Type 85 see-through concrete bridge barrier, and bridge deck would be placed working from the elevated access trestle and from each abutment. A full closure of Highway 1 may be required for this operation. Conservatively, there would be 4 non-consecutive night closures for this work.

After the new deck concrete is placed and superstructure is stressed, the closure pour will be constructed connecting the newly widened bridge deck to the existing bridge deck. There will be a minimum of 10 days needed before placing the closure pour concrete to allow shrinkage and creep type movement to happen.

A 30-foot-long approach slab will be placed at each end of the bridge. Guardrails will be installed later at each end of the bridge when the stage 2 is completed.

Stage 2

This stage will require shifting vehicular and pedestrian traffic to the east side of the existing structure before removing the existing barrier rail on the west side of the existing structure. There will be one 16-foot-wide traffic lane during Stage 2 with one-way reversing traffic controlled by a temporary signal system or flagging. A closed lane will be needed for stage 2 construction for traffic and worker safety and for contractor access since construction will be performed from the existing deck. The existing bridge barrier concrete will be removed using saw cutting and excavator mounted chipping hammers and a truck mounted bridge inspection platform. Measures to capture any falling debris from the removal of the existing barrier rail and overhang would involve placement of a debris catchment system.

After the existing bridge rail is removed, the new pedestrian rail will be constructed along the left edge of the deck. The new Type 85 see-through concrete bridge barrier would then be constructed 6 feet from the pedestrian rail towards the centerline of the structure and Midwest Guardrail System (MGS) will be installed at each corner of the bridge.

The existing bridge is 221.3 feet long and was constructed completely flat along its length. Therefore, stormwater will not naturally flow off the bridge. Current drainage is provided by relatively closely spaced scuppers through the deck. Without any slope along the road, the bridge needs a significant number of drains/scuppers to collect the water and prevent water from ponding out into the traffic lanes.

A stormwater collection system would need to pipe the water from the far end of the bridge where the first drains will be located to the stormwater treatment area to the south. Since the drain inlet collection system in the deck would require a slope of 2% along the pipe, the collection pipe would be 5.8-feet below the top of deck where it exits the bridge at the abutment. As a result, the pipe would be penetrating the bottom slab at the abutment since the total structure depth is 6-feet which includes a 6” bottom slab, so it’s only 5.5-feet from the top of the deck to the top of the bottom slab.

Once exited from the bridge, the pipe would need to be extended to the treatment location at least 100’ away. Due to the level terrain, this would place the pipe at least 8-feet below grade which would be too deep for the bioswale or other treatment facilities. Trenching would be infeasible since the ground is extremely rocky with hard rock outcropping near the surface.

Treatment systems that rely on ground infiltration would not be effective. As a result, scuppers would need to be used to capture deck runoff.

Existing pavement west of the proposed edge of pavement would be removed. The existing culvert system adjacent to Jack Peters Creek bridge located at postmile (PM) 51.50 would be abandoned due to the proximity of an active landslide below the culvert outlet. Upland and roadway run-off would be diverted from the abandoned culvert at PM 51.50 to a proposed culvert along the eastside of the roadway to the southeast abutment.

Along the NB shoulder from approximately station 14+10 (north of Larkin Rd) to 22+10 (appx. PM 51.50) a V-type AC gutter with a HP at the ES and a 6:1 (H:V) left side slope for 4.5 feet and a 3.3:1 (H:V) right side slope for 2.5 feet with a Type D dike will be constructed. The gutter will be 9" deep and have the capacity to convey the 25-year design flow. The new drainage conveyance immediately south of the bridge will discharge flow to the creek bank over the hinge point at the top of the gulch.

The existing culvert under the driveway (appx. station 29+30) across from County Road 500D will be replaced with two 18-inch plastic pipe. To accommodate the roadway realignment north of the bridge the project proposes to replace the DI with two DIs at the new flowline of the widened northbound shoulder at approximately station 32+30 (PM 52.01), extend the concrete pipe to the new DI location, and replace the existing corrugated steel pipe (CSP) that is above the DI with a 2.5-foot diameter CSP and thereby perpetuate the existing drainage patterns. Anticipated impacts from construction activities to the existing roadside ditch wetlands along the east side of the highway north of the widened structure and at the southeast corner of Larkin Road with Hwy 1 would require removal and stockpiling of wetland soils within the potential area of impact for placement in a newly constructed roadside drainage feature adjacent and east of the existing wetland. Wetland soil may be stockpiled at the US Postal Service parcel in the City of Mendocino which will be used as a Temporary Construction Easement (TCE) for the job. The construction for the widening of the bridge on the NE side (PM 51.91) will disturb an identified wetland of approximately 240' by 9'. The soil will be removed and preserved for replacement. The disturbed area will be placed in approximately the same location with the inclusion of additional area for plant establishment per environmental requirements. The project is proposing to have onsite establishment but pending the total re-establishment area determined and the total impact beyond bridge construction disturbance, an offsite location may be needed. The wetland overflow will be conveyed to a relatively flat area located at elevation 40' to 45', at NE coordinate of the bridge approximately 20' to 40'to the right of the road center line by a trapezoidal ditch, 7' wide, 1' deep with a 5' base.

Although there would not be a delineated shoulders during Stage 1 and Stage 2 construction, pedestrian traffic would be allowed on the existing/widened structure during all stages of construction except during full night closures. An existing public access trail beginning at the southwest corner of Jack Peters Bridge and meandering north and then east, under the structure, and then heading northeast before turning northwest and downslope to Jack Peters Creek, would be closed during construction activities. The existing metal beam guard rail (MBGR) at the

northwest and southwest corners of the structure would be upgraded to a mid-west guardrail system (MGS) and would be extended from the southwest corner of the structure to Lansing Street. Once construction activities for the widened structure have been completed, the public access trail will be reopened and improved during the construction of the rock lined ditch described above.

The beginning and end conform sections of pavement, as well the entrance onto County Road 500D, would be cold planned to provide a smooth transition between the existing and new pavement. Pavement delineation, such as striping and round, raised pavement markers, would be installed using specialized equipment.

This project creates less than 1 acre of new impervious area, however, will require permanent treatment Best Management Practices (BMPs) as the project falls within the jurisdiction of the North Coastal Regional Water Quality Control Board which is responsible for implementation and enforcement of State and Federal laws and regulations concerning water quality. The SW corner of the bridge, at the south corner of Lansing Street is proposed to establish the project bioswale system capable of treating approximately 0.75 acres of impervious surface. The proposed bioswale is approximately 145 feet in length with a 2-foot flat bottom and 4:1 side slopes. In addition, a potential bioswale has been proposed that can treat approximately 0.18 acres of impervious surface to be located along the eastern slopes north of the culvert at PM 52.10 as such, the inlet along the northbound shoulder would need to be modified or replaced, and the inflowing culvert would need to be replaced given its poor condition. There is no anticipated need for permanent ROW. The mandate to treat 100% of runoff from the project Post Construction Treatment Area makes having multiple treatment options desirable. The potential bioswale north of the culvert at PM 52.10 falls into this category. This bioswale will only be constructed in the case that the bioswale along Lansing Street does not meet the project's treatment requirement. In that scenario the inlet along the northbound shoulder would need to be modified or replaced, and the inflowing culvert would need to be replaced given its poor condition.

Jack Peters Creek Bridge - View 2 looking South (proposed)

County of Mendocino

Prepared by DES / Structure Design Services - Bridge Architecture and Aesthetics S. Heath 3-1-2022

Jack Peters Creek Bridge - View 4 looking West (proposed)

County of Mendocino

Prepared by DES / Structure Design Services - Bridge Architecture and Aesthetics S. Heath 3-1-2022

Jack Peters Creek Bridge - View 4 looking West (proposed)

County of Mendocino

Prepared by DES / Structure Design Services - Bridge Architecture and Aesthetics S. Heath 3-29-2022

Jack Peters Creek Bridge - View 1 looking North (Option 1 proposed)
County of Mendocino
Prepared by Structure Design Services - Bridge Architecture and Aesthetics S. Heath 11-13-2019

Jack Peters Creek Bridge - View 2 looking South (proposed)

County of Mendocino

Prepared by DES / Structure Design Services - Bridge Architecture and Aesthetics S. Heath 3-29-2022

Jack Peters Creek Bridge - View 3 looking East (proposed)

County of Mendocino

Prepared by DES / Structure Design Services - Bridge Architecture and Aesthetics S. Heath 3-1-2022

1.3. Permits and Approvals Needed

Table 1. Agency Approvals

Agency	Permit/Approval	Status
California Department of Fish and Wildlife	California Fish and Game Code Section 1602: Lake and Streambed Alteration Agreement	Permit application would be submitted after final environmental document (FED) approval
North Coast Regional Water Quality Control Board	401 Water Quality Certification	Permit application would be submitted after FED approval
U.S. Army Corps of Engineers	Section 404 Nationwide Permit and Letter of Agreement for Section 10 of the Rivers and Harbors Act	Permit and Letter of Agreement application would be submitted after FED approval
National Marine Fisheries Service	Endangered Species Act and Magnuson-Stevens Fishery Conservation and Management Act (MSA) Essential Fish Habitat (EFH) Consultation	In progress
California Coastal Commission	Coastal Development Permit	Permit application would be submitted after FED approval

1.4. Standard Measures and Best Management Practices Included in All Alternatives

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.

Aesthetics

AR-1: Aesthetic treatment to the bridges/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. Preconstruction surveys for bats would be conducted by a qualified biologist. If day roosting bats are observed, bat exclusion measures would be installed. Installation would occur between March 1 and April 15 or between September 15 and November 15 as long as night temperatures remain above 50 degrees Fahrenheit. Exclusion devices would be designed so they would not trap or entangle bats or birds. Installation of exclusion would be monitored by a qualified biologist.

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. Hydroacoustic monitoring would occur during activities such as impact pile driving, hoe ramming or jackhammering, which could potentially produce impulsive sound waves that may affect listed fish species. Hydroacoustic monitoring would comply with the terms and conditions of federal and state Endangered Species Act consultations.

   The Hydroacoustic Monitoring Plan would describe the monitoring methodology, frequency of monitoring, positions that hydrophones would be deployed, techniques for gathering and analyzing data, quality control measures, and reporting protocols.

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.

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. Surveys would be conducted for Sonoma tree vole no more than 14 days prior to tree removal. If species are discovered during construction, work would stop in the area of discovery and coordination with the appropriate resource agencies would occur.

I. 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.

J. 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 bridge demolition, pile-driving and hoe-ramming, and drilling for bridge foundations to ensure adherence to permit conditions. In-water work restrictions would be implemented.

K. A Marine Mammal Monitoring Plan would be prepared by a qualified biologist. The plan would include provisions for monitoring the bay prior to and during CIDH drilling activities to determine marine mammal presence within a predetermined safety zone. If marine mammals are present prior to or during drilling, drilling activities would be stopped until the species is out of the impact area.

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.

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

A. 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.

B. 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. 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. 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-2l**). Construction activities restricted to this period include any work below the ordinary high water. 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), Water Pollution Control Program (WPCP),) and/or project permit requirements.

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

Cultural Resources

CR-1: Caltrans would coordinate with the Sherwood Valley Band of Pomo and incorporate measures to protect tribal resources, including potential work windows associated with tribal ceremonies.

CR-2: An archeological monitor and Sherwood Valley Band of Pomo tribal monitor would be used during ground-disturbing activities.

CR-3: If cultural materials are discovered during construction, work activity within a 60-foot radius of the discovery would be stopped and the area secured until a qualified archaeologist can assess the nature and significance of the find in consultation with the State Historic Preservation Officer (SHPO).

CR-4: If human remains and related items are discovered on private or State land, they would be treated in accordance with State Health and Safety Code § 7050.5. Further disturbances and activities would cease in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to California Public Resources Code (PRC) § 5097.98, if the remains are thought to be Native American, the coroner would notify the Native American Heritage Commission (NAHC) who would then notify the Most Likely Descendent (MLD).

Human remains and related items discovered on federally-owned lands would be treated in accordance with the Native American Graves Repatriation Act of 1990 (NAGPRA) (23 USC 3001). The procedures for dealing with the discovery of human remains, funerary objects, or sacred objects on federal land are described in the regulations that implement NAGPRA 43 CFR Part 10. All work in the vicinity of the discovery shall be halted and the administering agency's archaeologist would be notified immediately. Project activities in the vicinity of the discovery would not resume until the federal agency complies with the 43 CFR Part 10 regulations and provides notification to proceed.

Geology, 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 that construction activities adhere to the most recent emissions reduction regulations mandated by the California Air Resource 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 CO_2. This replanting would help offset any potential CO_2 emissions increase.

GHG-6: Pedestrian and bicycle access would be maintained on State Route 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."

Hydrology and Floodplain

HF-1: The proposed bridge would maintain the same elevation above the ordinary high water mark (OHWM) as the existing bridge, and no new structures would be placed which would result in a substantial backflow during a flood event.

Traffic and Transportation

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

TT-2: The contractor would be required to schedule and conduct work to avoid unnecessary inconvenience to the public and to maintain access to driveways, houses, and buildings within the work zones.

TT-3: A Transportation 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 State Route 1 throughout the construction period.

UE-2: Caltrans would coordinate with utility providers to plan for relocation of any utilities to ensure utility customers would be notified of potential service disruptions before relocation.

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) as amended by subsequent orders, 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) (per the Construction General Permit Order

2009-0009-DWQ) or Water Pollution Control Program (WPCP) (projects that result in a land disturbance of less than one acre), that includes erosion control measures and construction waste containment measures to protect waters of the State during project construction.

The SWPPP or WPCP would identify the sources of pollutants that may affect the quality of stormwater; include construction site Best Management Practices (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 *Caltrans 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 or WPCP would be continuously updated to adapt to changing site conditions during the construction phase.

Construction may require one or more of the following temporary construction site BMPs: (only include those relevant to the project)

- Any spills or leaks from construction equipment (i.e., fuel, oil, hydraulic fluid, and grease) would be cleaned up in accordance with applicable local, state, and/or federal regulations.
- Accumulated stormwater, groundwater, or surface water from excavations or temporary containment facilities would be removed by dewatering.
- Water generated from the dewatering operations would be discharged on-site for dust control and/or to an infiltration basin or disposed of offsite.
- Temporary sediment control and soil stabilization devices 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 may include one or more of the following:

- 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.

1.5. 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 determination, will be prepared in accordance with the National Environmental Policy Act. 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 United States National Marine Fisheries Service and the United States Fish and Wildlife Service—in other words, species protected by the Federal Endangered Species Act).

JACK PETERS CREEK BRIDGE PROJECT

Environmentally Sensitive Habitat Area Assessment

Mendocino County, CA

01-MEN-1-PMs 51.3/52.1

EA 01-43484 / EFIS 0117000133

July 2022

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Department of Transportation, Attn: Tracy Walker, District 1, 1656 Union Street; (707) 815-6503 voice, or use the California Relay Service TTY number, 711.

JACK PETERS CREEK BRIDGE PROJECT

Environmentally Sensitive Habitat Area Assessment

Mendocino County, CA

01-MEN-1-PMs 51.3/52.1

EA 01-43484 / EFIS 0117000133

July 2022

STATE OF CALIFORNIA
Department of Transportation

Prepared By: _____ Date: 7/27/2022

Tracy Walker, Environmental Scientist
North Region Environmental–District 1, Branch E4
(707) 815-6503

Recommended for Approval By: Dawn Graydon Date: 7/27/2022

Dawn Graydon, Environmental Scientist
North Region Environmental–District 1, Branch E4
(707) 815-6246

_____ Date: 7/27/2022

Rose Dana, Associate Environmental Planner
North Region Environmental–District 1, Branch E4
(707) 815-4984

Approved By: Liza Walker Date: 7/27/2022

Liza Walker, Senior Environmental Scientist
North Region Environmental–District 1, Branch E4
(707) 502-9657

TABLE OF CONTENTS

APPENDICES

LIST OF TABLES

LIST OF FIGURES

ACRONYMS AND ABBREVIATED TERMS

ACRONYM/ABBREVIATION	DESCRIPTION
AC	Asphalt Concrete
ADA	Americans with Disabilities Act
BMPs	Best Management Practices
BP	Bishop Pine Forest ESHA
BSA	Biological Study Area
Caltrans	California Department of Transportation
CCA	California Coastal Act
CCC	California Coastal Commission
CCC	Central Coast California
CDFW	California Department of Fish and Wildlife
CDP	Coastal Development Permit
CIDH	Cast-in-Drilled-Hole
CR	Coastal Riparian ESHA
CRPR	California Rare Plant Rank
CRZ	Clear Recovery Zone
CSP	Corrugated Steel Pipe
dB	decibels
dbh	Diameter-at-Breast-Heigth
DI	Drainage Inlet
DPS	Distinct Population Segment
DSA	Disturbed Soil Area
EFH	Essential Fish Habitat
ESHA	Environmentally Sensitive Habitat Area
ESL	Environmental Study Limits
ESU	Evolutionarily Significant Unit
FES	Flared End Section
FMP	Fishery Management Plan
FP	Fully Protected
GF	Grand Fir Forest ESHA
HW	Headwall
JPC	Jack Peters Creek Stream ESHA
LCP	Local Coastal Program (Mendocino County)
lf	Linear Feet
LOC	Letter of Concurrence
MBGR	Metal Beam Guardrail
MGS	Midwest Guardrail System
MMPA	Marine Mammal Protection Act
MSA	Magnuson-Stevens Fishery Conservation and Management Act

ACRONYM/ABBREVIATION	DESCRIPTION
NC	Northern California
NCRWQCB	North Coast Regional Water Quality Control Board
NES	Natural Environment Study
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
NRLF	Northern Red-legged Frog
OHWM	Ordinary High Water Mark
OW	Other Water ESHA
PDT	Project Development Team
PFMC	Pacific Fishery Management Council
PM(s)	Post Mile(s)
PP	Plastic Pipe
project	Jack Peters Creek Bridge Project
PW	Palustrine Wetland ESHA
RBN	Red-bellied Newt
RCP	Reinforced Concrete Pipe
ROW	Right of Way
RSP	Rock Slope Protection
SNC(s)	Sensitive Natural Community(ies)
SR	State Route
STRAIN	Structure Replacements and Improvement Needs Report
STV	Sonoma Tree Vole
SWPPP	Stormwater Pollution Prevention Plan
THVF	Temporary High Visibility Fencing
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

Chapter 1. Introduction

1.1 Assessment Purpose and Need

The California Department of Transportation (Caltrans) completed this Environmentally Sensitive Habitat Area (ESHA) Assessment for the Jack Peters Creek Bridge Project (project) to meet the conditions of the California Coastal Act (CCA) and the Mendocino County Local Coastal Program (LCP). The Jack Peters Creek Bridge is immediately north of the town of Mendocino in Mendocino County and within the Coastal Zone (Figure 1). The purpose of this analysis is to quantify and describe the existing ESHAs, conduct a reduced buffer analysis for each ESHA, and recommend appropriate measures to reduce impacts on these ESHAs.

While the project limits are under the jurisdiction of the California Coastal Commission (CCC) and County of Mendocino, Resolution No. 21-094 was passed and adopted by the Mendocino County Board of Supervisors which authorizes the CCC to accept and process a consolidated Coastal Development Permit (CDP) application for the proposed project.

The purpose of the Jack Peters Creek Bridge Project is to bring the bridge to current design standards by upgrading bridge rails and widening the existing structure. The structure is on the list of bridges eligible for rail upgrades identified in the Caltrans Structure Replacements and Improvement Needs (STRAIN) Report as the rails have been identified as deficient, with concrete spalls and exposed and corroded rebar. In addition, the existing shoulder widths do not provide adequate room for disabled vehicles or collision-avoidance maneuvers and cannot adequately accommodate bicycle traffic or pedestrians.

This assessment summarizes information gathered from previous biological surveys for the project and investigations conducted solely for the purposes of this ESHA Assessment. As such, this report includes a review of resources that meet the definition of ESHA under both the California Coastal Commission following regulations set by the CCA and the County of Mendocino following regulations set by the LCP. These regulations cover projects within the Coastal Zone, which include wetlands and Other Waters of the U.S. and State, sensitive natural communities, riparian areas, areas of vegetation that contain species of rare or endangered plants, and habitats of rare and endangered plants and animals.

Figure 1. Project Location

To facilitate acquisition of a Coastal Development Permit under the State CCA and the Mendocino County LCP, this assessment includes recommendations of appropriate measures to reduce potential effects on ESHAs within the construction project footprint and Environmental Study Limits (ESL).

1.2 Regulatory Background

The Environmental Study Limits for this ESHA assessment are defined as the area of potential impacts of the project. The Biological Study Area (BSA) includes a 100-foot Coastal Zone buffer surrounding the ESL (Figure 2).

Figure 2. Environmental Study Limits (ESL) and 100-foot Coastal Zone BSA Buffer

When identifying and mapping ESHAs within the ESL, and when considering indirect and direct impacts the project could have on an ESHA, various regulations were relied on, as recommended in state and local guidance (CCC 2019 and County of Mendocino 1991). Both the CCC and County of Mendocino provide definitions of ESHA; these combined definitions/guidance were taken into consideration when evaluating potential ESHAs within the project area. ESHA definitions are shown below:

California Coastal Act ESHA Definition (CCA Section 30107.5)

Environmentally sensitive habitat area means any areas in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.

County of Mendocino ESHA Definition (LCP Section 20.496.010).

ESHAs are listed in Section 20.496.010 as including:

"...anadromous fish streams, sand dunes, rookeries and marine mammal haul-out areas, wetlands, riparian areas, areas of pygmy vegetation which contain species of rare or endangered plants and habitats of rare and endangered plants and animals."

California Coastal Act ESHA Land Resources (CCA Section 30240)

(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.

(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas and shall be compatible with the continuance of those habitat and recreation areas.

California Coastal Act ESHA Coastal Waters, Streams, Wetlands, Estuaries, and Lake Resources (CCA Section 30231)

The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground

water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

County of Mendocino ESHA Buffer (LCP, Section 20.496.020)

"An area that shall be established adjacent to all ESHAs. The purpose of a buffer area shall be to provide for a sufficient area to protect the ESHA from significant degradation resulting from future developments. The width of the buffer area shall be a minimum of 100-feet, unless an applicant can demonstrate, after consultation and agreement with the California Department of Fish and Wildlife (if applicable), and County Planning Staff, that 100-feet is not necessary to protect the resources of that particular habitat area and the adjacent upland transitional habitat function of the buffer from possible significant disruption caused by the proposed development. The buffer area shall be measured from the outside edge of the ESHAs and shall not be less than 50-feet in width."

California Coastal Act Wetland Definition and Mapping Guidelines (CCC 1981)

Section 30121 of the California Coastal Act (CCC 1976) states: "Wetland" means lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens.

However, due to highly variable environmental conditions along the length of the California coast, wetlands may include a variety of different types of habitat areas. For this reason, some wetlands may not be readily identifiable by simple means. In such cases, the Commission will also rely on the presence of hydrophytes and/or the presence or hydric soils. The presence or absence of hydrophytes and hydric soils make excellent physical parameters upon which to judge the existence of wetland habitat areas for the purposes of the Coastal Act, but they are not the sole criteria. In some cases, proper identification of wetlands will require the skills of a qualified professional.

County of Mendocino Development in Wetlands and Estuaries (Section 20.496.025)

Section 20.496.025 of the Mendocino County Code identifies allowable "development" for wetlands and estuaries as presented below:

"(A) Development or activities within wetland and estuary areas shall be limited to the following:

...(7) Incidental public service purposes which temporarily impact the resource including but not limited to burying cables and pipes, or inspection of piers, and maintenance of existing intake and outfall lines…"

"(B) Requirements for permitted development in wetlands and estuaries.

(1) Any proposed development that is a permitted development in wetlands and estuaries must meet the following statutory requirements, and supplemental findings pursuant to Section 20.532.100 (see below):

(a) There is no feasible, less environmentally damaging alternative.

(b) Where there is no feasible, less environmentally damaging alternative, mitigation measures have been provided to minimize adverse environmental effects."

(c) All feasible mitigation measures capable of reducing or eliminating project related impacts have been adopted.

Section 20.496.025 also states that:

"(3) Diking or Filling. If a development involves diking or filling of a wetland, required minimum mitigation measures shall include the following:

(a) If an appropriate restoration site is available, the applicant shall acquire and restore an equivalent area of equal or greater biological productivity and dedicate the land to a public agency or otherwise permanently restrict its use for open space purposes. The site shall be purchased before the dike or fill development may occur and, at a minimum, restoration must occur simultaneously with project construction, or

(b) The applicant may, in some cases, be permitted to open equivalent areas to tidal action. This method of mitigation would be appropriate if the applicant already owned filled, diked areas which themselves were not environmentally sensitive but would become so if such areas were opened to tidal action or provided with other sources of surface water.

(c) If no appropriate restoration sites under options (a) or (b) are available because the applicant is unable to find a willing seller, the applicant shall pay an in-lieu fee of sufficient value to an appropriate public agency for the purchase and restoration of an area of equivalent productive value or equivalent surface area. Such replacement site shall be purchased before the dike or fill development permit is issued.

This option shall be allowed only if the applicant is unable to find a willing seller of a potential restoration site. The in-lieu fee shall reflect the additional costs of acquisition, including litigation, as well as the cost of restoration. If the public agency's restoration project is not already approved, the public agency may need to be a co-applicant for a Coastal Development Permit to provide adequate assurance that conditions can be imposed to ensure purchase and restoration of the mitigation site prior to issuance of the permit.

(d) Such mitigation measures shall not be required for temporary or short-term fill or diking, provided that a bond or other evidence of financial responsibility is provided to assure that restoration will be accomplished in the shortest feasible time and that such activities will not cause permanent damage to wetland or estuarine ecosystems.

(4) Diking, filling, or dredging of a wetland or estuary shall maintain or enhance the functional capacity of the wetland or estuary. Functional capacity means the ability of the wetland or estuary to be self-sustaining and to maintain natural species diversity. In order to establish that the functional capacity is being maintained, the applicant shall demonstrate all of the following:

(a) That the development will not alter present plant and animal populations in the ecosystem in a manner that would impair the long-term stability of the ecosystem; i.e., natural species diversity, abundance and composition are essentially unchanged as a result of the project;

(b) That the development will not harm or destroy a species or habitat that is rare or endangered;

(c) That the development will not harm a species or habitat that is essential to the natural biological functioning of the wetland or estuary;

(d) That the development will not significantly reduce consumptive (e.g., fishing, aquaculture, and hunting) or nonconsumptive (e.g., water quality

and research opportunity) values of the wetland or estuarine ecosystem. (Ord. No. 3785 (part), adopted 1991)"

California Coastal Act Riparian Habitat Definition (CCC 1981)

For the purposes of this guideline, riparian vegetation is defined as that association of plant species which grows adjacent to freshwater watercourses, including perennial and intermittent streams, lakes, and other freshwater bodies.

The upland limit of a riparian habitat… is determined by the extent of vegetative cover. The upland limit of riparian habitat is where riparian hydrophytes are no longer predominant.

… riparian vegetation may be distinguished from wetland vegetation by the different kinds of plant species.

County of Mendocino Development in Riparian Corridors (Section 20.496.035 of the Mendocino County Code):

"(A) No development or activity which could degrade the riparian area or diminish its value as a natural resource shall be permitted in the riparian corridor or in any area of riparian vegetation except for the following:

…(2) Pipelines, utility lines and road and trail crossings when no less environmentally damaging alternative route is feasible."

"(B) Requirements for development in riparian habitat areas are as follows:

(1) The development shall not significantly disrupt the habitat area and shall minimize potential development impacts or changes to natural stream flow such as increased runoff, sedimentation, biochemical degradation, increased stream temperatures and loss of shade created by development;

(2) No other feasible, less environmentally sensitive alternative exists;

(3) Mitigation measures have been incorporated into the project to minimize adverse impacts upon the habitat.

(4) Where development activities caused the disruption or removal of riparian vegetation, replanting with appropriate native plants shall be required at a minimum ratio of one to one (1:1) and replaced if the survival rate is less than seventy-five (75) percent…"

Supplemental Findings (Section 20.532.100) as referenced in Section 20.496.025

Additional guidance for allowable development in Mendocino County, Section 20.496.025 of the Mendocino County Code states:

> *"In addition to required findings, the approving authority may approve or conditionally approve an application for a permit or variance within the Coastal Zone only if the following findings, as applicable, are made:*
>
> *(A) Resource Protection Impact Findings.*
>
> *(1) Development in Environmentally Sensitive Habitat Areas. No development shall be allowed in an ESHA unless the following findings are made:*
>
> *(a) The resource as identified will not be significantly degraded by the proposed development.*
>
> *(b) There is no feasible less environmentally damaging alternative.*
>
> *(c) All feasible mitigation measures capable of reducing or eliminating project related impacts have been adopted."*

1.3 Project Description

Caltrans proposes a bridge widening project at Jack Peters Creek Bridge on State Route (SR) 1, post mile (PM) 51.87, immediately north of the city of Mendocino in Mendocino County (Figure 1). Extending from approximately PMs 51.3 to 52.1, the project would include widening of the existing bridge and bridge approach areas, as well as upgrading railings. The project is within the Mendocino United States Geological Survey (USGS) quadrangle, in Township 17 North, Range 17 West, and Section 19.

Work would occur at the bridge abutments, piers, top of the bridge deck, and adjacent to the existing roadway (Appendix A—Construction Limits and Project Actions Overview). Staging and stockpiling would take place on the east side of the widened roadway approximately 650 feet north of County Road 500D south to the bridge, and at the northwest corner of the intersection of SR 1 and Lansing Street. In addition, there is one proposed staging area within the unincorporated community of Mendocino, approximately 0.32 mile south of the project, which comprises a three-acre U.S. Postal Service parcel off Lansing Street.

1.3.1 Project History

The existing structure spanning Jack Peters Creek was built in 1939. The structure is a 3-span bridge with two parallel single-cell box girders on reinforced concrete, 3-cell hollow-wall piers, and reinforced concrete seat abutments, all founded on reinforced concrete spread footings. The existing bridge has two 12-foot-wide lanes, two 1-foot-wide shoulders, two 1-foot-wide curbs, and two 8-inch-wide bridge rails, with an overall approximate length of 223 feet and an approximate width of 30 feet. Vertical drains directly discharge runoff from the bridge into the creek. As noted on As Built drawings from 1997, Jack Peters Creek Bridge was seismically retrofitted in 1996. Several geotechnical investigations have been conducted at the project site. Because the bases of the piers were inaccessible for geotechnical exploration, based on data collected from soil cores at the abutments (Caltrans 2022a), these reports assumed the substrate composition was sand and gravel overlying shallow bedrock comprising shale and conglomerate material at the base of the piers.

1.3.2 Project Alternatives Jack Peters Creek Bridge Build Alternative

Caltrans has identified the build alternative to widen and upgrade the Jack Peters Creek Bridge. As shown in Appendix A, the proposed build alternative would maintain the existing bridge length of approximately 223 feet and widen the bridge from approximately 30 feet to 47 feet. The new bridge would have two 12-foot-wide lanes, two 6-foot-wide shoulders, upgraded barrier rails, and a 6-foot-wide pedestrian walkway with rails on the west side of the structure. The bridge shoulder widths would taper to 4-foot shoulders along the widened roadway approximately 150-250 feet north and 1000 feet south of the widened bridge. Roadway shifting and widening would require excavation along the east side slope of SR 1 from approximately 170-feet north of Larkin Road (PM 51.35) to approximately 1000- 600 feet north of County Road 500D (PM 52.10).

The following sections describe each anticipated aspect of construction of the proposed build alternative.

1.3.3 Construction Scenario

Work would entail the following (construction plan sets are included in Appendix A):

- ***Bridge Length:*** Maintaining the existing bridge length of approximately 223 feet.
- ***Bridge Width:*** Widening the existing bridge by approximately 17 feet to the east, from approximately 30 feet wide to 47 feet wide.

- ***Bridge Lanes:*** Maintaining bridge lanes widths of approximately 12 feet.
- ***Bridge Shoulders:*** Widening bridge shoulders from 1 foot to 6 feet.
- ***Pedestrian Walkway:*** Adding a separated 6-foot-wide pedestrian walkway with pedestrian rails on the west side of the bridge.
- ***Railing:*** Upgrading the existing bridge barrier rails to meet current standards, replacing the existing metal beam guardrail (MBGR) that transitions from the bridge with Midwest Guardrail System (MGS), and extending the guardrail on the southwest corner of the structure to Lansing Street.
- ***Centerline:*** Shifting the centerline of SR 1 approximately 12 feet east to match the centerline of the widened bridge.
- ***Roadway Widening:*** Widening and shifting the roadway approaches to the east of SR 1 to meet the new centerline, with two 12-foot-wide lanes and 6-foot-wide shoulders on the bridge that would taper into existing roadway shoulder widths.
- ***Excavation:*** Excavating the slope to the east of the road to accommodate the shifted and widened alignment.

Construction on the bridge would be conducted in two stages, taking two seasons to complete. These stages and other project activities, such as vegetation removal, are described in more detail below.

1.3.4 Stage 1

This stage involves removing the barrier rail and overhang on the eastern side of the bridge and widening the structure.

Bridge Rail Demolition – East Side

A debris catchment system would be installed, and the existing eastern bridge rail and overhang would be removed. Tools for removal could include saw cutters, excavator-mounted chipping hammers, and a truck-mounted bridge inspection platform. This work may be conducted at night (during extended road closures) to ensure room for equipment maneuvering.

Temporary Trestle and Falsework

A temporary trestle and falsework would be constructed parallel to the existing bridge to support bridge widening. Access to these features would be constructed adjacent to the southeast and northeast corners of the bridge. An informal public access trail on the south side of the bridge would be improved for foot access, and to prevent erosion.

The temporary trestle would facilitate safe and efficient movement of people and equipment across the creek and serve as a work platform. To allow for free movement of equipment, the temporary trestle is anticipated to be constructed at least 20 to 40 feet away from the bridge. The trestle would remain in place until bridge construction is complete.

The temporary trestle would be approximately 25 feet wide and may extend the length of the existing bridge. It would be constructed of timber decking on steel stringer beams, supported by bents approximately every 10 to 25 feet (with approximately 10 to 15 bents total). All bents for the temporary trestle would have supports notched into the canyon wall above the ordinary high water mark (OHWM) of the creek. Where the trestle spans the creek's OHWM, at approximately 45 to 50 feet wide, a 3-foot-thick girder beam would lay flat and be notched into the canyon wall. The supports may be built in either of two ways, depending on the specific location and as determined by the contractor:

- On timber or precast concrete spread footings. Each footing would require excavation of a level surface that would be approximately 25 feet by 6 feet.
- On drilled steel piles. Each steel pile support would consist of 5 to 10 piles per bent. Piles would require excavation of a small bench to facilitate work.

Falsework would be installed to support the construction of the widened bridge section. It would be approximately 25 feet wide and extend the length of the bridge (i.e., 223 feet). Falsework construction would mirror the construction of the temporary trestle, including bent supports in the canyon wall all above the OHWM, with approximately 10 to 15 bents anticipated for construction. If piles are used, approximately 5 to 6 piles would be needed per bent.

Work would only be allowed below the top of bank but above the OHWM between June 15 and October 15. Timber or precast concrete spread footings would be anchored to bedrock; if the bedrock is not adequate for spread footings, drilled or driven piles would be used. Construction spoils and debris would be removed and disposed of at a permitted disposal site.

Bridge Foundations: Piers and Abutments

Widening of the bridge would require extending the two bridge abutments and two piers. The expanded abutment foundations would be spread footings, which would require the use of vertical ground anchors. The expanded foundations for the piers would be cast-in-drilled-hole (CIDH) piles connected by a reinforced pile cap at the piers. The CIDH piles are anticipated to be at least 24 inches in diameter, and installation is conservatively anticipated to take up to 30 days, though active drilling time would be less.

The foundations would be accessed from the temporary trestle, or from cranes located on either of the abutments. Excavation for the foundations would be conducted using hoe rams mounted on excavators. Impact hammer activity, such as hoe ramming, would only occur during the day, and no other impact hammer activity would occur simultaneously. The duration of this activity is expected to be between two and four days, but no more than eight days total. Temporary soil nail walls or other type of retaining walls may be needed to safely excavate the canyon wall to access pier foundations.

The pier and abutment footings would be constructed using typical timber forms and reinforced concrete. Pier and abutment walls would be constructed using timber and/or steel forms guyed off to the existing canyon walls for stability. Concrete for both the footings and walls would likely be poured using truck-mounted concrete pumps stationed on the abutments or the temporary trestle. For this work, full nighttime closures of SR 1 may be required.

Bridge Structure Construction

After the falsework and expanded piers are in place, the bridge superstructure would be constructed, which includes the bridge deck and rails. This work would be conducted from the temporary trestle and the abutments. Full nighttime closures of SR 1 would be required for this work.

Closure Pour

After the new deck is placed and the superstructure stressed, the closure pour would be constructed to connect the newly widened bridge deck to the existing bridge deck. Approach slabs would be placed on each side of the bridge and MGS installed.

1.3.5 Stage 2

This stage would require replacement of the barrier rail on the west side of the bridge. Work in this stage would be conducted from the existing deck.

Bridge Rail Demolition and Construction – West Side

A debris catchment system would be installed, and the existing eastern bridge rail would be removed. A new pedestrian rail would be constructed along the edge of the deck, and a Type 85 concrete bridge barrier would be constructed six feet in from the pedestrian rail (between the pedestrian walkway and vehicular traffic). MGS would be installed at the western corners of the bridge.

1.3.6 Other Project Activities and Information

Vegetation Removal

Clearing and grubbing of vegetation and trees would be required for access and bridge and roadway widening. Existing vegetation would be preserved as much as possible within the work area. Typical equipment associated with this work includes excavators, cranes, dozers, and mulchers. Construction spoils and debris would be removed and disposed of at a permitted disposal site. All disturbed soil areas would be restored to pre-construction conditions after completion of the work.

Traffic Control

Construction on the bridge would require reducing the number of lanes open to traffic, and implementation of signalized one-way reversing traffic control. In the first stage, the eastern lane would be closed, and traffic would be directed to the western bridge lane. During the second stage of construction, this would be reversed; the western lane would be closed, and traffic directed to the eastern bridge lane. Pedestrian and bicycle traffic would be accommodated over the bridge during all stages of construction.

Construction activities, such as removing the bridge overhang and rails and placing the precast girder, may require full closures of the bridge.

An informal public access trail that begins at the southwest corner of the bridge and meanders down to the creek would be closed during construction activities and reopened once work is complete.

Overhead Utility Relocation

An overhead power line would be temporarily raised to a minimum of 100 feet above the bridge deck to provide adequate clearance for the contractor to work and operate equipment. It is anticipated the existing utility poles (one to the southwest of the bridge and one to the northeast) would be removed, and temporary poles installed nearby. When construction is complete, the temporary poles would be removed and the permanent poles installed at their original locations.

Roadway Construction

The roadway leading to the bridge would be widened to the east to meet the new bridge centerline. Bridge shoulder widths would be 6 feet wide, tapering to 4-foot shoulders along the widened roadway approximately 150-250 feet north and 1,000 feet south of the widened bridge. Roadway shifting and widening would require excavation along the east side slope of SR 1 from approximately 170 feet north of Larkin Road (PM 51.35) to approximately 600 to 1,000 feet north of County Road 500D (PM 52.10). Widening would require vegetation removal and the excavation of slopes.

The beginning and end sections of pavement, as well as the entrance onto County Road 500D, would be cold-planed to provide a smooth transition between existing and new pavement. Pavement delineation, such as striping and round, raised pavement markers, would be installed.

Guardrail

The existing MBGR at the corners of the structure would be upgraded to MGS. The guardrail on the southwest corner would be extended to Lansing Street.

Drainage Improvements

Drainage patterns in the project area would be perpetuated to the extent feasible. Scuppers would remain in the renovated bridge deck due to topographic constraints along SR 1; the bridge deck is at a low point topographically and water would pool on the surface. Also, existing pavement west of the proposed edge of pavement along SR 1 would be removed to increase area of permeable soil.

Drainage work would occur in four general locations, or drainage systems. To accommodate the roadway realignment north of the bridge, the project proposes to remove, install and replace various culverts, culvert down drains, drainage inlets (DIs), asphalt concrete (AC) gutters, ditches, and headwalls adjacent to the east side of the northbound lane of SR 1.

- South of Jack Peters Creek Bridge, the main drainage system at PM 51.50 would be abandoned and filled due to the proximity to an active landslide below the culvert outlet west of SR 1. Instead, roadway stormwater run-off would be diverted to a V-type gutter and dike along the east side of the roadway from approximately 200 feet north of Larkin Road north to PM 51.50. The northern DI at PM 51.50 would carry the northbound water flow towards the creek into a new plastic pipe culvert that would be connected to a down drain which opens onto the top of the southern edge of the gulch at Jack Peters Creek. Additionally, to the southeast of the bridge, an earthen ditch would be installed parallel to the east of guardrail. The water flow from the new ditch would connect with the DI at the north end of the new plastic pipe culvert at the beginning of the down drain at PM 51.86.

- Improvements at the drainage system at PM 51.96–PM 51.97 would involve removing the existing cross culvert crossing the private driveway at 11501 SR 1 and installing two sets of plastic pipe cross culverts, one set connecting diagonally from a new DI at PM 51.97 to PM 51.96, and one set connecting perpendicularly from the northeast corner of the driveway at PM 51.97 to PM 51.96. The culvert outlet would include a plastic flared end section (FES) and a rock slope protection (RSP) pad.

- North of the bridge, starting approximately at the northern terminus of the project footprint, roadway stormwater run-off would be diverted to a V-type gutter and dike along the east side of the roadway south to PM 52.01. Whatever run-off is not collected

there would continue into another V-type gutter terminating at PM 51.97. Improvements at the drainage system at PM 52.01 would involve replacing two DIs east of the shoulder, installing a new headwall upslope of the existing culvert down drains, replacing the down drains in kind, and installing a reinforced concrete pipe (RCP) and concrete collar to connect the new DI with the existing cross culvert that crosses SR 1.

- The down drain at the northern terminus at PM 52.11 would be replaced.

Additional details for these features are provided below in Table 1.

Table 1. Drainage Improvements Along SR 1

Drainage System	Proposed Improvement	Location along SR 1	Dimensions
1	Install asphalt concrete (AC) gutter adjacent to the east of the new edge of shoulder and add two drainage inlets (DI) at beginning and end of gutter.	Postmile (PM) 51.36 to PM 51.50	Gutter: 800 ft long x 7 ft wide (top) x 0.75 ft deep
	Remove existing DI and abandon existing concrete cross culvert. Remove existing corrugated steel pipe (CSP) down drain at culvert inlet.	PM 51.50	
	Install headwall (HW) at top of inlet slope and two DIs at base of inlet slope. Add two CSP down drains connecting HW to the DIs.	PM 51.50	HW: 24 inch long Down drain: 30 ft long x 24 inch diameter
	Install plastic pipe (PP) culvert from new DI at PM 51.50 continuing to new DI at PM 51.86	PM 51.50 to PM 51.86	Culvert: 196 ft long x 42 inch diameter
	Install earthen ditch adjacent to the east of new guardrail southeast of abutment 1.	PM 51.85 to PM 51.86	Earthen ditch: 100 ft long x 3 ft wide (top) x 0.5 ft deep
	Install CSP down drain southeast of abutment 1, which will outlet into Jack Peters Gulch.	PM 51.86	Down drain: 17.6 ft long x 42 inch diameter
2	Install AC gutter adjacent to the east of the new edge of shoulder and add two drainage inlets (DIs) at beginning and end of gutter.	PM 51.97 to PM 52.01	Gutter: 274 ft long x 4.5 ft wide (top) x 0.5 ft deep
	Remove existing cross culvert across driveway at 11501 Highway 1.	PM 51.96 to PM 51.97	

Drainage System	Proposed Improvement	Location along SR 1	Dimensions
	Install three parallel cross culvert PPs between new DIs on northwest and south sides of driveway at 11501 Highway 1. Install additional DI at far northeast corner of ROW on north side of driveway at 11501 Highway 1 and install two parallel cross culvert PPs between new northeast corner DI and DI south of driveway at 11501 Highway 1.	PM 51.96 to PM 51.97	Three (3) culverts: 41.7 ft long x 15 inch diameter Two (2) culverts: 26.8 ft long x 18 inch diameter
	Install flared end section (FES) at cross culvert outlet south of driveway at 11501 Highway 1. Install rock slope protection (RSP) at FES, which is attached to outlet of PP cross culvert.	PM 51.96	FES: 18 inch long x 18 inch wide RSP: 11 ft long x 4.5 ft wide x 1 ft deep
	Install 3-parameter wetland bioswale with 4:1 slope.	PM 51.89 to 51.96	264 ft long x 21 ft wide (top) x 9 ft wide (bottom)
3	Install AC gutter/ditch adjacent to the east of the new edge of shoulder and add two DIs at southern end of gutter.	PM 52.01 to PM 52.11	900 ft long x 4.5 ft wide (top) x 0.5 ft deep
	Remove existing DI and both existing CSP down drains on right shoulder of northbound SR 1.	PM 52.01	
	Install reinforced concrete pipe (RCP) culvert and concrete collar to connect new expanded DIs with existing RCP cross culvert system. Replace old CSP down drains with two new down drains.	PM 52.01	Culvert: 5.1 ft long x 42 inch diameter Two (2) down drains: 39.6 ft long x 30 inch diameter
	Install HW at top of slope.	PM 52.01	HW: 30 inch long
4	Replace in-kind existing CSP down drain.	PM 52.11	Down drain: 43 ft long x 30 inch diameter

Additionally, a vegetated bioswale treatment for offsetting impacts to stormwater discharge would be created near the intersection of Lansing Street with SR 1 and a wetland ditch would be created to offset impacts to potentially jurisdictional wetlands and Waters of the U.S. and State east of SR 1 north of the bridge. For stormwater treatment, a vegetated bioswale would be constructed southwest of the bridge, at approximately the intersection of SR 1 with Lansing Street. The bioswale would be adjacent to the west of SR 1, starting approximately 43 feet south of the intersection. At the intersection with Lansing Street, the bioswale would continue for another 102 feet adjacent to the east of the northbound lane of Lansing Street. The proposed bioswale is anticipated to be approximately 100 feet in length, 1 foot in depth, with a 10-foot-wide top with and a 2-foot-wide flat bottom, and a 1% longitudinal slope.

For onsite offsets due to impacts to wetlands and waters of the U.S. and State, a new roadside wetland ditch and intermittent drainage ditch would be created. The new wetland ditch would be sourced from stockpiled wetland soil generated from wetland ditches that would be impacted by widening the road to the east. This ditch, or swale, would extend along the east side of the widened northbound lane shoulder at approximately PM 51.96 and flow south towards Jack Peters Creek to approximately PM 51.88. The new intermittent drainage ditch would begin at the southern terminus of the new wetland ditch and follow the northwest-southeast contour of the north bank down to Jack Peters Creek. The drainage ditch would stop where it connects to the seep wetland on the bank (approximately 35 feet above the OHWM), where the water would be filtrated down through the seep and discharged at the bed of Jack Peters Creek.

Disturbed Soil Areas

Construction of the project would require placement of fill and cuts (Appendix A—Construction Plan Sets). Due to widening of the two abutments and piers and SR 1, access areas, and work pads would result in approximately 1.53 acres of temporarily disturbed soil area (DSA) and 0.42 acre of permanently DSA. Total soil disturbance for the project would be approximately 1.95 acres. Excavated material would either be used as needed backfill material during construction or hauled away to an appropriate disposal site. Temporary storage of excavated material may be necessary.

Right of Way

Most project work would be conducted within the existing Caltrans right of way. However, a temporary construction easement would be required for the off-site construction staging area off Lansing Street.

Equipment Used

Typical equipment used for construction would include pavers, cranes, hoe rams, pile drivers, CIDH drill rig, excavators, backhoes, manlifts, cranes, pickup trucks, hauling and dump trucks, compactors, portable generators, boom trucks, concrete trucks, saws, pumps, jackhammers, site trailers, and storage boxes.

Night Work

Night work and full closures of SR 1 may be required several times for this project, such as for bridge overhang and rails and placing the precast girder. Additionally, there may be night work if construction needs to be accelerated and/or operations are occasionally required to be completed at night, such as relocating impact hammer equipment and pouring concrete formwork around the widened abutments. Other reasons for working at night may include work delays for unforeseen reasons such as a continuous concrete placement activity (taking longer than one shift), mechanical breakdown during a concrete pour, or paving operations. Lighting would be directed away from the creek to avoid impacting the aquatic environment and focused specifically on the portion of the bridge actively under construction. Any night work would be subject to the current Caltrans Standard Specification noise limitation of 86 decibels (dB) at 50 feet between the hours of 9:00 p.m. and 6:00 a.m.

Post-construction Activities

After completion of construction, all materials used would be removed from the site. A Revegetation Plan has been developed for the project and would include replanting disturbed areas. In addition, additional areas of revegetation would remove invasive plant species, such as Monterey cypress (*Hesperocyparis macrocarpa*), and replant these areas with native species. These activities would be conducted within the existing right of way adjacent to the project construction footprint. Riparian vegetation would be planted from November to February in the year following construction.

1.3.7 Anticipated Schedule

Construction is anticipated to last approximately 305 days over two seasons due to in-channel work restrictions limiting activities below the Ordinary High Water Mark (OHWM) from June 15th to October 15th. These restrictions would protect the most vulnerable life stages of sensitive fish species occurring within Jack Peters Creek.

1.4 Standard Measures and Best Management Practices

The following section provides a list of standard practices that are included as part of the project description. Standard measures are prescriptive and sufficiently standardized to be generally applicable, and do not require special tailoring to a project situation. These practices apply to all similar projects. For this reason, these measures and practices do not qualify as project mitigation and the effects of the project are analyzed with these measures in place. Standard measures relevant to the protection of natural resources deemed applicable to the proposed project include:

1.4.1 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), as amended by subsequent orders, 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) (per the Construction General Permit Order 2009-0009-DWQ) that includes erosion control measures and construction waste containment measures to protect Waters of the State during project construction.

The SWPPP would identify the sources of pollutants that may affect the quality of stormwater; include construction site Best Management Practices (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 *Caltrans 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 may require one or more of the following temporary construction site BMPs:

- Any spills or leaks from construction equipment (e.g., fuel, oil, hydraulic fluid, and grease) would be cleaned up in accordance with applicable local, state, and/or federal regulations.
- Accumulated stormwater, groundwater, or surface water from excavations or temporary containment facilities would be removed by dewatering.
- Water generated from the dewatering operations would be discharged on-site for dust control and/or to an infiltration basin or disposed of off-site.
- Temporary sediment control and soil stabilization devices 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 may include one or more of the following:

- 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.

1.4.2 Biological Resources

BR-1: General

Before start of work, as required by permit or consultation conditions, a Caltrans biologist or environmental construction liaison 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. Preconstruction surveys for bats would be conducted by a qualified biologist. If day roosting bats are observed, bat exclusion measures would be installed. Installation would occur between March 1 and April 15 or between September 15 and November 15 as long as night temperatures remain above 50 degrees Fahrenheit. Exclusion devices would be designed so they would not trap or entangle bats or birds. Installation of exclusion would be monitored by a qualified biologist.

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. Hydroacoustic monitoring would occur during activities such as hoe ramming or jackhammering which could potentially produce impulsive sound waves that may affect listed fish species. Hydroacoustic monitoring would comply with the terms and conditions of federal and state Endangered Species Act consultations.

   The Hydroacoustic Monitoring Plan would describe the monitoring methodology, frequency of monitoring, positions that hydrophones would be deployed, techniques for gathering and analyzing data, quality control measures, and reporting protocols.

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.

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. Surveys would be conducted for Sonoma tree vole no more than 14 days prior to tree removal. If species are discovered during construction, work would stop in the area of discovery and coordination with the appropriate resource agencies would occur.

I. 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.

J. 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 bridge demolition, pile driving and hoe-ramming, and drilling for bridge foundations to ensure adherence to permit conditions. In-water work restrictions would be implemented.

K. In coordination with NMFS, a Marine Mammal Monitoring Plan would be prepared by the contractor prior to construction. The plan would include observation of the bay (e.g., seal habitat) by a qualified biological monitor prior to beginning CIDH activities; specifically, to note if any marine mammals may be within a predetermined safety zone before or during construction. The biological monitor would have the authority to stop CIDH activities until they confirm the species is off-site or has moved a distance that is believed to be out of range for disturbance.

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.

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

A. 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.

B. 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. 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. 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(I)**). Construction activities restricted to this period include any work below the ordinary high water. 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 SWPPP and/or project permit requirements.

B. See **BR-4** for THVF information.

Chapter 2. Study Methods

2.1 Previous Studies

Several previous biological studies were prepared for various aspects and stages of the project. These included the Natural Environment Study (NES) dated February 2013 (Caltrans 2013), the Botanical and ESHA Assessment report dated October 2014 (Caltrans 2014)—included as part of the Coastal Development Permit application for geotechnical investigations in which Jack Peters Creek was one of four bridges involved in the project—and the NES for bridge widening at Jack Peters Creek Bridge dated December 2021 (Caltrans 2021). Each study included the most up-to-date conditions, scientific data, and relevant regulations.

Information in the previous NES' and ESHA reports included:

1) Vegetation types present (Figures 3 and 4);
2) Potential jurisdictional wetlands and waters present (Figure 5);
3) Factors indicating the potential for special status species;
4) Special status species present;
5) Potentially sensitive water quality receptors;
6) Inventory baseline conditions of biological resources; and
7) Identification of potential issues for the study.

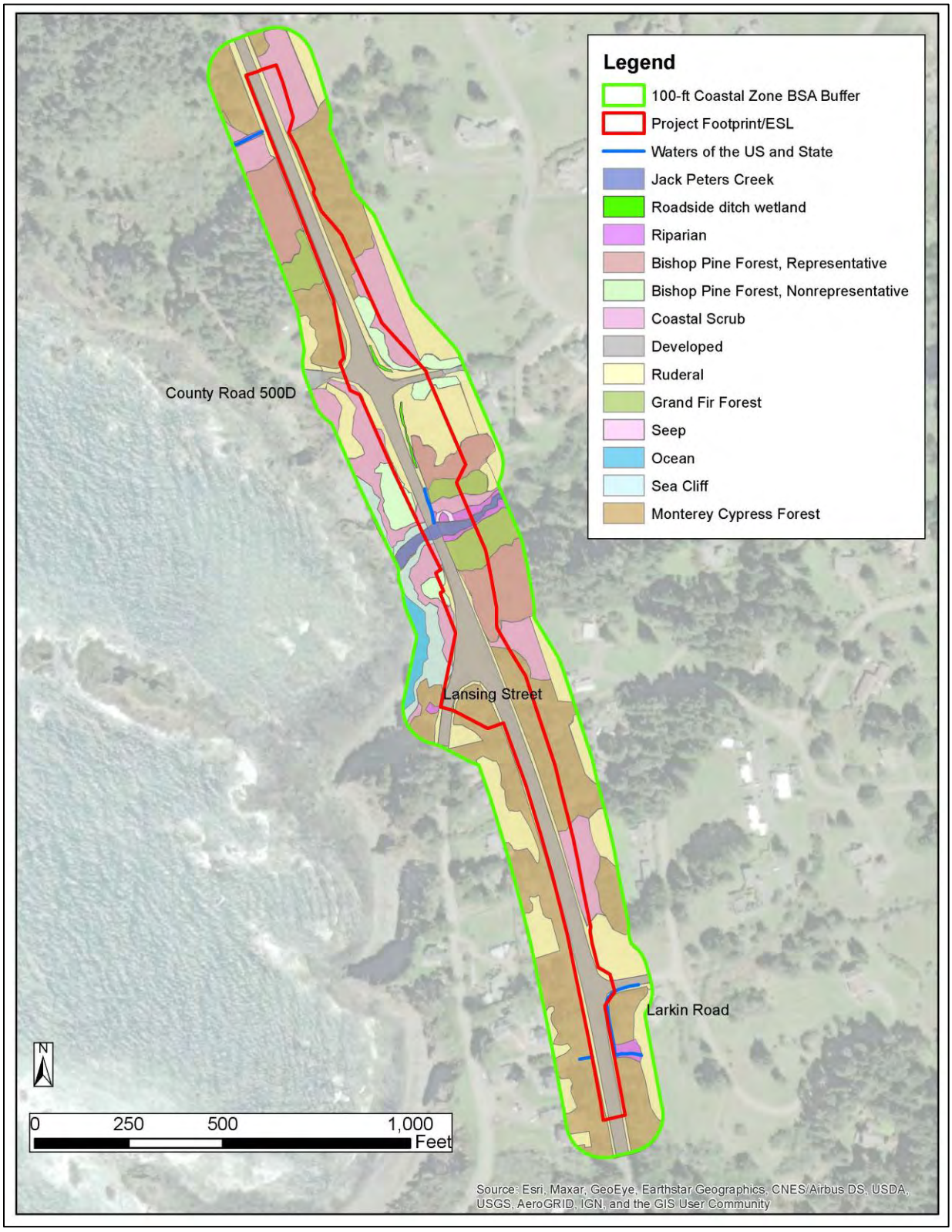


Figure 3. Vegetative Types within the ESL and BSA

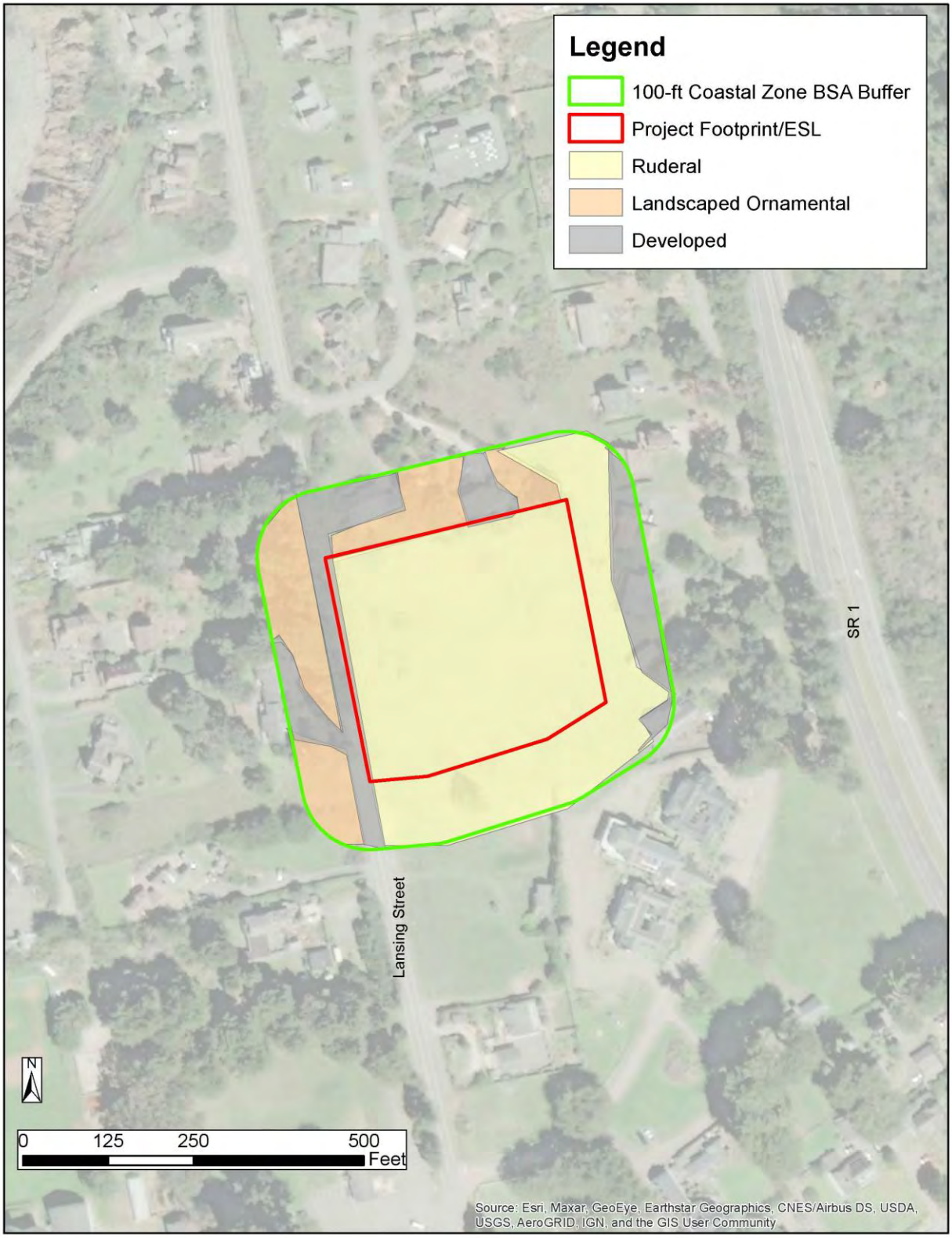


Figure 4. Vegetative Types within the ESL and BSA of the Proposed Off-site Staging Area

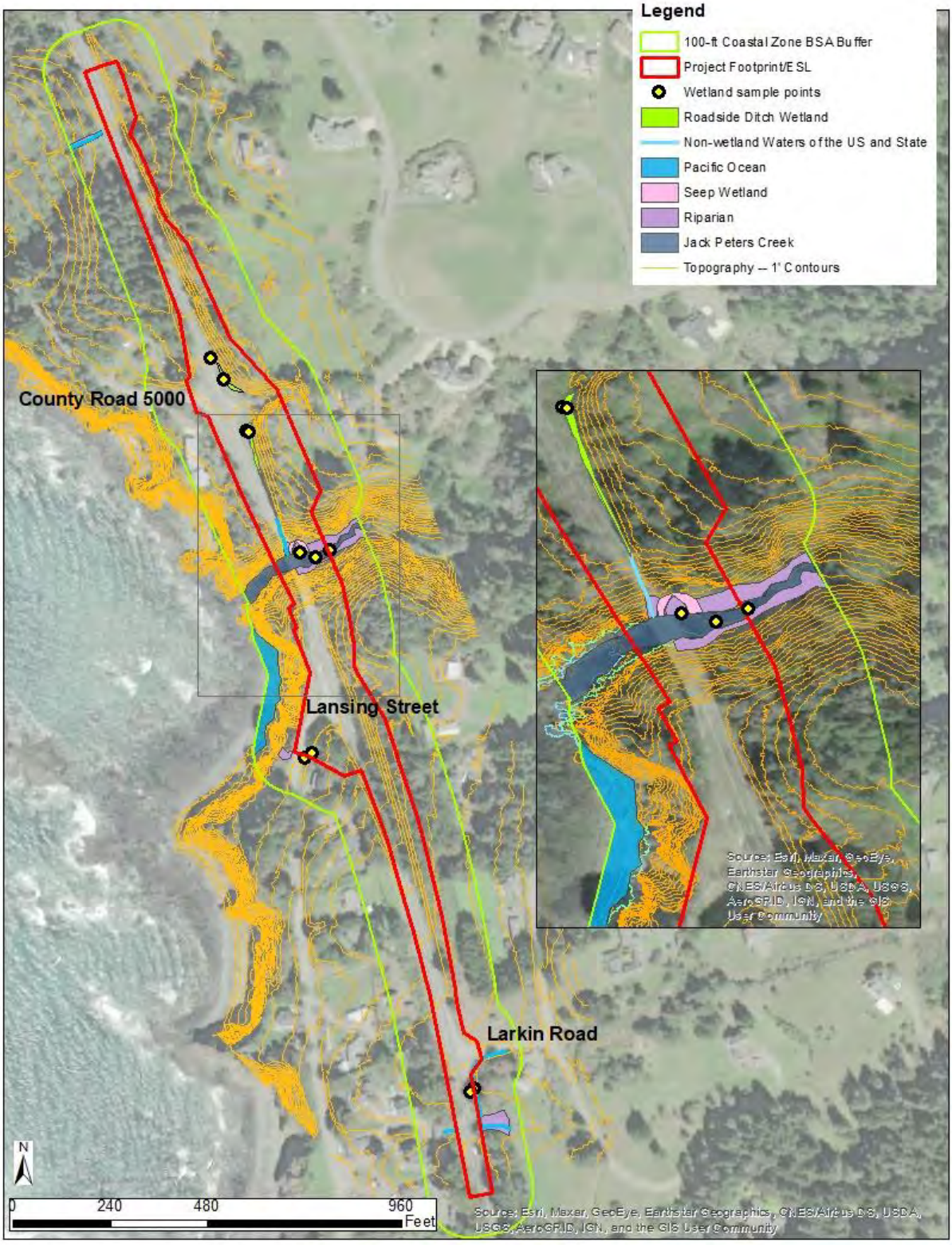


Figure 5. Potentially Jurisdictional Waters of the U.S. and State within the ESL and BSA

Field and record reviews conducted for the project have been used for the purposes of determining ESHAs. The ESHA study area includes a 100-foot buffer. Table 2 includes information on field visits, which began in 2013 and were completed in 2021

Table 2. Date(s) of Survey, Personnel and Purpose of Survey

Date(s)	Personnel	Purpose of Survey
August 6, 2013	Sean Marquis, Caltrans Biologist; Caltrans Project Development Team (PDT)	Initial field review.
April 27, 2014	S. Marquis and Jenn Osmondson, Caltrans Biologists	Butterfly habitat assessment and *Viola adunca* / *Hosackia gracilis* survey; botanical survey.
June 14, 2014	S. Marquis and J. Osmondson, Caltrans Biologists	Botanical survey.
September 10, 2014	S. Marquis and Maureen Doyle, Caltrans Biologists	Botanical survey.
June 16-17, 2015	S. Marquis and J. Osmondson, Caltrans Biologists	Wetland and waters delineation.
June 24-25, 2015	S. Marquis and Lori McIntosh, Caltrans Biologists	Wetland and waters delineation.
November 2, 2016	L. McIntosh, Caltrans Biologist; Christy Wagner, Caltrans Revegetation Specialist	Field review to develop revegetation strategy.
September 11-12, 2017	Grant Thornton, Alexandra Laughtin, and L. McIntosh, Caltrans Biologists	Revalidation and review of wetland and ESHA boundaries
May 1, 2019	Tracy Walker, Dawn Graydon, and Jeremy Pohlman, Caltrans Biologists	Butterfly habitat assessment and *Viola adunca* / *Hosackia gracilis* survey; botanical survey.
June 25, 2019	T. Walker, Caltrans Biologist; C. Wagner, Revegetation Specialist	Wetland and waters delineation.
June 26, 2019	T. Walker, Annie Allen, and Daniel Palmer, Caltrans Biologists; C. Wagner, Revegetation Specialist	Wetland and waters delineation; special status amphibian and mammal habitat assessment.
July 1-2, 2019	T. Walker and J. Pohlman, Caltrans Biologists	Vegetation and ESHA mapping; botanical survey.
July 26, 2019	Reed Crane and J. Pohlman, Caltrans Biologists	Grand Fir Forest and Bishop Pine Forest tree inventory.

Date(s)	Personnel	Purpose of Survey
July 31, 2019	Reed Crane and J. Pohlman, Caltrans Biologists	Grand Fir Forest and Bishop Pine Forest tree inventory.
May 6, 2020	T. Walker and J. Pohlman, Caltrans Biologists	Butterfly habitat assessment and host plant survey; botanical survey.
July 8, 2020	T. Walker, R. Crane, and J. Pohlman, Caltrans Biologists; Phlora Barbash, Caltrans Landscape Architect	Grand Fir Forest and Bishop Pine Forest tree inventory, wetlands and waters delineation, botanical survey.
May 4-5, 2021	T. Walker and A. Allen, Caltrans Biologists; C. Wagner, Loriel Caverly, and Jacob Hilliard, Caltrans Revegetation Specialists	Grand Fir Forest and Bishop Pine Forest tree inventory, wetlands and waters delineation, butterfly habitat assessment and host plant survey, and botanical surveys in expanded ESL and additional staging areas.
May 5 and 20, 2021	Wendell Bedell, Caltrans Environmental Construction Liaison	Focused Sonoma tree vole survey.
June 28-29, 2021	C. Wagner and Loriel Caverly, Caltrans Revegetation Specialists	Botanical surveys.
July 20, 2021	T. Walker Caltrans Biologist and Jeremy Miller-Schulze, Caltrans Hydraulics Engineer	Grand Fir Forest and Bishop Pine Forest tree inventory and waters assessment.
October 10, 2021	T. Walker, Caltrans Biologist; C. Wagner, Revegetation Specialist	Proposed upland forest revegetation area assessment and reconnaissance survey of newly additional areas.

Chapter 3. Results: Biological Resources and Discussion of Impacts

3.1 Potential Environmentally Sensitive Habitat Areas

The Environmentally Sensitive Habitat Areas (ESHAs) delineated in the Environmental Study Limits (ESL) include the components of the Jack Peters Creek drainage within the Biological Study Area (BSA), associated riparian habitat along its banks, waters and wetlands above the top of bank, ocean habitat southwest of the project site, and upland grand fir and bishop pine forest habitats (Figure 6).

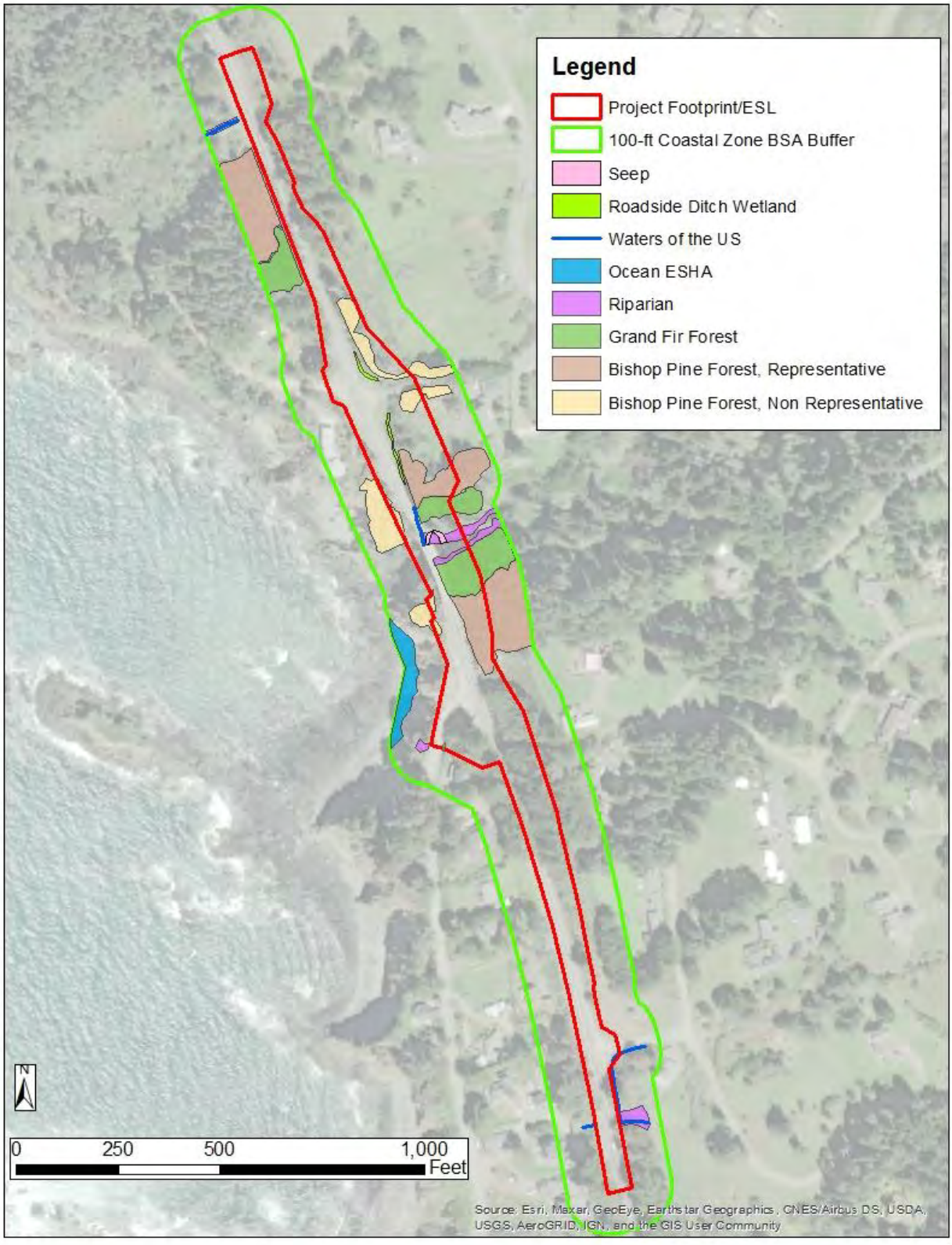


Figure 6. Potential ESHAs within the ESL and BSA

The components of the drainage include a seep wetland jurisdictional Water of the U.S. and State and two non-wetland Waters of the U.S. and State—Jack Peters Creek, which is represented as a stream ESHA, and an intermittent unnamed drainage on the north bank of the creek.

The proposed project would result in temporary, temporal, and permanent impacts to potential ESHAS at Jack Peters Creek Bridge as summarized in Section 3.1.5 and Table 3. Consistent with other permitting agencies, Caltrans defines these impact types in relation to the restoration of ecological function within a habitat:

- Temporary impacts are those in which restoration begins within one year of the first date of impact.
- Temporal impacts occur when restoration begins more than one year after the first date of impact and there is a temporal loss of function.
- Permanent impacts are impacts that are not restorable.

Potential ESHAs that occur within the ESL and larger BSA, their acreages, and a description of activities and related project impacts are summarized below in Table 3 and described further in the paragraphs below. For sites where unavoidable impacts to ESHAs are anticipated, or where the project design has been altered to avoid impacts to ESHAs, a reduced buffer analysis has been included, as well as incorporation of avoidance or minimization efforts to reduce project impacts. Standard and specific measures are outlined in the project description in Section 1.4 to reduce or avoid impacts to these areas.

Table 3. Potential Environmentally Sensitive Habitat Areas within the ESL and BSA

ESHA Name	ESHA Size within BSA (acres)	Total ESHA Impacts within ESL (acres)	ESHA Location and Potential Impacts
Seep Wetland (Seep)	0.018	0.018	3-parameter seep wetland on the north bank of Jack Peters Creek immediately upstream of the bridge. Work would occur within this ESHA. • Approximately 0.015 acre of temporal impacts due to grading the bank to allow construction access for installation of the trestle and falsework. • Permanent impacts to approximately 0.003 acre are anticipated due to widening the pier.
Palustrine Wetland (PW)-1	0.015	0.015	A 3-parameter roadside ditch wetland located on the north side of the private driveway just northeast of the bridge. Work would occur within this ESHA. • Approximately 0.015 acre of temporal impacts are anticipated due to widening of SR 1 and the road shoulders (cut/fill work).
PW-2	0.029	0.029	A 3-parameter roadside ditch wetland located on the south side of the private driveway, just northeast of the bridge paralleling SR 1 to the north abutment. Work would occur within this ESHA. • Approximately 0.029 acre of temporal impacts are anticipated due to widening of SR 1 and the road shoulders (cut/fill work).
PW-3	0.001	0.001	A 3-parameter roadside ditch wetland on the east side of Lansing Street, immediately south of the intersection with SR 1. Work would occur within this ESHA. • Approximately 0.001 acre of temporal impacts are anticipated due to excavation and fill to construct a stormwater BMP treatment bioswale.
Jack Peters Creek (JPC)-1	0.261	0	Bridge work would occur within this ESHA, but above the ESHA's ordinary high water mark (OHWM). Therefore, no impacts to JPC-1 are anticipated with standard BMPs to prevent sediment and pollutants from entering the water.
Other Water (OW)-1	0.011	0	Adjacent to work at intersection of Larkin Road and SR 1. Road and shoulder improvement work on SR 1 would occur in the buffer within 5 feet of this ESHA. • No impacts are anticipated.

ESHA Name	ESHA Size within BSA (acres)	Total ESHA Impacts within ESL (acres)	ESHA Location and Potential Impacts
OW-2	0.005	0	Adjacent to work along east side of SR 1 south of Larkin Road. Road and shoulder improvement work on SR 1 would occur in the buffer within 5 feet of this ESHA. • No impacts are anticipated.
OW-3	0.006	0	Adjacent to work along west side of SR 1 south of Larkin Road. Road and shoulder improvement work on SR 1 would occur in the buffer within 5 feet of this ESHA. • No impacts are anticipated.
OW-4	0.004	0.004	Intermittent drainage underneath Jack Peters Creek Bridge on the north bank of Jack Peters Creek. Work would occur within this ESHA. • Approximately 0.003 acre of temporal impacts due to grading the bank to allow construction access for installation of the temporary trestle and falsework. • Permanent impacts to 0.001 acre are anticipated due to widening the pier and abutment.
OW-5	0.004	0	Adjacent to work along west side of SR 1 north of County Road 500D. Road and shoulder improvement work on SR 1 would occur in the buffer within 5 feet of this ESHA. • No impacts are anticipated.
Coastal Riparian (CR)-1	0.020	0	Adjacent to work along west side of SR 1 north of County Road 500D. Road and shoulder improvement work on SR 1 would occur in the buffer within 5 feet of this ESHA. • No impacts are anticipated.
CR-2	0.059	0.048	North bank of Jack Peters Creek upstream of the bridge. Work would occur within this ESHA. • Approximately 0.045 acre of temporal impacts are anticipated due to grading the bank (vegetation removal) to allow construction access for installation of the temporary trestle and falsework. • Permanent impacts to 0.003 acre are anticipated due to widening of the pier.

ESHA Name	ESHA Size within BSA (acres)	Total ESHA Impacts within ESL (acres)	ESHA Location and Potential Impacts
CR-3	0.072	0.024	South bank of Jack Peters Creek upstream of the bridge. Work would occur within this ESHA. • Approximately 0.022 acre of temporal impacts are anticipated due to grading the bank (vegetation removal) to allow construction access for installation of the temporary trestle and falsework. • Permanent impacts to 0.002 acre are anticipated due to widening of the pier.
CR-4	0.015	0	Adjacent to work along west side of Lansing Street south of intersection with SR 1. Road improvement work on SR 1 would occur in the buffer within 10 feet of this ESHA. • No impacts are anticipated.
CR-5	0.069	0	Adjacent to work along east side of SR 1 south of Larkin Road. Road and shoulder improvement work on SR 1 would occur in the buffer within 5 feet of this ESHA. • No impacts are anticipated.
Ocean	0.530	0	Approximately 50 feet west of SR 1 at base of cliff. Drainage improvement at the culvert at PM 51.50, as well as road improvement and equipment staging, would occur on SR 1 in the buffer, within 50 feet of this ESHA. • No impacts are anticipated.
Grand Fir Forest (GF)-1	0.194	0.095	Upper slope of north bank of Jack Peters Creek upstream of the bridge. Work would occur within this ESHA. • Approximately 0.060 acre of temporal impacts due to grading the bank (vegetation removal) to allow construction access for installation of the temporary trestle and falsework. • Approximately 0.035 acre would be considered permanent impacts because the widened bridge could preclude growth of vegetation over 5 feet in height; a marginal amount would also be associated with installation of rock slope protection (RSP) and concrete fill to widen the abutment on the north bank approximately 17 feet to the east.

ESHA Name	ESHA Size within BSA (acres)	Total ESHA Impacts within ESL (acres)	ESHA Location and Potential Impacts
GF-2	0.413	0.203	Upper slope of south bank of Jack Peters Creek upstream of the bridge. Work would occur within this ESHA. • Approximately 0.182 acre of temporal impacts are anticipated due to grading the bank (vegetation removal) to allow construction access for installation of the temporary trestle and falsework. • Approximately 0.021 acre would be considered permanent impacts because the widened bridge could preclude growth of vegetation over 5 feet in height; a marginal amount would also be associated with installation of rock slope protection (RSP) and concrete fill to widen the abutment on the south bank approximately 17 feet to the east.
GF-3	0.229	0	Adjacent to work along west side of SR 1 north of County Road 500D. Road and shoulder improvement work on SR 1 would occur in the buffer within 15 feet of this ESHA. • No impacts are anticipated.
Bishop Pine Forest (BP)-1	0.223	0.156	Located on the south side of the private driveway, which is northeast of the bridge, paralleling SR 1 to the north abutment. Work would occur within this ESHA. • Approximately 0.156 acre of temporal impacts are anticipated due to widening SR 1 and the road shoulders (cut/fill work).
BP-2	0.092	0.053	Located on the south side of the private driveway, which is northeast of the bridge, paralleling SR 1 to the north abutment. Work would occur within this ESHA. • Approximately 0.053 acre of temporal impacts are anticipated due to widening SR 1 and the road shoulders (cut/fill work).
BP-3	0.367	0.226	Upper slope of north bank of Jack Peters Creek upstream of the bridge. Work would occur within this ESHA. • Approximately 0.152 acre of temporal impacts are anticipated due to vegetation removal and hillside grading to conform the highway alignment with the widened bridge.

ESHA Name	ESHA Size within BSA (acres)	Total ESHA Impacts within ESL (acres)	ESHA Location and Potential Impacts
			• A smaller amount of permanent impacts to bishop pine forest habitat (0.074 acre) in this ESHA would be a result of creating a ditch wetland for on-site wetland mitigation.
BP-4	0.709	0.289	Upper slope of south bank of Jack Peters Creek upstream of the bridge. Work would occur within this ESHA. • Approximately 0.289 acre of temporal impacts are anticipated due to grading the bank (vegetation removal) to allow construction access for installation of the temporary trestle and falsework.
BP-5	0.089	0.029	Located on the south side of Jack Peters Creek west of SR 1. Work would occur within this ESHA. • Approximately 0.027 acre of temporal impacts are anticipated due to vegetation removal and hillside grading to allow construction access. • A smaller amount of permanent impacts to bishop pine forest habitat (0.002 acre) are anticipated due to installation of a wing wall on the south abutment.
BP-6	0.263	0.044	Located on the north side of Jack Peters Creek west of SR 1 and south of County Road 500D. Work would occur within this ESHA. • Approximately 0.042 acre of temporal impacts are anticipated due to vegetation removal and hillside grading to allow construction access. • A smaller amount of permanent impacts to bishop pine forest habitat (0.002 acre) are anticipated due to installation of a wing wall on the north abutment.
BP-7	0.515	0	Adjacent to work along west side of SR 1 north of County Road 500D. Road and shoulder improvement work on SR 1 would occur in the buffer within 15 feet of this ESHA. • No impacts are anticipated.

3.1.1 Potentially Jurisdictional Wetland Waters of the U.S. and State ESHAs

Within the BSA, one seep wetland and three roadside ditch palustrine wetlands were mapped as 3-parameter wetlands considered Waters of the U.S. and State under jurisdiction of the United States Army Corps of Engineers (USACE) and North Coast Regional Water Quality Control Board (NCRWQCB) (Table 2 and Figure 8). The BSA and ESL together encompass approximately 0.018 acre of seep wetland and 0.045 acre of palustrine wetlands (PW-1, PW-2, and PW-3) for a total of 0.063 acre of potentially jurisdictional wetland Waters of the U.S. and State within the BSA and ESL. These areas would also be considered coastal jurisdictional features, regulated by the CCC.

It would not be feasible to avoid impacts to wetland ESHAs within the ESL. The roadside ditch palustrine wetlands (PW-1, -2, and -3) are adjacent to the existing roadway that must be widened to accommodate the widened bridge. The seep wetland (Seep ESHA) is within a location required to construct the temporary trestle and falsework to access the base of the piers to allow widening. Potential impacts on wetland ESHAs (Seep ESHA, ESHAs PW-1, PW-2, and PW-3) within the ESL are identified in Table 3 (Section 3.1) and consist of temporal impacts associated with grading and fill of the ditch wetlands and grading of the seep wetland on the north bank, totaling approximately 0.063 acre.

Removal of the approximately 0.063 acre of 3-parameter palustrine wetland ESHA habitat would be recreated within the ROW to the east of ESHA PW-2 at a 1:1 ratio for the permanent loss of habitat and additional needs for mitigation would be accounted for at an approved off-site location. Accordingly, no substantial disruption of habitat value is expected.

ESHAs consisting of potentially jurisdictional wetland Waters of the U.S. and State observed within the BSA and ESL are presented in Table 3 above and are described further in the paragraphs below. Locations and buffers of these ESHAs are provided below in Figure 7.

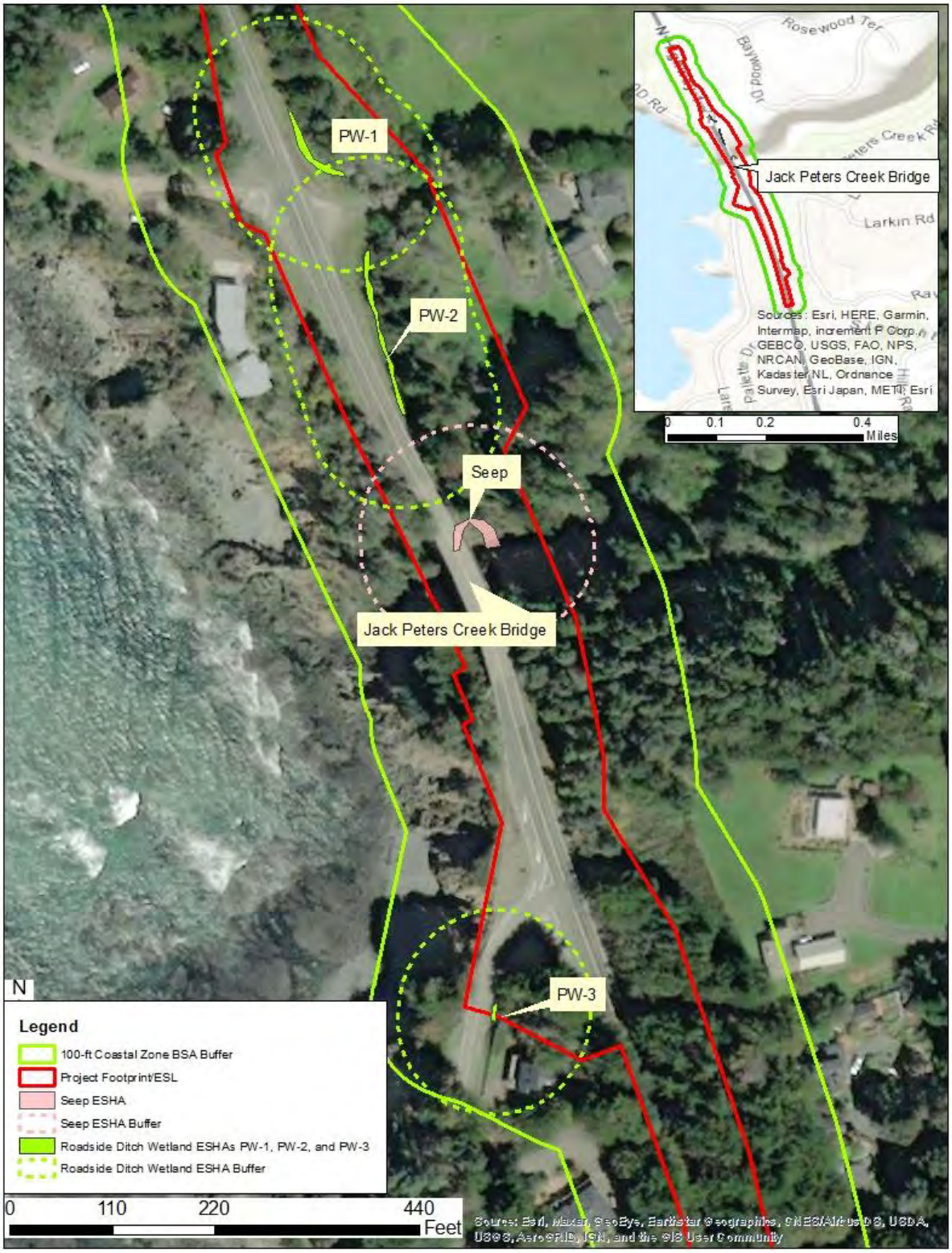


Figure 7. Palustrine Wetland ESHAs within the ESL and BSA

Seep ESHA

Description – The Seep ESHA is a 3-parameter freshwater seep wetland on the north bank of Jack Peters Creek immediately upstream of the bridge. This seep ESHA is characterized by permanently saturated soils with subsurface seepage that collects near the surface. Coastal scrub vegetation, such as sword fern, poison oak, and thimbleberry, grow in the area with water flow seeping out of the bedrock. The habitat in this seep ESHA is dominated by herbaceous vegetation such as common velvet grass (*Holcus lanatus*), seep monkey flower (*Erythranthe guttata*), and giant horsetail (*Equisetum telmateia* var. *braunii*).

Buffer – The LCP (Section 20.496.020) requires a 100-foot buffer around ESHAs, including wetlands, unless it can be determined there is no adverse impact on the ESHA.

Impacts – Work would occur within this ESHA. Potential impacts to Seep ESHA within the ESL are anticipated to be mostly temporal encompassing approximately 0.015 acre, due to vegetation removal and grading. The remaining portion of Seep ESHA would also incur a minor amount of permanent impacts to vegetation, approximately 0.003 acre, due to the concrete pour to widen the pier on the north bank.

Avoidance – A buffer is not feasible around this ESHA because it is within the construction footprint required for the project. Although project activities would occur within Seep ESHA, these activities would not result in adverse impacts because:

(1) Work within 100 feet of Seep ESHA would occur for a limited duration.

(2) Standard measures and BMPs (Section 1.4) would be implemented as part of the project to minimize temporary impacts to Seep ESHA, such as using THVF and/or flagging, where appropriate, to protect the portion of the ESHA outside of the construction footprint. In all temporarily disturbed areas, Caltrans would also restore and replant native herbaceous vegetation upon completion of construction. Caltrans would offset temporal losses to Seep ESHA by preparing a Revegetation Plan that would incorporate planting of suitable native species at an appropriate replanting ratio.

ESHAs PW-1, PW-2, and PW-3

Description – PW-1, PW-2, and PW-3 are 3-parameter, palustrine wetland ESHAs adjacent to the east side of the SR 1 highway and connecting roads. These are roadside ditches that were originally created by Caltrans to convey stormwater runoff. Due to sedimentation, the flow eventually slowed to the point of retaining saturated soil intermittently to year round. Common species in these wetland ESHAs include creeping bentgrass (*Agrostis stolonifera*), watercress (*Nasturtium officinale*), common velvet grass, and small-fruited bulrush (*Scirpus microcarpus*).

Buffer – The LCP (Section 20.496.020) requires a 100-foot buffer around ESHAs, including wetlands, unless it can be determined there is no adverse impact on the ESHA.

Impacts – Work would occur within these wetland ESHAs. Potential impacts to ESHAs PW-1, PW-2, and PW-3 within the ESL are expected to be temporal, encompassing approximately 0.045 acre, resulting from vegetation removal and fill.

Avoidance – A 100-foot buffer is not feasible around these ESHAs because they are within the construction footprint required for the project. Although project activities would occur within ESHAs PW-1, PW-2, and PW-3, these activities would not result in adverse impacts because:

(1) Work within 100 feet of ESHAs PW-1, PW-2, and PW-3 would occur for a limited duration.

(2) Caltrans would also create a single, larger ditch wetland on-site immediately east of the existing PW-2 ESHA. This wetland would have topography of the existing ditches and would be replanted with native herbaceous vegetation upon completion of construction. Caltrans would offset remaining temporal losses to ESHAs PW-1, PW-2, and PW-3 through mitigation proposed at an off-site mitigation site.

3.1.2 Potentially Jurisdictional Non-Wetland Waters of the U.S. and State ESHAs

One perennial stream (JPC-1) and five intermittent streams or drainages (OW-1 through OW-5) were mapped within the BSA as non-wetland Waters of the U.S. under jurisdiction of the USACE and Waters of the State under jurisdiction of the NCRWQCB (Table 3 and Figure 6). Approximately 0.291 acre non-wetland waters are present within the BSA and approximately 0.111 acre within the ESL. These areas would also be considered coastal jurisdictional features, regulated by the CCC.

It would not be feasible to avoid impacts to intermittent drainage ESHA OW-4 within the ESL because this drainage is within some locations required to construct the temporary trestle and falsework to access the base of the piers to allow widening. Potential impacts on stream ESHA OW-4 within the ESL is identified in Table 3 (Section 3.1). Due to widening of the pier and abutment 17 feet to the east, which would involve grading and fill on the north bank, there would be a small amount of temporal and permanent impacts to the ESHA OW-4 drainage (0.003 acre temporary and 0.001 acre permanent, which equals 0.004 acre total).

Standard measures and BMPs would avoid and minimize impacts on the water quality of Jack Peters Creek riverine habitat within the BSA (Section 1.4), and removal of approximately 0.004 acre of ESHA OW-4 would be recreated within the ROW to the east of the feature at a ratio of 1:1 on site to compensate for the temporal and permanent loss of habitat and the remaining mitigation needs would be accounted for at an approved off-stie location. As impacts would be minor and mostly temporal, no substantial disruption of habitat value is expected.

ESHAs consisting of non-wetland Waters of the U.S. and State observed within the BSA are presented in Table 3 above and are described further in the paragraphs below. Locations and buffers of these ESHAs are provided below in Figures 8 and 9.

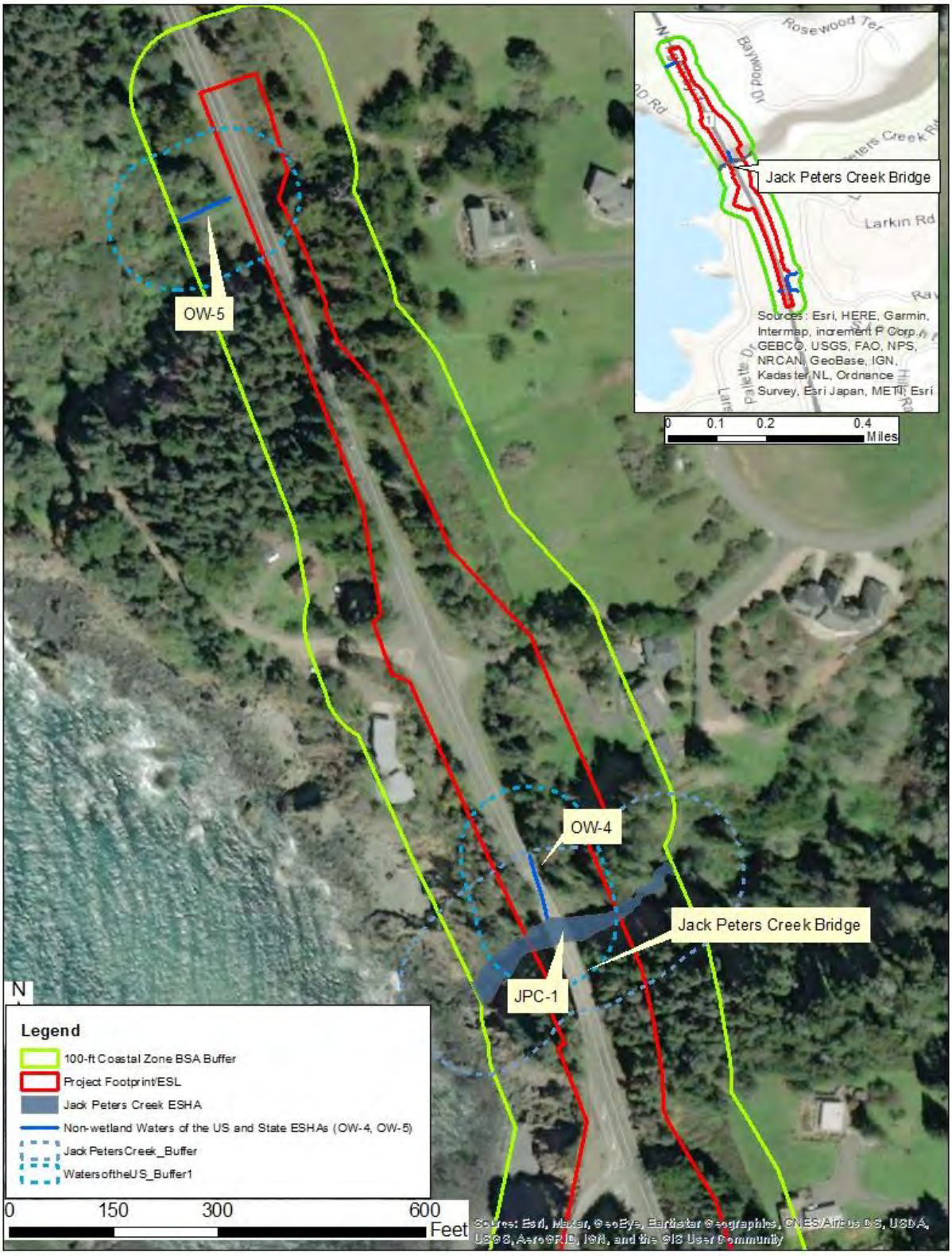


Figure 8. Non-wetland Waters of the U.S. and State ESHAs within the BSA. North of Lansing Street.

Figure 9. Non-wetland Waters of the U.S. and State ESHAs within the BSA. South of Lansing Street.

ESHA JPC-1

Description – ESHA JPC-1 (Jack Peters Creek) is a stream ESHA and considered a jurisdictional non-wetland Water of the U.S. and State. Jack Peters Creek is perennial, flows in a westerly direction and terminates directly into the Pacific Ocean less than 200 feet west of the Jack Peters Creek Bridge. According to Caltrans hydrological studies (Caltrans 2019), the rocky intertidal estuary is subject to tidal influence 200 feet upstream from the ocean shoreline. The width of the creek within the BSA varies between 15 and 42 feet. This drainage has a deeply incised channel and patchy vegetation was observed growing from cracks within the bedrock. It contains habitat for sensitive species, including the federally listed steelhead–Northern California (NC) Distinct Population Segment (DPS), Essential Fish Habitat (EFH) for groundfish and coastal pelagic species, and dispersal habitat for California Species of Special Concern such as the Northern red-legged frog (NRLF) and red-bellied newt (RBN).

Buffer – The LCP (Section 20.496.020) requires a 100-foot buffer around coastal waters and streams, unless it can be determined there is no adverse impact on the coastal water or stream.

Impacts— Because all project activities would be conducted above the OHWM, there would be no resulting temporary or permanent impacts to stream ESHA JPC-1 or its associated biological values for federally listed fish species.

Avoidance and Minimization – A 100-foot buffer is not feasible around this ESHA because Jack Peters Creek is less than 5 feet from the ESL on both the north and south bank (Figure 8); however, these smaller buffers would not result in adverse impacts to Jack Peters Creek because:

(1) Work within the buffer of ESHA JPC-1 would occur for a limited duration. All activities would be performed above the OHWM; therefore, Jack Peters Creek would be protected against any disruption of habitat values.

(2) Standard measures and BMPs (Section 1.4) would be implemented as part of the project, such as:

   a. Follow an appropriate stormwater plan to avoid impacts due to erosion and spills during construction.

   b. Install THVF and/or flagging, where appropriate, to protect the portion of the ESHA outside of the construction footprint.

ESHA OW-4

Description – ESHA OW-4 is a non-wetland Water of the U.S. and State. It is a steep, intermittent drainage with a bedrock channel that flows from the north bridge abutment directly to Jack Peters Creek. Common species on the steep banks of this jurisdictional water, depending on the slope position, include red elderberry (*Sambucus racemosa*), cow parsnip (*Heracleum maximum*), sweet vernal grass (*Anthoxanthum odoratum*), and non-native cabbage (*Brassica oleracea*).

Buffer – The LCP (LCP Section 20.496.020) requires a 100-foot buffer around coastal waters and streams, unless it can be determined there is no adverse impact on the coastal water or stream.

Impacts – Work would occur within this intermittent drainage ESHA. Due to vegetation removal and hillside grading, potential impacts to ESHA OW-4 are anticipated to be temporal, encompassing approximately 0.003 acre of a total of 0.004 acre within the ESL. There would be a permanent impact to an even smaller amount (0.001 acre of 0.004 total acre within the ESL) due to concrete fill for the widened pier and abutment on the north bank.

Avoidance – A 100-foot buffer is not feasible around this ESHA because it is within the construction footprint required for the project. Although project activities would occur within ESHA OW-4, these activities would not result in adverse impacts because:

(1) Work within 100 feet of ESHA OW-4 would occur for a limited duration.

(2) Caltrans would create an intermittent drainage on-site and east of the existing ESHA OW-4 feature. The new drainage would continue to function as a tributary of ESHA JPC-1 by means of connecting flow from the created wetland mentioned above (see ESHAs PW-1 to PW-3) to the existing seep wetland, which flows directly to ESHA JPC-1. This intermittent drainage would have similar dimensions as the existing ESHA OW-4 and its banks would be replanted with native vegetation upon completion of construction.

ESHAs OW-1, OW-2, and OW-3

Description – ESHAs OW-1, OW-2, and OW-3 are stream ESHAs considered jurisdictional non-wetland Waters of the U.S. and State. They are relatively flat and narrow drainages occurring southeast of the intersection of SR 1 and Larkin Road. ESHA OW-1 is a roadside ditch that conveys water flow from Larkin Road to the southwest along SR 1, then flows into ESHA OW-2, which then flows west through a concrete culvert that crosses under the highway. ESHA OW-1 flows into ESHA OW-2, which is a creek that originates to the east of the BSA. ESHA OW-2 crosses SR 1 through a concrete culvert. This feature retains water during the drier months, and at the time of surveying, contained ponded water. Both ESHA OW-1 and OW-2 connect at the culvert inlet where the water flows under SR 1 and across to the west side of the highway to the outlet flow beginning at ESHA OW-3. This intermittent drainage continues to convey water flow from east to west towards the western BSA boundary. Common species on the banks of these drainages include arroyo willow (*Salix lasiolepis*), giant horsetail, Himalayan blackberry, and cape ivy (*Delairea odorata*). They contain dispersal habitat for sensitive species such as NRLF.

Buffer – The LCP (LCP Section 20.496.020) requires a 100-foot buffer around coastal waters and streams, unless it can be determined there is no adverse impact on the coastal water or stream.

Impacts – Because all these features are outside the ESL, there would be no resulting temporary or permanent impacts to ESHAs OW-1, OW-2, or OW-3 or its associated biological values for protected amphibian species.

Avoidance – A 100-foot buffer is not feasible around these ESHAs because they are within 5 feet of the construction footprint required for the project. However, these smaller buffers would not result in adverse impacts to OW-1, OW-2, and OW-3 because:

1) Standard measures and BMPs (Section 1.4) (including use of THVF and/or flagging where appropriate to exclude the ESHAs) would be implemented to prevent temporary impacts to OW-1, OW-2, and OW-3, thus avoiding impacts.

ESHA OW-5

Description – ESHA OW-5 is a non-wetland Water of the U.S. and State. It is a narrow, deep, intermittent drainage that flows west from a culvert opening west of SR 1 at approximately PM 52.15. The vegetation on its banks comprises red alder, bracken fern, sword fern, and California blackberry. It contains dispersal habitat for sensitive species such as Northern red-legged frog.

Buffer – The LCP (LCP Section 20.496.020) requires a 100-foot buffer around coastal waters and streams, unless it can be determined there is no adverse impact on the coastal water or stream.

Impacts – Because this feature is located outside the ESL, there would be no resulting temporary or permanent impacts to ESHA OW-5 or its associated biological values for protected amphibian species.

Avoidance – A 100-foot buffer is not feasible around this ESHA because it is within 5 feet of the construction footprint required for the project. However, these smaller buffers would not result in adverse impacts to ESHA OW-5 because:

1) Standard measures and BMPs (Section 1.4—including use of THVF and/or flagging where appropriate to exclude the ESHA) would be implemented to prevent temporary impacts to OW-5, thus avoiding impacts.

3.1.3 Coastal Riparian ESHAs

Five Coastal Riparian (CR) ESHAs were mapped within the BSA, with two occurring within the ESL (CR-2 and CR-3). In total, approximately 0.235 acre of CR habitat are within the BSA and approximately 0.072 acre is within the ESL. These areas may also be considered coastal jurisdictional features regulated by the CCC.

Impacts to riparian ESHAs within the ESL would be unavoidable as access needed to get to the base of the piers (required for pier widening) would be through the surrounding riparian ESHA locations. Potential impacts on riparian ESHAs CR-2 and CR-3 within the ESL are identified in Table 3 (Section 3.1) and consist mostly of temporal impacts associated with vegetation removal, grading for equipment access, and construction of the temporary trestle and falsework which total 0.067 acre of the total 0.072 acre present within the ESL. Vegetation removal would be limited to the extent necessary to achieve access and conduct bridge widening activities. Due to widening of the pier and abutment 17 feet to the east, which would involve grading and fill on the creek banks, there would be a small amount of permanent impacts to ESHAs CR-2 and CR-3 (0.005 acre of the total 0.072 acre present within the ESL).

By design, the proposed project minimizes disturbance by using existing access to the extent feasible. Existing disturbed areas with gravel or paved cover would be used for a portion of the staging areas, and the existing highway would be utilized for some of the bridge work. Standard measures and BMPs (Section 1.4) have been outlined to avoid and minimize impacts on riparian habitat within the BSA, and temporal removal of approximately 0.067 acre of red alder riparian ESHA within the ESL would be restored with replanting efforts on the southern and northern banks of the creek at appropriate ratios for the temporal loss of habitat. Accordingly, no substantial disruption of habitat value is expected.

Coastal riparian ESHAs observed within the BSA are presented in Table 3 above and are described further in the paragraphs below. Locations and buffers of these ESHAs are provided below in Figures 10 through 12.

Figure 10. Coastal Riparian ESHA CR-1 and Buffer within the BSA.

Figure 11. Coastal Riparian ESHAs and Buffers within the ESL and BSA along Jack Peters Creek.

Figure 12. Coastal Riparian ESHAs and Buffers within the BSA. South of Lansing Street.

ESHA CR-1

Description – ESHA CR-1 is a coastal riparian (CR) ESHA adjacent to the ESL, west of the northwest corner of the ESL. The habitat in this ESHA is dominated by red alder (*Alnus rubra*) forest.

Buffer – The LCP (LCP Section 20.496.020) requires a 100-foot buffer around ESHAs, including riparian habitat, unless it can be determined there is no adverse impact on the ESHA.

Impacts – Because any ground disturbance for roadway improvements on SR 1 would be completely within the highway or east of the highway at this location, there would be no resulting temporary or permanent impacts to ESHA CR-1

Avoidance – A 100-foot buffer is not feasible around this ESHA because ESHA CR-1 is within 100 feet of the construction footprint required for the project. ESHA CR-1 is within 5 feet of the ESL; however, these smaller buffers would not result in adverse impacts to this ESHA because:

(1) Work within 100 feet of ESHA CR-1 would occur for a limited duration and all activities would be conducted on previously disturbed areas.

(2) Standard measures and BMPs (Section 1.4—including use of THVF and/or flagging where appropriate to exclude the ESHA) would be implemented to prevent temporary impacts to ESHA CR-1, thus avoiding impacts.

ESHA CR-2

Description–ESHA CR-2 is a coastal riparian ESHA situated adjacent to the east of Jack Peters Creek Bridge on the north bank of Jack Peters Creek. The habitat in this ESHA is dominated by tall forbs such as thimbleberry, salmonberry, and red elderberry.

Buffer–The LCP (Section 20.496.020) requires a 100-foot buffer around ESHAs, including riparian habitat, unless it can be determined there is no adverse impact on the ESHA.

Impacts–Work would occur within this coastal riparian ESHA. Potential impacts to ESHA CR-2 are expected to be mostly temporal, encompassing approximately 0.045 acre of 0.048 total acre within the ESL, due to vegetation removal and hillside grading. Due to widening of the pier and abutment 17 feet to the east, which would involve grading and fill on the creek banks, as well as planting limitations where the widened bridge would restrict the full

tree height, there would be a marginal amount of permanent impacts to ESHA CR-2 (0.003 acre of 0.048 total acre within the ESL).

Avoidance and Minimization–A buffer is not feasible around this ESHA because it is within the construction footprint required for the project. Although project activities would occur within ESHA CR-2, these activities would not result in adverse impacts because:

(1) Work within ESHA CR-2 would occur for a limited duration.

(2) Standard measures and Best Management Practices (Section 1.4) would be implemented to minimize temporal impacts to ESHA CR-2. In all temporarily disturbed areas, Caltrans would also restore and replant native riparian vegetation upon completion of construction.

ESHA CR-3

Description – ESHA CR-3 is a coastal riparian ESHA situated adjacent to the east of Jack Peters Creek Bridge on the south bank of Jack Peters Creek. The habitat in this ESHA is dominated by red alder forest.

Buffer – The LCP (Section 20.496.020) requires a 100-foot buffer around ESHAs, including riparian habitat, unless it can be determined there is no adverse impact on ESHA.

Impacts – Work would occur within this coastal riparian ESHA. Potential impacts to ESHA CR-3 within the ESL are expected to be mainly temporal, encompassing approximately 0.022 acre of 0.024 total acre present within the ESL, due to vegetation removal and hillside grading. To widen the pier and abutment 17 feet to the east, which would involve grading and fill on the creek banks, there would be a marginal amount of permanent impacts to ESHA CR-3 (0.002 acre of 0.024 total acre present within the ESL).

Avoidance and Minimization – A buffer is not feasible around this ESHA because it is within the construction footprint required for the project. Although project activities would occur within ESHA CR-3, these activities would not result in adverse impacts because:

(1) Work within ESHA CR-3 would occur for a limited duration.

(2) Standard measures and Best Management Practices (Section 1.4—including use of THVF and/or flagging where appropriate to exclude the ESHA) would be implemented to minimize temporal impacts to ESHA CR-3. In all temporarily disturbed areas, Caltrans would also restore and replant native riparian vegetation upon completion of construction.

ESHA CR-4

Description – ESHA CR-4 is a coastal riparian ESHA adjacent to SR 1 and southwest of the intersection of Lansing Street and SR 1, directly across the road from ESHA PW-3. This ESHA is not within the ESL. The habitat in this ESHA is dominated by arroyo willow.

Buffer – The LCP (Section 20.496.020) requires a 100-foot buffer around ESHAs, including riparian habitat, unless it can be determined there is no adverse impact on the ESHA.

Impacts – Because all road and shoulder improvement on SR 1 would be conducted within existing disturbed areas, there would be no resulting temporary or permanent impacts to ESHA CR-4.

Avoidance – A 100-foot buffer is not feasible around this ESHA because CR-4 is within 100 feet of the construction footprint required for the project. ESHA CR-4 is less than 10 feet from the ESL; however, this smaller buffer would not result in adverse impacts to this ESHA because:

(1) Work within 100 feet of ESHA CR-4 would occur for a limited duration and all activities would be conducted on previously disturbed areas.

(2) Standard measures and Best Management Practices (Section 1.4—including use of THVF and/or flagging where appropriate to exclude the ESHA) would be implemented to prevent temporary impacts to ESHA CR-4, thus avoiding impacts.

ESHA CR-5

Description – ESHA CR-5 is a coastal riparian ESHA adjacent to SR 1 and southeast of the intersection of Larkin Road and SR 1. This ESHA is not within the ESL. The habitat in this ESHA is dominated by Arroyo willow.

Buffer – The LCP (Section 20.496.020) requires a 100-foot buffer around ESHAs, including riparian habitat, unless it can be determined there is no adverse impact on the ESHA.

Impacts – Because all road and shoulder improvement on SR 1 would be conducted within existing disturbed areas, there would be no resulting temporary or permanent impacts to ESHA CR-5.

Avoidance – A 100-foot buffer is not feasible around this ESHA because CR-5 is within 100 feet of the construction footprint required for the project. ESHA CR-5 is within 5 feet of the ESL; however, this smaller buffer would not result in adverse impacts to this ESHA because:

(1) Work within 100 feet of ESHA CR-5 would occur for a limited duration and all activities would be conducted on previously disturbed areas.

(2) Standard measures and Best Management Practices (Section 1.4— including use of THVF and/or flagging where appropriate to exclude the ESHA) would be implemented to prevent temporary impacts to ESHA CR-5, thus avoiding impacts.

3.1.4 Other Potential Environmentally Sensitive Habitat Areas

The Mendocino County LCP (Section 20.496.010 "Purpose") also mentions specific types of habitats as meeting the definition of an ESHA. These habitats include anadromous fish streams, sand dunes, rookeries and marine mammal haul-out areas, areas of pygmy vegetation which contain species of rare or endangered plants, and habitats of rare and endangered plants and animals.

Ocean ESHA

Description – Ocean ESHA is marine habitat situated approximately 50 feet west of the gravel pullout on southbound SR 1 at the intersection with Lansing Street. The acreage and impacts of Ocean ESHA observed within the BSA are presented in Table 3. The location and buffer of this ESHA is provided below in Figure 13.

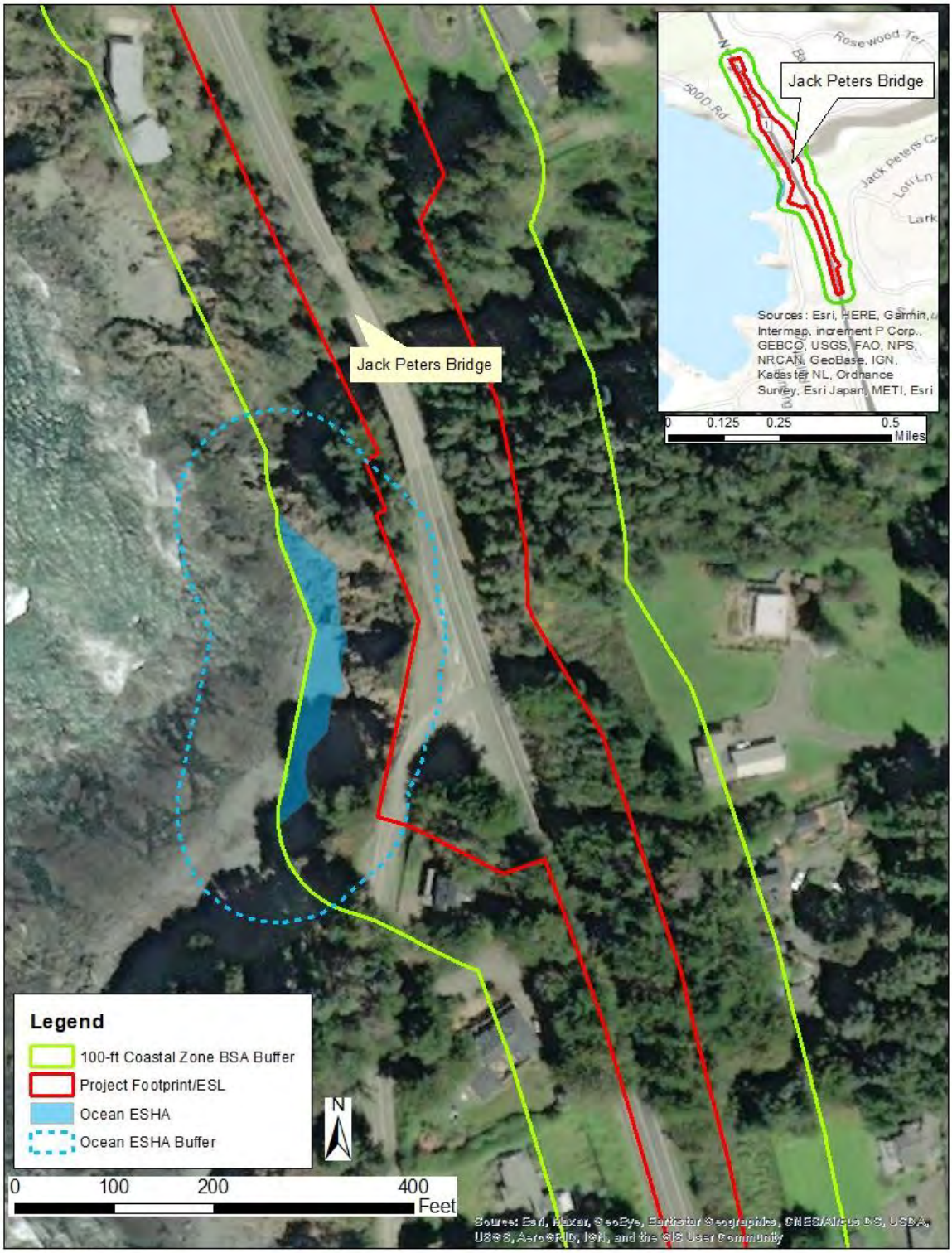


Figure 13. Ocean ESHA and Buffer within the BSA.

Impacts – Because this ESHA is outside the construction footprint, there would be no resulting temporary impacts to Ocean ESHA.

Buffer – The LCP (Section 20.496.020) requires a 100-foot buffer around ESHAs, unless it can be determined there is no adverse impact on the ESHA.

Avoidance – A 100-foot buffer is not feasible around this ESHA because Ocean ESHA is within 100 feet of the construction footprint required for the project. Ocean ESHA is within 50 feet of the ESL; however, this smaller buffer would not result in adverse impacts because:

1) Work within 100 feet of Ocean ESHA would occur for a limited duration.
2) Standard measures and Best Management Practices (Section 1.4—including using debris containment and erosion control measures during construction) would be implemented to avoid impacts to Ocean ESHA.

Sensitive Natural Communities

Sensitive natural communities (SNCs) are habitats considered sensitive because of their high species diversity, high productivity, unusual nature, limited distribution, or declining status (CDFW 2018). The CDFW ranks natural communities (alliances and associations) according to their degree of imperilment (as measured by rarity, trends, and threats) and considers natural communities with a global rarity ranking of G1-G3 or state rarity ranking of S1-S3 as sensitive (CDFW 2019).

There are two SNCs observed within the BSA: Grand fir (*Abies grandis*) forest (G4 S2.1), and bishop pine (*Pinus muricata*) forest (G3? S3?). Both are upland coniferous forest alliances. These SNCs are described below with each distinct area, or polygon, as a defined and identified ESHA.

Grand Fir Forest ESHAs

Grand fir (*Abies grandis*) forest (G4 S2.1) is a type of coniferous forest that grows typically in alkaline soils on mesic slopes above creeks and river mouths. The status of Grand Fir Forest Alliance is reached when the number of Grand firs within a contiguous stand of trees reaches a proportion of at least 60% of the tree canopy (Sawyer et al., 2009). Throughout its range, this alliance is dominant or co-dominant in the tree canopy with red alder, Sitka spruce (*Picea sitchensis*), bishop pine, and coast redwood (*Sequoia sempervirens*). Threats to this forest alliance include insect infestations, thinning within timber lands, and fire before the saplings have achieved maturity (Giusti 2014).

Grand fir forest SNC occurs on both the north and south banks of Jack Peters Creek between riparian vegetation and bishop pine forest, and to the west of SR 1 north of County Road 500D (Figure 14). Approximately 0.836 acre of grand fir forest occurs within the BSA and 0.298 acre within the ESL (Table 3). Stands of grand fir forest were identified at several locations within the project area and were all considered representative stands, although one, GF-1, showed a higher level of disturbance. Representative stands were areas that had several qualities that made them characteristic of the Grand Fir SNC, including continuity of habitat, species composition, and health. All stands observed within the study area fit this category. This ESHA contains habitat for sensitive species, including California Fully Protected (FP) white-tailed kite, and California Species of Special Concern, such as purple martin and Sonoma tree vole.

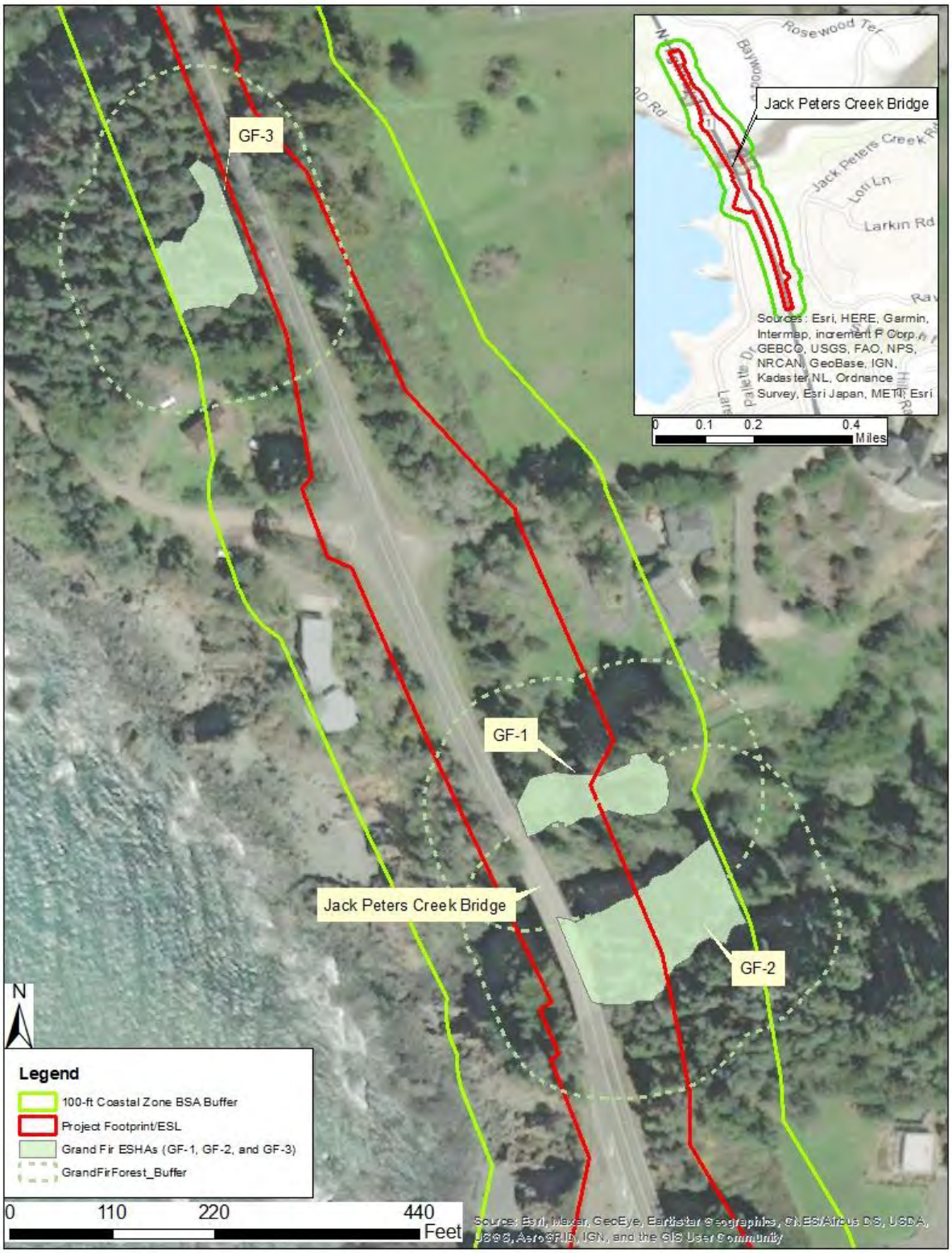


Figure 14. Grand Fir Forest ESHAs and Buffers within the ESL and BSA.

ESHA GF-1

Description – Located to the northeast of Jack Peters Creek Bridge and extending approximately 160 feet east of the eastern edge of the bridge along the north bank of Jack Peters Creek, ESHA GF-1 covers approximately 0.194 acre within the BSA and 0.095 acre within the project footprint/ESL. Mature trees at or greater than 12" diameter at breast height (dbh) are present and typically evenly spaced with few gaps in the canopy. The area is transected northeast to southwest by an overhead utility line with a clearance corridor of approximately 30 feet. Conifers of less than 12" dbh have recolonized this corridor; there is a break in the canopy, but the understory is overall contiguous.

Buffer – The LCP (Section 20.496.020) requires a 100-foot buffer around ESHAs, including ESHAs comprising SNCs, unless it can be determined there is no adverse impact on the ESHA.

Impacts – Work would occur within this grand fir forest ESHA. Due to vegetation removal and hillside grading for construction access, the majority of potential impacts to ESHA GF-1 are expected to be temporal, encompassing approximately 0.060 acre of 0.095 total acre present within the ESL. Activities such as widening the pier and abutment 17 feet to the east and installing rock slope protection (RSP), which would involve grading and fill on the north bank, and because the extended bridge would preclude growth of vegetation over 5 feet in height, would result in a small amount (0.035 acre total of 0.095 total acre present within the ESL) of permanent impacts to this ESHA.

Avoidance and Minimization – A buffer is not feasible around this ESHA because it is within the construction footprint required for the project. Although project activities would occur within ESHA GF-1, these activities would not result in adverse impacts because:

(1) Work within ESHA GF-1 would occur for a limited duration.

(2) Standard measures and Best Management Practices (Section 1.4—such as using THVF and/or flagging where appropriate) would be implemented to minimize temporary impacts to ESHA GF-1. In all disturbed areas, Caltrans would also restore and replant grand fir seedlings and associated vegetation areas upon completion of construction. Caltrans would offset temporal and permanent losses to ESHA GF-1 by preparing a Revegetation Plan that would incorporate planting of suitable native species within the SNC alliance at an appropriate replanting ratio of 3:1.

ESHA GF-2

Description: Located upstream of the bridge and along the south bank of Jack Peters Creek, ESHA GF-2 comprises approximately 0.413 acre within the BSA and 0.203 acre within the project footprint/ESL. Grand fir trees account for approximately 85% of the canopy at this location, with midslope red alder and bishop pine completing the canopy cover. The overall stand is likely second-growth forest, with larger, more mature trees farther away from the highway.

Buffer – The LCP (Section 20.496.020) requires a 100-foot buffer around ESHAs, including ESHAs comprising SNCs, unless it can be determined there is no adverse impact on the ESHA.

Impacts – Work would occur within this grand fir forest ESHA. Due to vegetation removal and hillside grading for construction access, the majority of potential impacts to ESHA GF-2 within the ESL are expected to be temporal, encompassing approximately 0.182 acre of 0.203 total acre present within the ESL. Activities such as widening the pier and abutment 17 feet to the east and installing rock slope protection (RSP), which would involve grading and fill on the north bank, and because the extended bridge would preclude growth of vegetation over 5 feet in height, would result in a small amount (0.021 acre of 0.203 total acre present within the ESL) of permanent impacts to this ESHA.

Avoidance and Minimization – A buffer is not feasible around this ESHA because it is within the construction footprint required for the project. Although project activities would occur within ESHA GF-2, these activities would not result in adverse impacts because:

(1) Work within ESHA GF-2 would occur for a limited duration.

(2) Standard measures and Best Management Practices (Section 1.4—such as the use of THVF and/or flagging where appropriate) would be implemented to minimize temporary impacts to ESHA GF-2. In all disturbed areas, Caltrans would also restore and replant grand fir seedlings and associated vegetation upon completion of construction. Caltrans would offset temporal and permanent losses to ESHA GF-2 by preparing a Revegetation Plan that would incorporate planting of suitable native species within the SNC alliance at an appropriate replanting ratio of 3:1.

ESHA GF-3

Description – Located approximately 645 feet north of the northern bridge abutment adjacent to the west side of SR 1, ESHA GF-3 is present just beyond the project footprint within the BSA. It comprises approximately 0.229 acre within the BSA. This stand is dominated by grand fir of various ages and also includes scattered mature bishop pine in the canopy. The canopy is dense and the midstory is sparse.

Buffer – The LCP (Section 20.496.020) requires a 100-foot buffer around ESHAs, including ESHAs comprising SNCs, unless it can be determined there is no adverse impact on the ESHA.

Impacts— Because all road and shoulder improvements on SR 1 would be conducted within existing disturbed areas, there would be no resulting temporary or permanent impacts to ESHA GF-3.

Avoidance – A 100-foot buffer is not feasible around this ESHA because GF-3 is within 100 feet of the construction footprint required for the project. ESHA GF-3 is less than 15 feet from the ESL; however, this smaller buffer would not result in adverse impacts to this ESHA because:

(1) Work within 100 feet of ESHA GF-3 would occur for a limited duration and all activities would be conducted on previously disturbed areas.

(2) Standard measures and Best Management Practices (Section 1.4—including use of THVF and/or flagging where appropriate to exclude the ESHA) would be implemented to prevent any impacts to ESHA GF-3, thus avoiding impacts.

Bishop Pine Forest ESHAs

Bishop pine (*Pinus muricata*) forest (G3? S3?) is a type of coniferous forest that grows in a variety of soil types on maritime terraces, coastal slopes, and coastal bluffs. Although the combined *Pinus muricata* - *Pinus radiata* (Bishop Pine – Monterey Pine) Forest & Woodland Alliance may be reached when the number of bishop pines within a contiguous stand of trees reaches a proportion between 15% and 30% of the tree canopy, the sub-association status of Bishop Pine Forest Alliance is reached when the number of bishop pines within a contiguous stand of trees reaches a proportion of at least 15% of the tree canopy and the trees are evenly spaced (Sawyer et al., 2009). Bishop pine is generally dominant or co-dominant in the tree canopy with Monterey cypress, Bolander pine (*P. contorta* var. *bolanderi*), grand fir, coast redwood, Mendocino pygmy cypress (*Hesperocyparis pigmaea*),

Monterey pine, Pacific madrone (*Arbutus menziesii*), and Gowen cypress (*H. goveniana*). Threats to this forest alliance include coastal housing development, fungal diseases such as pitch pine canker, competition from introduced conifers, and fire suppresion (Guisti 2014).

This SNC occurs throughout the ESL and BSA—all north of Lansing Street (Figure 15). Approximately 2.258 acres of bishop pine forest occurs within the BSA and approximately 0.792 acre within the ESL. To establish variations in baseline conditions, these stands were separated into two categories: representative stands and non-representative stands. Representative stands were areas that had several qualities that made them characteristic of the Bishop Pine SNC, including continuity of habitat, species composition, and health. Non-representative stands were areas of bishop pine that were not characteristic of the SNC. The various factors reviewed were similar to those of representative stands, but these stands were remnants, primarily comprising ruderal and invasive species, and were in poor or declining health. These stands were categorized as bishop pine forest, but in some cases didn't closely align with the alliance or association. This type of ESHA contains nesting habitat for sensitive species, including California Species of Special Concern such as purple martin and Sonoma tree vole.

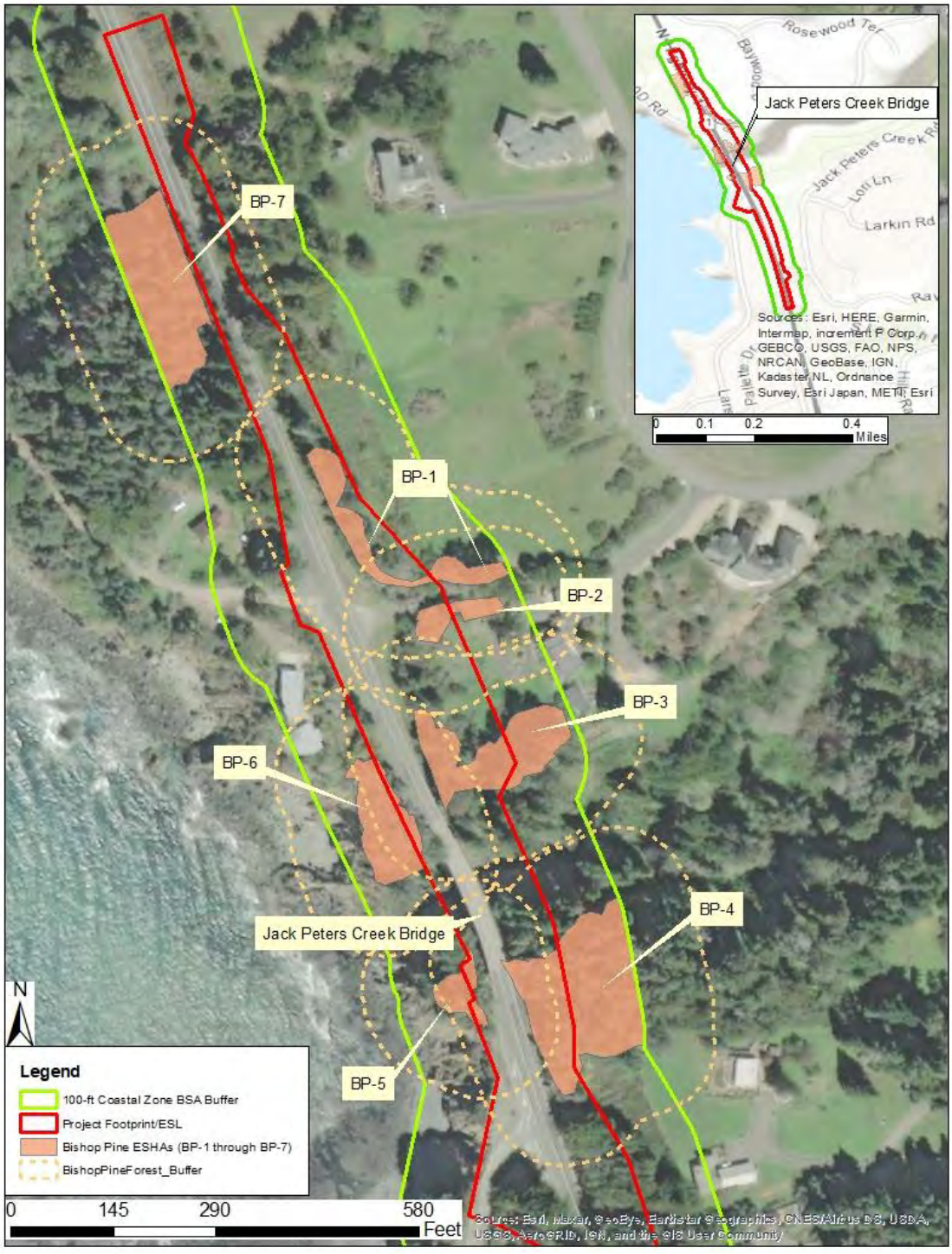


Figure 15. Bishop Pine Forest ESHAs and Buffers within the ESL and BSA.

ESHA BP-1

Description – Located immediately north of the private driveway across from County Road 500D, ESHA BP-1 encompasses approximately 0.223 acre within the BSA and 0.156 acre within the ESL. ESHA BP-1 is a non-representative stand and predominantly comprises deceased trees, with an understory of invasive vegetation. This stand is much smaller than the average minimum mapping unit of 1 acre for upland forests.

Buffer – The LCP (Section 20.496.020) requires a 100-foot buffer around ESHAs, including ESHAs comprising SNCs, unless it can be determined there is no adverse impact on the ESHA.

Impacts – Work would occur within this bishop pine forest ESHA. Potential impacts to ESHA BP-1 would occur within the ESL only and are expected to be temporal, encompassing approximately all 0.156 acre present within the ESL. This is due to vegetation removal and hillside grading to conform the highway alignment with the widened bridge.

Avoidance and Minimization – A buffer is not feasible around this ESHA because it is within the construction footprint required for the project. Although project activities would occur within ESHA BP-1, these activities would not result in adverse impacts because:

(1) Work within ESHA BP-1 would occur for a limited duration.

(2) Standard measures and BMPs (Section 1.4—such as using THVF and/or flagging where appropriate) would be implemented to minimize temporary impacts to ESHA BP-1. In all temporarily disturbed areas, Caltrans would also remove non-native, invasive plant species, and, upon completion of construction, would replant on-site with native plants that are co-dominant with bishop pine in this SNC, such as grand fir and Douglas-fir (*Pseudotsuga menziesii)*.

ESHA BP-2

Description – Located immediately south of the private driveway across from County Road 500D, ESHA BP-2 encompasses approximately 0.092 acre within the BSA and approximately 0.053 acre within the ESL. Similar to ESHA BP-1, it is a non-representative stand predominantly comprising deceased trees, with an understory of invasive vegetation.

Buffer – The LCP (Section 20.496.020) requires a 100-foot buffer around ESHAs, including ESHAs comprising SNCs, unless it can be determined there is no adverse impact on the ESHA.

Impacts—Work would occur within this bishop pine forest ESHA. Potential anticipated temporal impacts to ESHA BP-2 occur within the ESL only and encompass the entire approximate 0.053 acre present within the ESL. This is due to vegetation removal and hillside grading to conform the highway alignment with the widened bridge.

Avoidance and Minimization – A buffer is not feasible around this ESHA because it is within the construction footprint required for the project. Although project activities would occur within ESHA BP-2, these activities would not result in adverse impacts because:

(1) Work within ESHA BP-2 would occur for a limited duration.

(2) Standard measures and BMPs (Section 1.4—such as use of THVF and/or flagging where appropriate) would be implemented to minimize temporary impacts to ESHA BP-2. In all temporarily disturbed areas, Caltrans would also remove non-native, invasive plant species and, upon completion of construction, replant on-site with native plants that are co-dominant with bishop pine in this SNC, such as grand fir and Douglas-fir.

ESHA BP-3

Description – Located to the northeast of Jack Peters Creek Bridge and extending approximately 130 feet north of the bridge along SR 1, ESHA BP-3 is considered a representative stand, with approximately 0.367 acre within the BSA and 0.226 acre within the ESL. The area is transected northeast to southwest by an overhead utility line with a clearance corridor of approximately 30 feet. Early seral bishop pine and grand fir trees of less than 12″ dbh have recolonized this corridor; while there is a break in the canopy, the understory is overall contiguous. The remaining bishop pine community habitat includes mature trees at or greater than 12” dbh.

Buffer – The LCP (Section 20.496.020) requires a 100-foot buffer around ESHAs, including ESHAs comprising SNCs, unless it can be determined there is no adverse impact on the ESHA.

Impacts – Work would occur within this bishop pine forest ESHA. Due to vegetation removal and hillside grading to conform the highway alignment with the widened bridge, the majority of potential impacts to ESHA BP-3 within the ESL are expected to be temporal, encompassing approximately 0.152 acre of the 0.226 total acre present within the ESL. A smaller amount of permanent impacts to bishop pine forest habitat (0.074 acre of a total of 0.211 acre present within the ESL) in this ESHA would be a result of reserving space to create a ditch wetland immediately east of ESHA PW-2 for on-site wetland restoration.

Avoidance and Minimization – A buffer is not feasible around this ESHA because it is within the construction footprint required for the project. Although project activities would occur within ESHA BP-3, these activities would not result in adverse impacts because:

(1) Work within ESHA BP-3 would occur for a limited duration.

(2) Standard measures and BMPs (Section 1.4—such as using THVF and/or flagging, where appropriate) would be implemented to minimize temporary impacts to ESHA BP-3. Caltrans would offset temporal and permanent losses to ESHA BP-3 by preparing a Revegetation Plan that would incorporate removing non-native, invasive plant species and, upon completion of construction, replant on-site with native plants that are co-dominant with bishop pine in this SNC, such as grand fir and Douglas-fir at an appropriate replanting ratio of 3:1.

ESHA BP-4

Description – ESHA BP-4 is a representative stand located upstream of Jack Peters Creek Bridge, south of the creek adjacent to the grand fir forest SNC and extending approximately 250 feet south of the bridge along SR 1, with approximately 0.709 acre within the BSA and 0.254 acre within the ESL. The SNC surveyed within the project footprint and BSA is likely second-growth forest.

Buffer – The LCP (Section 20.496.020) requires a 100-foot buffer around ESHAs, including ESHAs comprising SNCs, unless it can be determined there is no adverse impact on the ESHA.

Impacts – Work would occur within this bishop pine forest ESHA. Potential impacts to ESHA BP-4 occur within the ESL and are expected to be temporal, potentially encompassing all 0.289 acre present within the ESL. This is due to vegetation removal and hillside grading to conform the highway alignment with the widened bridge.

Avoidance and Minimization – A buffer is not feasible around this ESHA because it is within the construction footprint required for the project. Although project activities would occur within ESHA BP-4, these activities would not result in adverse impacts because:

(1) Work within ESHA BP-4 would occur for a limited duration.

(2) Standard measures and BMPs (Section 1.4—such as using THVF and/or flagging, where appropriate) would be implemented to minimize temporary impacts to ESHA BP-4. In all temporarily disturbed areas, Caltrans would also remove non-native, invasive plant species, and, upon completion of construction, would replant on-site with native plants that are codominant with bishop pine in this SNC, such as grand fir and Douglas-fir.

ESHA BP-5

Description – ESHA BP-5 is a non-representative forest stand to the southwest of Jack Peters Creek, with approximately 0.089 acre within the BSA and 0.029 acre within the ESL. This stand consists of a few clustered pines, with the remainder of the area comprising shrubs such as coyote brush, late cotoneaster, and varying sizes of grand fir and Monterey cypress.

Buffer – The LCP (Section 20.496.020) requires a 100-foot buffer around ESHAs, including ESHAs comprising SNCs, unless it can be determined there is no adverse impact on the ESHA.

Impacts – Work would occur within this bishop pine forest ESHA. Due to vegetation removal and hillside grading for construction access, the majority of potential impacts to ESHA BP-5 would occur within the ESL only and are expected to be temporal, encompassing approximately 0.027 acre of a total of 0.029 acre present within the ESL. A smaller amount of permanent impacts to bishop pine forest habitat (0.002 acre of a total of 0.029 acre present within the ESL) in this ESHA would be a result of installing a wing wall on the south abutment.

Avoidance and Minimization – A buffer is not feasible around this ESHA because it is within the construction footprint required for the project. Although project activities would occur within ESHA BP-5, these activities would not result in adverse impacts because:

(1) Work within ESHA BP-5 would occur for a limited duration.

(2) Standard measures and BMPs (Section 1.4—such as using THVF and/or flagging, where appropriate) would be implemented to minimize temporary impacts to ESHA BP-5. In all disturbed areas, Caltrans would offset temporal and permanent losses to ESHA BP-5 by preparing a Revegetation Plan that would incorporate removing non-native, invasive plant species and, upon completion of construction, replant on-site

with native plants that are co-dominant with bishop pine in this SNC, such as grand fir and Douglas-fir at an appropriate replanting ratio of 3:1.

ESHA BP-6

Description – ESHA BP-6 is a stand of approximately 0.263 acre within the BSA and 0.044 acre within the ESL, located to the northwest of Jack Peters Creek Bridge, extending approximately 100 feet north of the bridge to the west of SR 1. This stand predominantly comprises smaller and dying or diseased trees, with an understory of invasive vegetation, such as French broom and late cotoneaster. Due to overhead utility lines crossing through the center of the stand, there is a pattern similar to the one in stand BP-3 in which the tree canopy is cut and mostly grand fir trees of less than 12″ dbh have recolonized this corridor.

Buffer – The LCP (Section 20.496.020) requires a 100-foot buffer around ESHAs, including ESHAs comprising SNCs, unless it can be determined there is no adverse impact on the ESHA.

Impacts – Work would occur within this bishop pine forest ESHA. Due to vegetation removal and hillside grading for construction access, the majority of potential impacts to ESHA BP-6 occur within the ESL only and are expected to be temporal, encompassing approximately 0.042 acre of a total of 0.044 acre present within the ESL. A smaller amount (0.002 acre of a total of 0.044 acre present within the ESL) of permanent impacts to bishop pine forest habitat in this ESHA would be a result of installing a wing wall on the north abutment.

Avoidance and Minimization – A buffer is not feasible around this ESHA because it is within the construction footprint required for the project. Although project activities would occur within ESHA BP-6, these activities would not result in adverse impacts because:

(1) Work within ESHA BP-6 would occur for a limited duration.

(2) Standard measures and Best Management Practices (Section 1.4—such as using THVF and/or flagging, where appropriate) would be implemented to minimize temporary impacts to ESHA BP-6. Caltrans would offset temporal and permanent losses to ESHA BP-6 by preparing a Revegetation Plan that would incorporate removing non-native, invasive plant species and, upon completion of construction, replant on-site with native plants that are co-dominant with bishop pine in this SNC, such as grand fir and Douglas-fir at an appropriate replanting ratio of 3:1.

ESHA BP-7

Description – ESHA BP-7 is located approximately 635 feet north of Jack Peters Creek Bridge and extends west to County Road 500D adjacent to the ESL along SR 1. ESHA BP-7 is present just beyond the project footprint within the BSA. It comprises approximately 0.515 acre within the BSA.

Buffer – The LCP (Section 20.496.020) requires a 100-foot buffer around ESHAs, including ESHAs comprising SNCs, unless it can be determined there is no adverse impact on the ESHA.

Impacts – Because all road and shoulder improvements on SR 1 would be conducted within existing disturbed areas, there would be no resulting temporary or permanent impacts to ESHA BP-7.

Avoidance – A 100-foot buffer is not feasible around this ESHA because BP-7 is within 100 feet of the construction footprint required for the project. ESHA BP-7 is less than 15 feet from the ESL; however, this smaller buffer would not result in adverse impacts to this ESHA because:

(1) Work within 100 feet of ESHA BP-7 would occur for a limited duration and all activities would be conducted on previously disturbed areas.

(2) Standard measures and Best Management Practices (Section 1.4—including using THVF and/or flagging where appropriate to exclude the ESHA) would be implemented to prevent temporary impacts to ESHA BP-7, thus avoiding impacts.

Special Status Wildlife Habitat

For the purposes of this ESHA assessment, special status wildlife habitat is considered to consist of areas occupied or presumed occupied by species regarded as state or federally threatened, endangered, candidates for listing, proposed as threatened or endangered, or state fully protected.

Protocol-level surveys were not conducted for species regarded as state or federally threatened, endangered, candidates for listing, proposed as threatened or endangered, or state fully protected special status species. Within the ESL and BSA, special status wildlife habitat is present for:

- Northern red-legged frog (NRLF) (*Rana aurora*)–state species of special concern
- Red-bellied newt (RBN) (*Taricha rivularis*)–state species of special concern
- White-tailed kite (*Elanus leucurus*)–state fully protected species
- American peregrine falcon (*Falco peregrinus anatum*)–state fully protected species
- Bald eagle (*Haliaeetus leucocephalus*)–federal Bald and Golden Eagle Protection Act; state endangered species
- Purple martin (*Progne subis*)–state species of special concern
- steelhead (*Oncorhynchus mykiss*)–Northern California (NC) DPS and associated critical habitat–federally threatened
- Essential Fish Habitat (EFH) for Pacific groundfish and coastal pelagics
- Sonoma tree vole (STV) (*Arborimus pomo*)–state species of special concern
- Marine mammals (Pacific harbor seal [*Phoca vitulina richardii*] and California sea lion [*Zalophus californianus*])– federal Marine Mammal Protection Act (MMPA)

Neither the California Coastal Act nor LCP identify a buffer distance for specific special status species wildlife habitat within the Coastal Zone. However, the CCA states that, "*Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas"* (CCA Section 30240). It would not be feasible to avoid impacts on special status wildlife habitat due to the vast extent of potentially occupied habitat in and surrounding the project area. Impacts on these special status wildlife habitats would be mostly temporary and restored in-kind on-site where feasible within the disturbed area and Caltrans ROW. While impacts could potentially result from vegetation removal on the banks of Jack Peters Creek to allow construction access to the installed falsework and temporary trestle, as well as along the east side of SR 1 to modify the approaches of SR 1 to the new bridge width, work locations are surrounded by alternative suitable habitat should vegetation removal cause any aquatic or terrestrial species to be temporarily displaced.

Additionally, visual and noise disturbance may indirectly and temporarily affect the ability of these species to use these habitats; however, work locations are surrounded by alternative suitable habitat should noise and visual disturbances cause any species to be temporarily displaced.

Analysis of impacts to ESHAs that provide special status wildlife habitat is provided below for each species or group of species:

- Caltrans does not anticipate any adverse impacts to special status amphibian species (NRLF or RBN) or their habitat. No breeding pond habitat for NRLF or features of breeding habitat for RBN have been observed within the BSA; however, the creek corridor may provide suitable foraging and dispersal habitat for these species. Ground disturbance and vegetation removal on the banks of Jack Peters Creek near the bridge could disturb NRLF and RBN utilizing the habitat within the BSA; however, project activities are not likely to adversely impact these species given the low risk of exposure (marginal habitat suitability) and the measures in Section 1.4. Potential impacts to NRLF and RBN would be avoided and minimized through implementation of the standard measures and BMPs designed to protect water quality, utilizing THVF fencing to minimize disturbance in sensitive habitat areas, and preparation of a plan for aquatic species relocation. A qualified biologist would be present at the start of all construction operations on the banks of the creek to survey and relocate amphibians to suitable habitat outside of construction zones to avoid impacts to this species.
- There is potential nesting habitat for these species in mature coniferous forest stands (e.g., grand fir, bishop pine) within the project footprint/ESL and BSA; however, Caltrans does not anticipate any adverse impacts to special status nesting birds including white-tailed kite, American peregrine falcon, bald eagle, purple martin, or their nesting habitat. Peregrine falcons in particular may nest on the sea cliff ledge features within the BSA. Ground disturbance and vegetation removal on and surrounding Jack Peters Creek Bridge could disturb nesting birds within the BSA; however, project activities are not likely to adversely impact these species given the low risk of exposure (marginal habitat suitability) and the measures identified in Section 1.4. Potential impacts to nesting birds would be avoided and minimized through implementation of the standard measures and BMPs designed to protect nesting birds under the Migratory Bird Treaty Act. A qualified biologist would conduct a nesting bird survey within one week prior to vegetation removal. If an active nest is located, the biologist would coordinate with CDFW for further direction.
- Caltrans has determined the proposed action ***may affect but is not likely to adversely affect*** NC DPS of steelhead and their critical habitat (Caltrans 2022). The potential for visual and noise disturbance effects on individual steelhead is due to impact hammer activities adjacent to the OHWM. Section 7 informal consultation was

completed with NMFS for addressing potential impacts on these species and NMFS has provided avoidance and minimization measures in the Letter of Concurrence (LOC) to avoid and/or minimize potential adverse effects to steelhead and its habitat in Jack Peters Creek (NMFS 2022).

- Caltrans has also determined the proposed action ***may adversely affect*** EFH for Pacific groundfish and coastal pelagic species managed under the Pacific Fishery Management Council (PFMC). JPC-1 ESHA supports habitats consistent with the EFH designation for species regulated under two federal fishery management plans (FMPs): Pacific Coast Groundfish FMP and Coastal Pelagic Species FMP, as designated under the Magnuson-Stevens Fishery Conservation and Management Act (MSA). Avoidance and minimization measures provided in the NMFS LOC would also apply to EFH, and include the following:

    - Areas of disturbed soil would be seeded with native, regionally-appropriate plant species.

    - Under the Construction General Permit issued by the State Water Resources Control Board, Caltrans is required to implement standard water quality BMPs (Caltrans 2011) during construction of all projects.

    - The contractor is required to develop and implement site-specific best management practices and emergency spill controls.

- Suitable nesting habitat for Sonoma Tree vole (STV) is present within the project footprint/ESL and BSA in mature grand fir and bishop pine stands. Nesting STVs within the BSA may potentially be impacted by removal of suitable nest trees. Over 60 total bishop pine and grand fir trees of at least 12-inch dbh would be removed for this project. Tree removal would be required for road shoulder grading and access for construction of the temporary trestle and falsework east of the current bridge. These trees are adjacent to a highly traveled roadway that would provide marginally suitable habitat due to overall fewer old-growth trees present to support tree vole nests, therefore limiting the use for nesting voles. This potential impact would not be substantial given the nearby existing habitat and environmental conditions adjacent to SR 1, the temporary nature of the project, and implementation of the standard measures and BMPs identified in Section 1.4, including surveys prior to tree removal. No adverse impacts to nesting STVs are anticipated with implementation of these measures.

- Pacific harbor seals and California sea lions are federally protected under the MMPA and have been documented in the bay immediately west of the mouth of Jack Peters Creek. They may forage and rest in Ocean ESHA habitat within the BSA. Foraging and resting marine mammals within the BSA may potentially be impacted by CIDH pile drilling at the bridge piers, which is required to widen the foundation of the piers. The vibratory nature of the drilling has the potential to be detected by marine mammals in the bay within 800 feet of the drilling activity, which could alter their behavioral patterns, categorized by the MMPA as Level B Harassment. This refers to acts that have the potential to disturb (but not injure) a marine mammal or marine mammal stock in the wild by disrupting behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering. Level B Harassment of marine mammals using the bay adjacent to Jack Peters Creek due to CIDH drilling would be avoided with implementation of measures identified in Section 1.4, such as biological monitoring for marine mammals in the behavioral impact zone. No adverse impacts to foraging or resting marine mammals are anticipated with implementation of these measures.

In summary, due to the limited vegetation removal, the short-term nature of the activities, and the timing of work (avoiding key migration periods for protected fish species), no substantial disruption of habitat values is expected. Standard measures and BMPs have been outlined for the habitats associated with these species (Section 1.4).

3.1.5 ESHA Impact Summary and Conclusions

The project would have relatively minor, mostly temporal impacts on coastal riparian habitat and wetland and non-wetland Waters of the U.S. and State (WOTUS). Temporary removal of this small portion of riparian habitat and disturbance to WOTUS would be fully restored upon completion of construction through standard measures as described in Section 1.4.

Although the non-wetland aquatic features are considered to have marginal quality, these features function as sensitive aquatic habitats because of the connectivity they provide. However, permanent removal of a small portion of non-wetland waters and wetland vegetation is not anticipated to have an adverse impact on the quality or function of the adjacent wetland or riverine systems or affect wildlife corridors.

The project would also incur mostly temporal impacts and, to a lesser degree, permanent impacts, on two upland Sensitive Natural Community (SNC) habitats: Grand Fir Forest and Bishop Pine Forest. Although many of the bishop pine forest SNCs are considered to have

marginal quality, these areas function as sensitive upland forest because of the habitat structure they provide.

Caltrans would offset temporal and permanent losses to SNC ESHAs with in-kind restoration and revegetation of forest habitat beyond the clear recovery zone (CRZ) in cut-fill areas 10 to 85 feet from the edge of pavement, and the remaining Caltrans right of way (ROW) beyond the cut-fill zones. With restoration and revegetation of the forest habitat, Caltrans anticipates the removal of portions of grand fir forest would not result in substantial impact to this SNC and would not lead to a decline in quality or function of the broader adjacent stands, affect wildlife corridors, or result in fragmentation of habitat. Potentially substantial impacts to bishop pine forest in the project footprint would be offset with on-site restoration of native communities in disturbed and adjacent areas. Thus, removal of these SNC habitats is not anticipated to have an adverse impact on the quality or function of the adjacent grand fir and bishop pine forest or affect wildlife corridors within these habitats.

All impacts to ESHAs within the project footprint/ESL are summarized in Table 4 below.

Table 4. Summary of Estimated Impacts to ESHAs by ESHA Feature Type

ESHA Feature Type		Impacts						
		Temporary Length linear feet (lf)	Temporary Acres	Temporal Length (lf)	Temporal Acres	Permanent Length (lf)	Permanent Acres	Total Acres per ESHA Feature Type
3-parameter Wetland	Seep PW-1 PW-2 PW-3	N/A	0	N/A	0.060	N/A	0.003	**0.063**
Intermittent Drainage / Other Water / Stream	OW-4	0	0	74	0.003	24	0.001	**0.004**
Coastal Riparian	CR-2 CR-3	N/A	0	N/A	0.067	N/A	0.005	**0.072**
Total Aquatic ESHAs		**0**	**0**	**74**	**0.130**	**24**	**0.009**	**---**
Grand Fir Forest	GF-1 GF-2	N/A	0	N/A	0.242	N/A	0.056	**0.298**
Bishop Pine Forest	BP-1 BP-2 BP-3 BP-4 BP-5 BP-6	N/A	0	N/A	0.714	N/A	0.078	**0.792**
Total Upland ESHAs		**N/A**	**0**	**N/A**	**0.956**	**N/A**	**0.134**	**---**

3.2 Mitigation

Compensatory mitigation would be required for permanent impacts to ESHAs as a result of project activities. Temporal impacts total 0.130 acre, and permanent impacts total approximately 0.009 acre. The total amount of impacted aquatic resources include 0.063 acre of 3-parameter wetlands, 0.004 acre of Other Waters of the U.S. and State, and 0.072 acre of coastal riparian habitat.

Temporal impacts to upland resource ESHAs total 0.956 acre and permanent impacts total approximately 0.134 acre, which includes 0.298 acre of grand fir forest habitat and 0.792 acre of bishop pine forest habitat. Impacts to upland ESHAs would be fully restored on-site.

Impacts to aquatic ESHAs, including Waters of the U.S. and State and Coastal Riparian, would be partially restored or recreated on-site but would require additional off-site restoration at a 12.1:1 ratio through the purchase of a permittee-responsible mitigation site. This site is located several miles north of Point Arena in Mendocino County.

Chapter 4. References

California Coastal Commission (CCC). California Coastal Act of 1976. San Francisco, California. Updated 2019.

_____. 1981. California Coastal Commission Policy Guidance: Statewide Interpretive Guidelines for Identifying and Mapping Wetlands and Other Wet Environmental Sensitive Habitat Areas.

California Department of Fish and Wildlife (CDFW). 2018. Protocols for surveying and evaluating impacts to special status native plant populations and sensitive natural communities. Available: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959.

———.2019. California Natural Community List. 2019. Available at: https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities. Updated: October 2018. Accessed: July 2019.

California Department of Transportation (Caltrans). 2013. Natural Environment Study (with Minimal Impacts) for the for the Mendocino Four Bridges Geotechnical Investigation Project. State Route 1 (01-MEN-1) Post Miles 48.05 to 62.12 in Mendocino County, California. February.

_____. 2014. Botanical and ESHA Assessment and Reduced Buffer Analysis for the Mendocino Four Bridges Geotechnical Investigation Project. State Route 1 (01-MEN-1) Post Miles 48.05 to 62.12 in Mendocino County, California. October.

_____. 2019. Water Quality Assessment Report for the Jack Peters Creek Bridge Project. State Route 1 (01-MEN-1) Post Mile 51.87 in Mendocino County, California. October.

_____. 2021. Natural Environment Study for the Jack Peters Creek Bridge Project. State Route 1 (01-MEN-1) Post Mile 51.87 in Mendocino County, California. December.

_____. 2022a. Geotechnical Design Report for the Jack Peters Creek Bridge Project. State Route 1 (01-MEN-1) Post Mile 51.87 in Mendocino County, California. March.

_____. 2022b. Biological Assessment for the Jack Peters Creek Bridge Project. State Route 1 (01-MEN-1) Post Mile 51.87 in Mendocino County, California. March.

County of Mendocino. Revised, 1991. Mendocino County General Plan. Coastal Commission Certified 1985. Mendocino County Planning and Building Services, Ukiah, CA.

National Marine Fisheries Service (NMFS). 2022. Letter of Concurrence with the Biological Assessment for the Jack Peters Creek Bridge Project. State Route 1 (01-MEN-1) Post Mile 51.87 in Mendocino County, California. May.

Giusti, G. A. 2014. Watching the demise of a coastal forest type – Bishop pine. A White Paper. California Forest Pest Council Winter. URL: <http://cemendocino.ucanr.edu/files/199447.pdf>

Sawyer, J. O., T. Keeler-Wolf, and J. Evens. 2009. A Manual of California Vegetation. 2nd Edition. Sacramento, CA: California Native Plant Society.

Appendix A. Construction Plan Sets

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET	TOTAL SHEETS
01	MEN	01	51.3/52		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. Exp. CIVIL — STATE OF CALIFORNIA

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

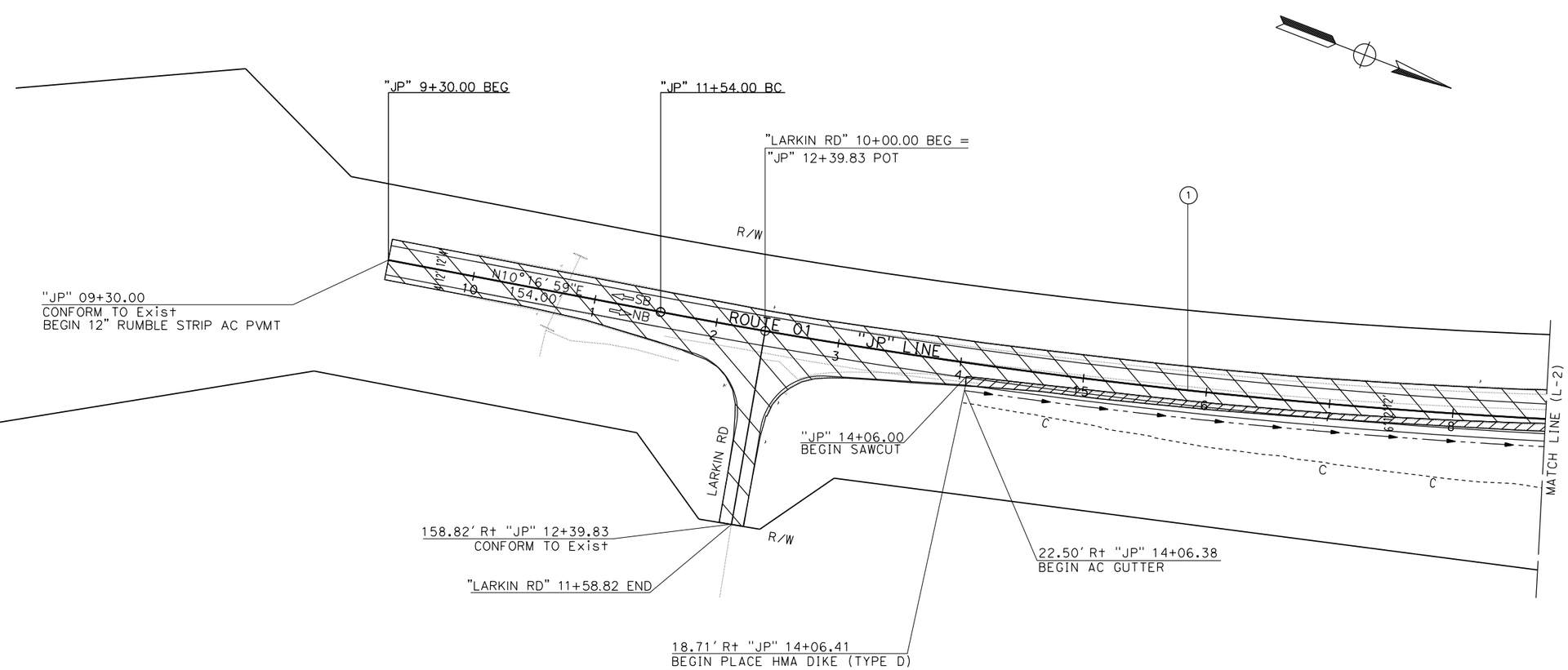
LEGEND:

COLD PLANE AC PAVEMENT (0.15')

REMOVE ASPHALT CONCRETE PAVEMENT

ABBREVIATIONS:

AITS: ALTERNATIVE IN-LINE TERMINAL SYSTEM



CURVE DATA

No. #	R	Δ	T	L
1	5305.00	10°42'42"	497.35	991.79

LAYOUT

SCALE: 1" = 50'

CALCULATED-DESIGNED BY
CHECKED BY
REVISED BY
DATE REVISED
MOHAMED KASEM
SAEED AAZAMI
FUNCTIONAL SUPERVISOR
DERECK GOODWIN
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

LAST REVISION
DATE PLOTTED => 6/29/2022
TIME PLOTTED => 11:34:38 AM

BORDER LAST REVISED 8/5/2020
USERNAME => "s121172"
DGN FILE => ...\Plans\0117000133ea001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0330
PROJECT NUMBER & PHASE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET	TOTAL SHEETS
01	MEN	01	51.3/52		

REGISTERED CIVIL ENGINEER DATE

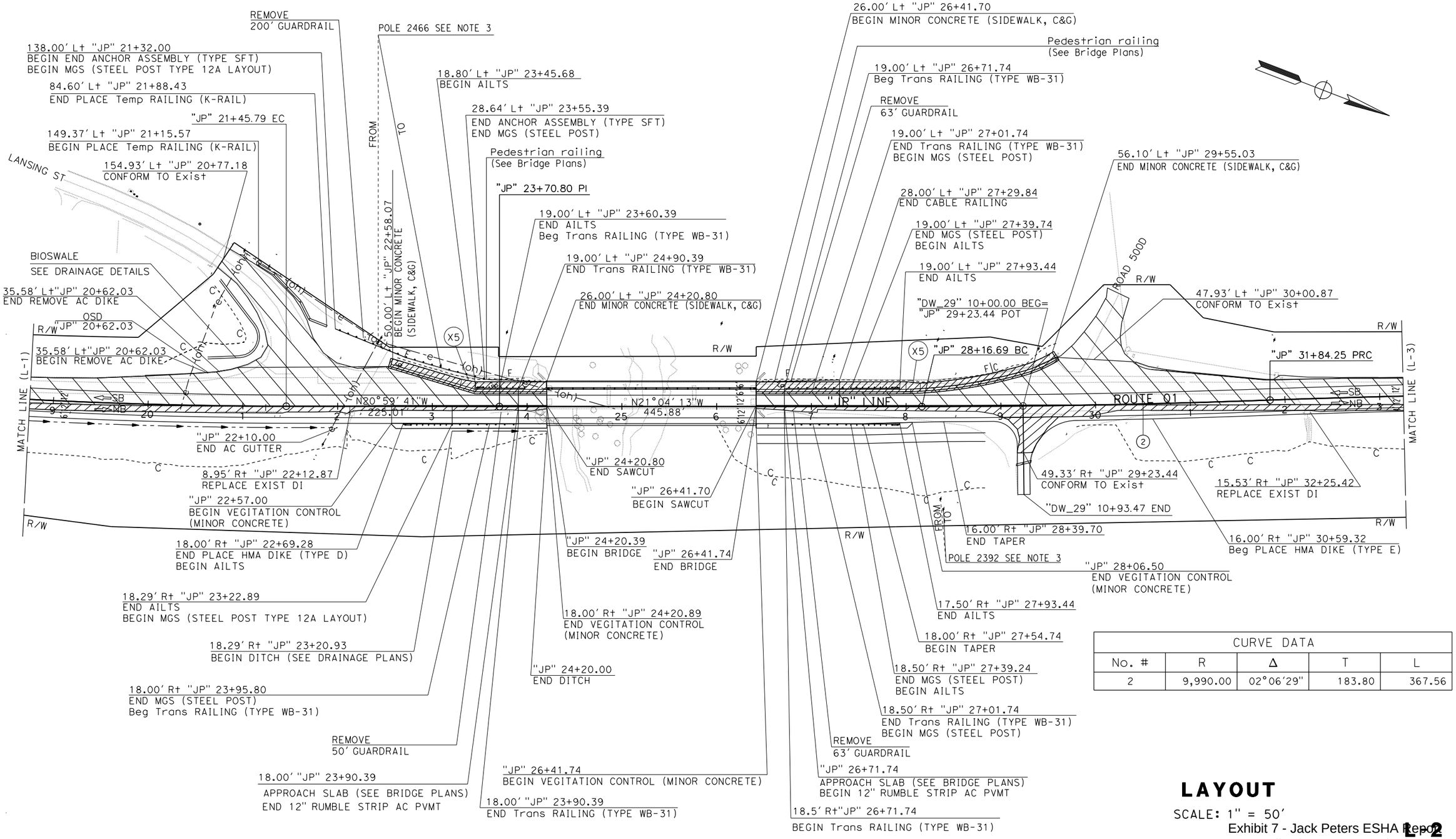
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

PRELIMINARY DESIGN FOR REVIEW ONLY

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE
2. FOR ADDITIONAL LAYOUT NOTES, SEE LAYOUT SHEET L-1
3. POLES TO BE REMOVED/REPLACED BY OTHERS PRIOR TO CONSTRUCTION



CURVE DATA				
No. #	R	Δ	T	L
2	9,990.00	02°06'29"	183.80	367.56

LAYOUT

SCALE: 1" = 50'

REVISED BY | DATE REVISED
MOHAMED KASEM | SAEED AAZAMI
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: DERECK GOODWIN
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

LAST REVISION | DATE PLOTTED => 6/29/2022 | TIME PLOTTED => 11:36:07 AM

BORDER LAST REVISED 8/5/2020 | USERNAME => "s121172" | DGN FILE => ...\Plans\0117000133ea002.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0330 | PROJECT NUMBER & PHASE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
01	MEN	01	51.3/52		

REGISTERED CIVIL ENGINEER DATE

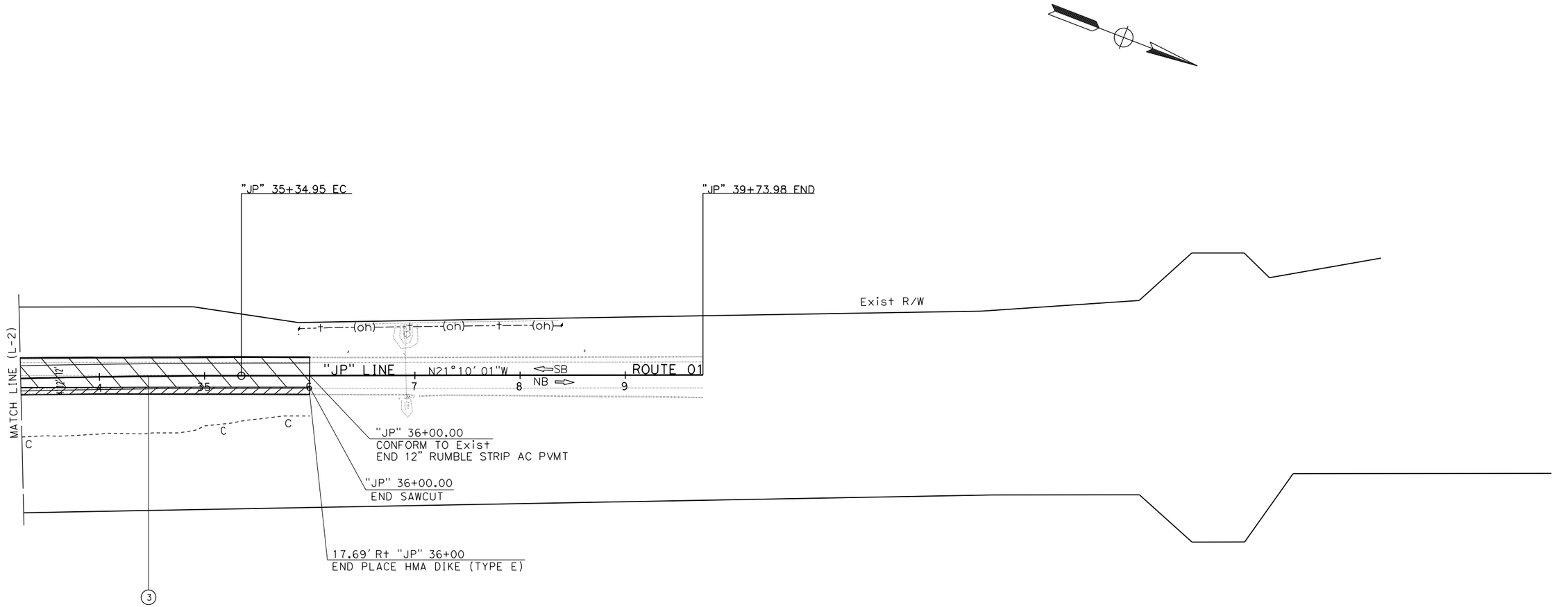
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

PRELIMINARY DESIGN FOR REVIEW ONLY

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. FOR ADDITIONAL LAYOUT NOTES, SEE LAYOUT SHEET L-1



CURVE DATA

No. #	R	Δ	T	L
3	9,990.00	02°00'41"	175.37	350.69

LAYOUT

SCALE: 1" = 50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION **DESIGN**

FUNCTIONAL SUPERVISOR: DERECK GOODWIN

CALCULATED-DESIGNED BY: MOHAMED KASEM

CHECKED BY: SAEED AAZAMI

REVISED BY / DATE REVISED

LAST REVISION DATE PLOTTED => 6/29/2022 TIME PLOTTED => 12:11:12 PM

BORDER LAST REVISED 8/5/2020 | USERNAME => "s121172" DGN FILE => ...\Plans\0117000133ea003.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0330 | PROJECT NUMBER & PHASE

Appendix B. Project Area Photographs

Photo 1. Jack Peters Creek Bridge standing in creek channel looking west. Photo taken 5/1/2019.

Photo 2. Jack Peters Creek Bridge standing in creek channel looking overhead at bridge and Pier 2. Photo taken 4/2/2019.

Photo 3. Jack Peters Creek estuarine habitat. Standing in creek channel looking southwest. Photo taken 5/1/2019.

Photo 4. Base of Pier 2 at Jack Peters Creek Bridge. Standing in creek channel looking southeast towards base of Pier 3. Photo taken 5/1/2019.

Photo 5. Jack Peters Creek Bridge. Standing in creek channel looking southeast towards base of Pier 3 with riparian habitat and grand fir forest on south bank farther upstream. Photo taken 5/1/2019.

Photo 6. Jack Peters Creek Bridge. Standing in creek channel looking north at bedrock and coastal scrub vegetation at base of Pier 2. Photo taken 5/1/2019.

Photo 7. Jack Peters Creek Bridge. Standing midslope on south bank looking northwest towards Pier 2 and Abutment 1. Photo taken 5/1/2019.

Photo 8. Jack Peters Creek. Standing in creek channel looking west towards creek mouth during high tide. Photo taken 6/25/2019.

Photo 9. Jack Peters Creek Bridge. Standing on south bank looking south towards base of Abutment 4. Photo taken 8/6/2013.

Photo 10. Jack Peters Creek Bridge. Standing in creek channel looking east/upstream. Photo taken 8/6/2013.

Photo 11. Jack Peters Creek Bridge. Standing in bishop pine stand southeast of bridge, looking south along Highway 1. Photo taken 7/1/2019.

Photo 12. Jack Peters Creek Bridge. Standing in creek channel, looking north towards north bank and its coastal scrub vegetation. Photo taken 7/1/2019.

Photo 13. Jack Peters Creek Bridge. From driveway east of Highway 1 intersection with Old 5000 Road, looking southwest towards ditch wetland. Photo taken 7/1/2019.

Photo 14. Jack Peters Creek Bridge. Standing northwest of Highway 1 intersection with Lansing Street, looking southeast towards Monterey cypress forest along east side of Highway 1. Photo taken 7/1/2019.

Photo 15. Standing south of intersection of Highway 1 and Old 5000 Road, looking southeast towards Jack Peters Creek Bridge. Photo taken 7/1/2019.

Photo 16. Standing adjacent to west side of Abutment 1, looking south towards Jack Peters Creek Bridge and vegetation southwest of the bridge. Photo taken 7/1/2019.

Photo 17. Standing south of intersection of Highway 1 and Larkin Road at midsection of feature JP-OW1, looking south along Highway 1. Photo taken 7/8/2020.

Photo 18. Standing adjacent to east of SR 1 south of Larkin Road at culvert inlet where JP-OW1 and OW2 meet. Looking west towards culvert inlet. Photo taken 7/8/2020.

Photo 19. Standing adjacent to west side of SR 1 south of Larkin Road at beginning of JP-OW3. Looking north adjacent to culvert outlet. Photo taken 7/8/2020.

Photo 20. Opening in grand fir forest habitat on northern bank of Jack Peters Creek. Looking northeast. Photo taken 5/1/2019.

Photo 21. Potential Staging Area at 119-140-31 looking east across the parcel towards SR 1. Photo taken 6/28/2021.

Photo 22. Potential staging area at APN 119-070-13 looking northeast across the parcel. Photo taken 6/28/2021.

Appendix C. Wetland Delineation Forms

Available on File

ONSITE REVEGETATION PLAN

for the

JACK PETERS CREEK BRIDGE WIDENING PROJECT

Mendocino County, State Route 1, Post Mile 51.3/52.1
EA 01-43484 / EFIS 0117000133

August 2022

STATE OF CALIFORNIA
Department of Transportation

Prepared By: _____ Date: _____
Jonathan Lee, Revegetation Specialist
North Region Environmental
(707) 492-0047

Approved By: _____ Date: _____
Robert Meade, Senior Environmental Planner
North Region Environmental
(573) 619-4518

1) Applicant and Contacts

a) Permit applicant, owner of revegetation site, and party with financial responsibility for completing revegetation work:

i. California Department of Transportation (Caltrans)

b) Permitting agency requiring revegetation:

i. California Coastal Commission (CCC)

ii. California Department of Fish and Wildlife (CDFW)

iii. North Coast Regional Water Quality Control Board (NCRWQCB)

iv. United States (U.S.) Army Corps of Engineers (USACE)

c) Contacts:

i. ***Revegetation Specialist:*** Jonathan Lee

1656 Union Street, Eureka, CA 95501 (707) 492-0047

ii. ***Project Biologist:*** Tracy Walker

1656 Union Street, Eureka, CA 95501 (707) 815-6503

iii. ***Project Manager:*** Jaime Matteoli

1656 Union Street, Eureka, CA 95501 (707) 498-0961

2) Project Location

The California Department of Transportation (Caltrans) proposes the Jack Peters Bridge Widening Project (hereafter project), which spans Jack Peters Creek. The project is located on State Route (SR) 1, between post miles (PMs) 51.3 and 52.1, North of the town of Mendocino, California in Mendocino County (Appendix A—Figure 1).

3) Construction Activities and Anticipated Impacts

a) Construction Activities

The project proposes upgrading the existing bridge structure to current design standards by widening the bridge and replacing the bridge rails. The rails have been identified as deficient, with concrete spalls and exposed and corroded rebar. In addition, the existing shoulder widths do not provide adequate room for disabled vehicles or for collision avoidance maneuvers and cannot accommodate bicycle traffic or pedestrians. A temporary trestle and falsework would be constructed parallel to the existing bridge to support bridge widening. Access to these features would be constructed adjacent to the southeast and northeast corners of the bridge. An informal public access trail on the south side of the bridge would be improved for foot access, and to prevent erosion. Supports for the trestle would be notched into the canyon wall, with one support anticipated to be below the ordinary high water mark (OHWM) of the creek, but outside the wetted channel. In order to align with the widened bridge, the roadway north of the bridge would be widened and the slope to the east of the road prism would be excavated and graded to accommodate the widened alignment.

Clearing and grubbing of vegetation and trees would be required for access and bridge and roadway widening. Existing vegetation would be preserved as much as possible within the work area. Typical equipment associated with this work includes excavators, cranes, dozers, and mulchers. Construction spoils and debris would be removed and disposed of at a permitted disposal site. All disturbed soil areas would be restored to pre-construction conditions after the completion the work.

b) Anticipated Impacts

Temporary impacts are those in which restoration begins within one year of the first date of impact. Temporal impacts occur when restoration begins more than one year after the first date of impact and there is a temporal loss of function. Permanent impacts are impacts that are not restorable.

The proposed project would result in approximately 0.067 acre of temporal impacts, and 0.005 acre of permanent impacts to riparian habitat, 0.063 acre of temporal impacts to jurisdictional wetlands, and impacts to two Sensitive Natural Communities (SNC) which are Bishop Pine Forest and Grand Fir Forest. Impacts would result from the following construction activities:

i. Construction of a temporary bridge east of the existing alignment ii.

Widening of Jack Peter's bridge

iii. Widening the roadway north of the bridge

Table 1 below summarizes the estimated net impacts to riparian habitat, jurisdictional wetlands,

Table 1. Summary of Estimated Impacts for Jack Peters Creek Bridge Project with Proposed Offsets and Mitigation at On-Site and Off-Site Locations

Impact or Offset Description	Impacts (Acres)	On-Site Offsets and Mitigation (Acres)	Off-Site Mitigation (Acres)	Offset and Mitigation Type
Temporal & Permanent Impacts				
Total Permanent Impacts to Waters of the U.S. and State (CWA Wetlands)	0.063			
Total Permanent Impacts to Waters of the U.S. and State (Non-Wetland Waters)	0.004			
Total Permanent Impacts to Waters of the U.S. and State	**0.067**			
Total Temporal Impacts to Riparian	0.067			
Total Permanent Impacts to Riparian	0.005			
Total Combined Temporal and Permanent Impacts to Riparian	**0.072**			
Total Temporal Impacts to Grand Fir SNC	0.210			
Total Permanent Impacts to Grand Fir SNC	0.088			
Total Combined Temporal and Permanent Impacts to Grand Fir SNC	**0.298**			
Total Temporal Impacts to Bishop Pine SNC	0.714			
Total Permanent Impacts to Bishop Pine SNC	0.078			
Total Combined Temporal and Permanent Impacts to Bishop Pine SNC	**0.792**			

Waters of the U.S. and State, and bishop pine and grand fir SNC. Figure 2 in Appendix A shows

the anticipated areas of impact. The amount of actual impact may be less than anticipated, depending on access needs for construction activities.

Impact or Offset Description	Impacts (Acres)	On-Site Offsets and Mitigation (Acres)	Off-Site Mitigation (Acres)	Offset and Mitigation Type
Proposed Offsets and Mitigation On-Site				
Ditch Wetland Creation		**0.045**		On-site ditch wetland creation for permanent impacts to wetlands; Total wetland replacement 1:1 in-kind replacement
Seep Wetland Restoration		**0.018**		On-site seep wetland natural realigning for permanent impacts to wetlands; Total wetland replacement at 1:1 in-kind replacement
Non-wetland Waters Restoration		**0.004**		On-site waters/drainage natural realigning for permanent impacts to non-wetland waters at 1:1 in-kind replacement
Riparian Restoration		**0.216**		On-site riparian restoration for temporal and permanent impacts to riparian at 3:1 in-kind replacement
Grand Fir Forest SNC Restoration		**0.894**		On-site grand fir restoration for temporal and permanent impacts at 3:1 in-kind replacement ratio
Bishop Pine SNC Restoration Due to issues facing bishop pine along the Mendocino coast and restrictions of planting within the State ROW, CDFW has agreed to allow Caltrans to replant within the ROW at Jack Peters Creek with regionally appropriate native plants (e.g., grand fir) and remove invasive species (e.g., Monterey cypress) in lieu of planting bishop pine.				

Impact or Offset Description	Impacts (Acres)	On-Site Offsets and Mitigation (Acres)	Off-Site Mitigation (Acres)	Offset and Mitigation Type
Removal of 1.640-acres of Monterey cypress trees and other non-native, invasive species within Caltrans ROW		**1.640**		On-site removal of non-native Monterey cypress within bishop pine and grand fir planting locations
Restoration of 2.220-acres of bishop pine forest on-site via the planting of grand fir SNC. Impacts will be mitigated through planting of similar native tree species in lieu of planting bishop pine SNC in State ROW		**2.220**		On-site restoration for temporal and permanent impacts to bishop pine SNC at 3:1 ratio
Proposed Mitigation Off-Site				
Off-site Waters of the U.S./State Preservation at Saunder's Landing Caltrans proposes to preserve sensitive aquatic resources present at Saunder's Landing via purchase and transference of the property to the MLT				
Off-site Waters of the U.S./State (wetlands) Preservation Mitigation at Saunder's Landing			**0.564**	In addition to 1:1 offset at Jack Peters Creek Bridge, Caltrans proposes to preserve 0.564-acre of CWA wetlands at Saunder's Landing
Off-site Waters of the U.S./State (non-wetland waters) Preservation Mitigation at Saunder's Landing			**0.036**	In addition to 1:1 offset at Jack Peters Creek Bridge, Caltrans proposes to preserve 0.036-acre of non-wetland waters at Saunder's Landing

4) Revegetation Goals

The revegetation goals include (1) initiate restoration of the affected riparian vegetation by replanting with self-sustaining, native plants that are appropriate to the region and habitat in the riparian restoration area at a 3:1 ratio on-site (Figure 1), (2) create conditions that will support a 3-parameter wetland by designing and constructing a grading plan that will allow development of hydric soil and wetland hydrology and by installing native, wetland-rated plants and seeds, (3) Account for the loss of Bishop Pine Forest SNC and Grand Fir Forest SNC by reforestation with grand fir and associated plant species at 3:1 ratio onsite within the identified grand fir planting areas (Figure 2).

5) Summary of Revegetation Activities

Revegetation activities will include: a)

Erosion Control

If ground disturbance occurs, upon completion of construction, a permanent erosion control seed mix using regionally-appropriate native species and a non-persistent annual grass (i.e., common barley, *Hordeum vulgare*) will be hydroseeded in bare soil areas. Erosion control measures are specifications managed by Construction and Landscape Architecture and by Maintenance after construction is complete and are not considered part of the revegetation success criteria.

b*) *Plant Species and Quantities

Revegetation will be conducted using California native, regionally- and habitatappropriate native plant species. Plant material may include locally collected and outgrown bareroot stock, container stock, and salvaged material. The anticipated species of plant material to be utilized are presented below in Tables 1, 2 and 3, with species and quantities intended to closely resemble what is currently present. In addition, natural vegetation recruitment (volunteers) and resprouting native vegetation will be incorporated into planting considerations, revegetation goals, and may contribute to

achieving the success criteria. Actual species and quantities to be used for initial planting and replanting will be determined by commercial availability, natural recruitment, resprouting vegetation, site conditions at the time of planning and planting, and other factors.

If vegetation is cut at ground level prior to construction, then resprouting vegetation will be protected from herbivory and monitored for continued survival and re-establishment.

Table 1. Potential planting palette for onsite riparian revegetation area, based on existing species observed

***Scientific Name* / Common Name**	**Estimated Quantity of Plants Needed at Initial Planting**	**Approximate Planting Densities**
Woody Species		
Baccharis pilularis ssp. *consanguinea* / Coyote Brush	216 Estimated Plants	6 to 12 ft. on center for other woody plants, depending on average height and width at maturity
Ceanothus thyrsiflorus / California Lilac		
Frangula californica / Coffeeberry		
Garrya elliptica / Silk tassel		
Lonicera involucrata var. *ledebourii* / Twinberry		
Morella californica / California wax myrtle		
Rubus parviflorus / Thimbleberry		
Rubus spectabilis / Salmonberry		
Rubus ursinus / California Blackberry		
Salix lasiolepis / Arroyo Willow		
Salix sitchensis / Sitka Willow		
Herbaceous Species		
Polystichum munitum / Western Sword Fern	78 Estimated Plants	3 to 4 ft. on center
Heracleum lanatum / Cow Parsnip		

Table 2. Potential planting palette for onsite Grand Fir Reforestation Areas, based on existing species observed

***Scientific Name* / Common Name**	**Estimated Quantity of Plants Needed at Initial Planting**	**Approximate Planting Densities**
Woody Species		
Abies grandis / Grand Fir	1,234 Estimated Plants	6 to 12 ft. on center for other woody plants, depending on average height and width at maturity
Acer macrophyllum / Big Leaf Maple		
Ceanothus thyrsiflorus / California Lilac		
Gaultheria shallon / *Salal*		
Ribes sanguineum / Pink Flowering Currant		
Rubus parviflorus / Thimbleberry		
Rubus spectabilis / Salmonberry		
Rubus ursinus / California Blackberry		
Herbaceous Species		
Anthoxanthum occidentale / Vanilla Grass	327 Estimated Plants	3 to 4 ft. on center
Polystichum munitum / Western Sword Fern		

Table 3. Potential planting palette for wetland creation area

Scientific Name	**Common Name**	**Quantity needed for initial planting**	**Planting Densities**
Revetment Planting			
Carex obnupta	slough sedge	To be determined	1 to 3 feet on center
Juncus effusus ssp. *pacificus*	Pacific rush		
Juncus patens	common rush		
Juncus xiphioides	iris-leaf rush		
Oenanthe sarmentosa	water parsley		
Scirpus microcarpus	small-fruited bulrush		
Veronica americana	American brooklime		

c) Proposed Revegetation Areas

Proposed revegetation for impacts to riparian vegetation will occur within a 0.216 acre area along the north east side of SR 1 adjacent to Jack Peters Creek (Figure 1). This area would be regraded to a stable slope during construction to adjust for the adjacent widening and realignment of SR 1. Run-off from the adjacent highway and the developed residential areas upslope from the riparian planting area currently pools at the base of the slope and flows into Jack Peters Creek. Planting this area in riparian vegetation will enhance groundwater infiltration, filter fertilizer run-off from directly upslope residential lawns, filter roadway run-off pollutants, and provide important structure for the multitude of wildlife species that utilize the adjacent freshwater and marine waters.

Proposed mitigation for wetland impacts includes recontouring roadside ditch and seep wetlands and relocating an intermittent drainage on-site. Estimated impacts to wetlands of 0.063-acre and non-wetland waters of 0.004-acre will be mitigated on-site at a 1:1 ratio, or 0.067-acre. Additional off-site mitigation to compensate for temporal loss of function to aquatic resources will be completed via preservation at Saunder's Landing

Proposed revegetation for impacts to grand fir and bishop pine SNC include reforestation of 2.22 acres of Grand Fir Forest within the grand fir reforestation polygons identified in Figure 2. These polygons are adjacent to SR 1 and within the Caltrans ROW. The existing plant communities within each reforestation polygon range from areas of open ruderal/invasive plant cover to areas of non-native forest (e.g., Monterrey cypress and blue gum eucalyptus). Non-native plant cover would be removed during construction to a level suitable for reforestation and ongoing weed management during the 5-year maintenance period. Any locally native trees and large shrubs within non-native forested areas will not be marked for removal.

With agreeance from CDFW, Caltrans will not plant bishop pine within the reforestation polygons, and instead focus efforts on reforesting with grand fir. In order to protect the safety of the traveling public, Caltrans policy prohibits the roadside planting of bishop pine within coastal Mendocino County due to the prevalence of both pitch canker (include scientific name, at least the genus) (a non-native pathogen) and the associated "bishop pine decline". Bishop pine decline is already prevalent in the stands of bishop pine within the area of project impacts, and many mature bishop pine individuals within the adjacent ROW are in poor health or dead (see appendix photos___). Both bishop pine and grand fir co-occur within the construction disturbance areas and vacillate between

which species is more dominant within the forest stand. Both species support a similar assemblage of plant species in the understory.

To account for safety and maintenance, tree planting will occur outside of the "clear recovery zone"—which is a required 20-foot, tree-planting setback from the white fog line on the traveled road surface. Plantings within the clear recovery zone will consist of herbaceous species and shrubs. The exact location for installing each plant within revegetation areas will be determined in the Design phase by a Caltrans Revegetation Specialist and/or Landscape Architect and will be included in construction contract documents (i.e., plans). Additionally, to avoid potential conflicts with tall vegetation and bridge maintenance and inspection, taller tree species that could reach the height of the bridge deck will be installed with on-center spacing that is at least 20 feet from the drip line of the bridge, or the minimum spacing requested by the Caltrans Maintenance and Structures Inspector. Shorter trees, shrubs, and herbaceous plants may be installed under and closer to the bridge.

d) Planting and Maintenance Contract and Duration

Revegetation planting and maintenance, including watering, weeding, and protecting resprouting native vegetation and volunteers, will be contracted to and performed by the California Conservation Corps (CCC), with oversight by a Caltrans Revegetation Specialist, for the duration of the 5-year maintenance and monitoring period. Hydroseeding of the wetland creation area will be conducted by the Contractor during Construction.

e) Cultural/Tribal Resources

The Caltrans Revegetation Specialist has coordinated with the Senior Archaeologist. The Senior Archaeologist confirmed that cultural resources would not be impacted by revegetation activities.

6) Implementation and Maintenance Schedule

a) Hydroseeding of created 3-parameter wetland will occur during the construction period using native wetland seed appropriate to the region. If additional planting is needed to meet the wetland success criteria, or to augment plant diversity, then those plants will be installed as needed during the five-year revegetation monitoring period. Additional planting will occur during the dormant season.

b) ***Planting*** will occur within approximately one year from completion of construction. To minimize plant stress, container plants will be installed at a time when plants are dormant (i.e., typically November-March). Replacement planting, if needed, will occur during the dormant season, generally a year after the initial planting.

c) ***Watering*** will be conducted during the first two dry seasons following each planting (typically mid-May through October or November, approximately every other week), and/or any extensive dry period during the first two years following initial planting and replanting. In cases where a minimal percentage of plants (i.e., generally, up to 20%) need to be installed in Years 3 or 4 of monitoring to ensure that the success criterion is met, watering will occur for 2 years after planting for the supplemental plants only. Because the supplemental planting is a minimal percentage of plants (i.e., generally, up to 20%), Caltrans will not be required to maintain and monitor the site for two additional years beyond the last watering of the supplemental plants, as long as the site has met the success criterion at the end of the monitoring period, and the supplemental plants appear healthy and established.

d) ***Weeding*** will be conducted via hand and/or mechanical methods prior to and during the monitoring period to help installed and native volunteer and resprouting plants successfully establish. Weeding will occur within all revegetation areas and any adjacent areas within Caltrans ROW, where feasible, to maximize ecological success of the restoration efforts. No herbicides will be used on-site throughout the maintenance and monitoring period.

7) Monitoring Methods, Success Criteria, and Reporting

a) Monitoring Methods and Schedule:

i) ***Photo points:*** Prior to construction, reproducible photo points will be established in the revegetation areas. Photo points will visually indicate native plant survival and re-establishment over the five years of monitoring. Photo points may be reestablished prior to planting to account for changes in the landscape due to construction and to provide the best view of revegetation areas.

ii) ***Survival counts of native woody riparian plants in all planted areas:*** Census monitoring will be conducted after initial planting to assess establishment of native plants in the revegetation areas (frequency discussed below). Installed, volunteer, and resprouting native woody riparian plants that are alive during monitoring will be

counted, by species. Establishment of volunteer and resprouting native species will be included in the total plant count since these plants indicate revegetation is successfully occurring and the site is self-sustaining. Additionally, presence of volunteer and resprouting native plants will affect whether and how much replanting is needed, since overplanting is a concern.

iii) ***Sapling counts in grand fir planting areas:*** the number of living grand fir saplings will be measured every year to assess reforestation progress. Additionally, natural recruitment of bishop pine and grand fir seedlings will count towards this criterion.

iv) ***Wetland creation monitoring:***

(1) Predominance of hydrophytic vegetation: Absolute percent cover and wetland rating will be recorded for all plant species in each plant stratum and relevant plot size to demonstrate the wetland creation area is meeting the predominance of hydrophytic vegetation parameter for the USACE wetland definition. See the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (WMVC Supplement) (USACE 2010) for the protocol and parameters for assessing predominance of hydrophytic vegetation.

(2) Hydrology monitoring: Wetland hydrology field indicators will be monitored to confirm the wetland creation area is meeting the hydrology parameter for the USACE wetland definition using the parameters and protocols for assessing wetland hydrology (WMVC Supplement; USACE 2010).

(3) Year 5 hydric soil assessment: Hydric soil field indicators will be reviewed and recorded in Year 5 using the USACE parameters and protocols for assessing hydric soil indicators (WMVC Supplement; USACE 2010). Hydric soils are historically lacking at the creation site and would need to generate through natural processes after initial implementation of wetland creation; however, it can take many years for hydric soils to develop, depending on a variety of conditions and, as such, hydric soils may not be present in Year 5.

v) ***Schedule:*** Caltrans will monitor annually. Survival counts will be monitored to assess progress toward the success criteria and to identify remedial or adaptive management measures that may be required. Photo monitoring will also occur annually. First year monitoring may take place in the same calendar year as the initial planting as long as

installation occurs before March 1st. First year monitoring may also occur in the same calendar year as initial planting if growing conditions at the planting site are suitable for planting after March 1st (e.g., plants are dormant) and plants appear to be successfully establishing near the end of the first growing season. If the first monitoring occurs in the same calendar year, it will occur at the end of summer to allow establishment of plants during the growing season. If monitoring occurs at least one year after planting, it will occur between May and the end of summer. Final monitoring in Year 5 will assess whether the success criteria have been met.

b) Success Criteria i) ***Year 5 success criteria***

(1) In all revegetation areas, the number of surviving woody trees and shrubs will be equal to or greater than the number of trees and shrubs cut during construction.

(2) In the grand fir forest planting areas, at least 75% of installed seedlings will be alive during year 5.

(3) Wetland creation area:

(a) Predominance of hydrophytic vegetation: At least 65 continuous square feet of wetland creation area will have a predominance of hydrophytic vegetation, according to the WMVC Supplement (USACE 2010). Wetland-rated plants are those with a rating of Facultative (FAC), Facultative Wetland (FACW), or Obligate (OBL).

(b) Wetland hydrology in the wetland creation area will be indicated by at least one primary or two or more secondary hydrology indicators, per the protocol for assessing wetland hydrology as stated in the WMVC Supplement (USACE 2010).

(c) Hydric soil in the wetland creation area will be demonstrated by at least one hydric soil indicator, per the protocol for assessing hydric soil as stated in the WMVC Supplement (USACE 2010). However, there is a possibility that a hydric soil indicator might not be present, due to the time required for these indicators to develop in wetland soils. If a hydric soil indicator is lacking, but both hydrology and hydrophytic plant indicators are present, then the wetland creation will be considered to have met the success criteria for 3-parameter wetland.

ii) ***Potential early release:*** If any of the success criteria are met prior to Year 5, Caltrans may request to be released from monitoring and reporting requirements for the success criterion that was met.

c) Revegetation monitoring reports

i) ***Revegetation monitoring reports for Years 1, 3, and 5*** will be submitted to all agencies requiring submission of revegetation monitoring reports. Monitoring reports will include a summary of monitoring results, discuss whether the revegetation areas appear to be on a trajectory toward meeting the success criteria, and will include any proposed remedial measures to help ensure success. Monitoring reports will also include photo points. The final monitoring report will discuss whether the success criterion was met and whether remedial actions are needed, or revegetation is considered complete.

8) Remedial Measures

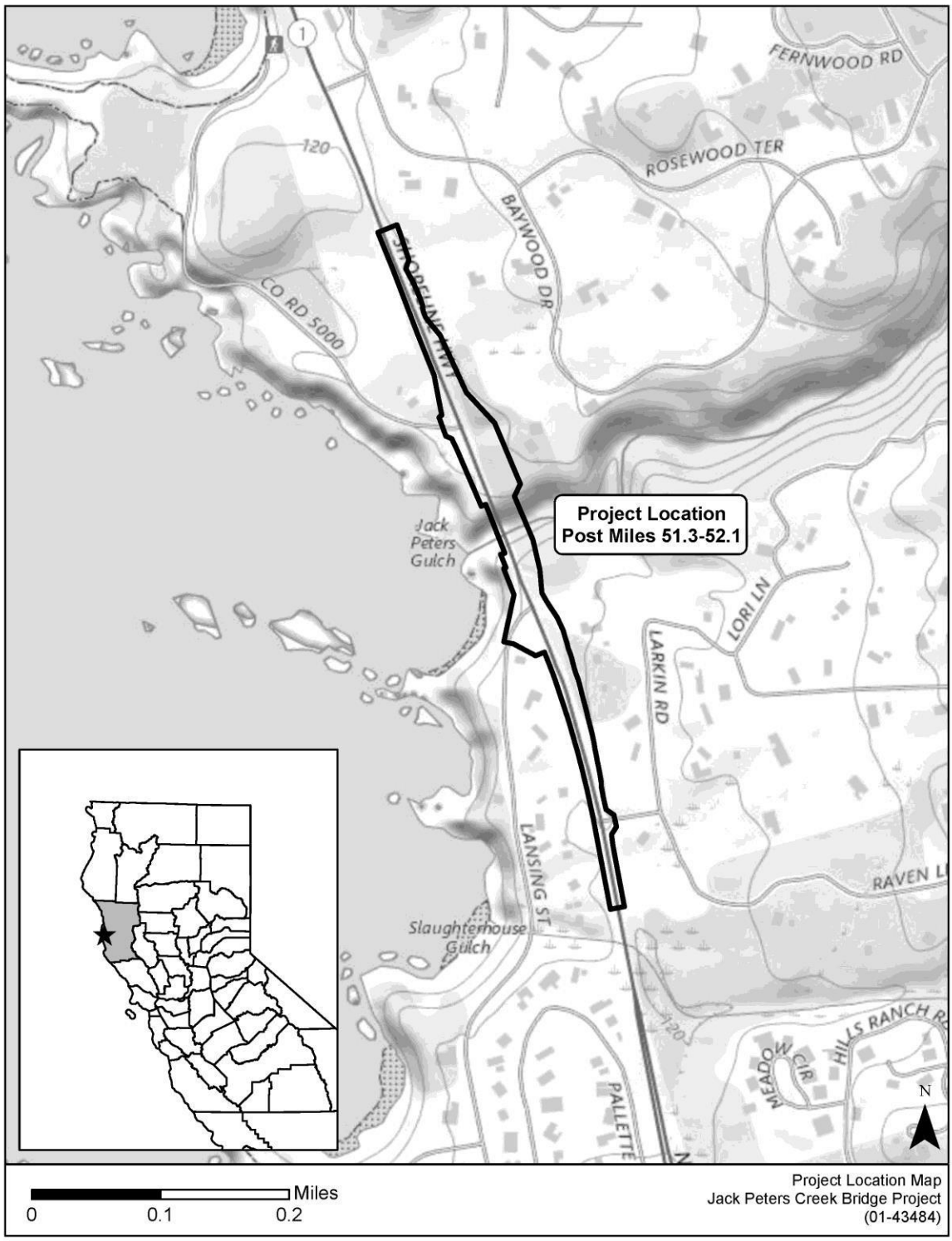
If the success criteria are not met, the Revegetation Specialist will assess potential reasons and develop remedial measures or adaptive management strategies to correct issues. Caltrans will coordinate with the permitting agencies that require revegetation and reporting to discuss success criteria issues, propose solutions, and determine the best course of action.

Potential remedial measures may include additional seeding and/or plant installation, transplanting/dividing existing plants, additional watering and/or weeding, and other standard measures that provide additional plants or cover, as needed.

Any remedial measures that are implemented will be discussed in monitoring report(s).

APPENDICES

Appendix A. Project Maps


FERNWOOD RD
ROSEWOOD TER
BAYWOOD DR
CO RD 5000
120
Project Location
Post Miles 51.3-52.1
Jack Peters Gulch
LORI LN
LARKIN RD
LANSING ST
Slaughterhouse Gulch
PALLETTE
MEADOW CIR
HILLS RANCH RD
N
Miles
0
0.1
0.2
Project Location Map
Jack Peters Creek Bridge Project
(01-43484)

MEN 1 R52.181

MEN 1 R52.081

MEN 1 R51.981

County Road 500D

Legend

ESL - project footprint

Upland Grand Fir Forest Planting

N

0 100 200 400 Feet

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community


MEN 1 51.881
Lansing Street
MEN 1 R51.456
MEN 1 R51.356
Legend
ESL - project footprint
Upland Grand Fir Forest Planting
N
0
90
180
360
Feet
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community


MEN 1 51.881
Lansing Street
MEN 1 R51.456
MEN 1 R51.356
Legend
ESL - project footprint
Upland Grand Fir Forest Planting
N
0
90
180
360
Feet
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

SAUNDER'S LANDING OFF-SITE DRAFT HABITAT MITIGATION AND MONITORING PLAN

for Cleone Shoulder Widening Project
EA / EFIS
01-0G600 / 0117000026
State Route 1, Post Miles 65.13 – 65.49
in Mendocino County, California

for Jack Peters Creek Bridge Project
EA / EFIS
01-43484 / 0117000133
State Route 1, Post Miles 51.3 – 52.1
in Mendocino County, California

for Elk Creek Bridge Replacement Project
EA / EFIS
01-0E110 / 0113000125
State Route 1, Post Miles 31.35 – 31.35
in Mendocino County, California

Picture credit: RCLC

December 7, 2021

(Revised September 2022)

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

STATE OF CALIFORNIA
Department of Transportation—North Region Environmental
1656 Union Street
Eureka, CA 95501
707-492-0158

LIST OF PREPARERS

Prepared By: _____ Date: _____

Timothy Nelson, Mitigation Specialist
North Region Environmental – Mitigation Analysis and Planning
Caltrans District 1
1656 Union Street
Eureka, CA 95501
(707) 492-0158
Timothy.Nelson@dot.ca.gov

Reviewed By: _____ Date: _____

Denise Walker-Brown, Mitigation Specialist
North Region Environmental – Mitigation Analysis and Planning
Caltrans District 1
1656 Union Street
Eureka, CA 95501
(707) 492-0004
Denise.Walker-Brown@dot.ca.gov

Approved with Revisions By: _____ Date: _____

Stephanie Frederickson, Acting Branch Chief
North Region Environmental – Mitigation Analysis and Planning
Caltrans District 1
1656 Union Street
Eureka, CA 95501
(707) 496-6244
Stephanie.Frederickson@dot.ca.gov

ACKNOWLEDGMENT

The California Department of Transportation (Caltrans) and Mendocino Land Trust (MLT) acknowledge and agree to protect the mitigation parcels (Saunder's Landing) in perpetuity consistent with the requirements for the Open Space Deed Restriction. Specific conditions pertaining to the protection of the parcels in perpetuity include, but may not be limited to, the following:

- No development as defined in Section 30106 of the Coastal Act, shall occur on the mitigation parcel except for the following types of development if approved under separate Coastal Development Permit (CDP) authorization: (a) grazing for habitat enhancement purposes consistent with CDP #1-22-0446 Special Condition 9-A-v; (b) activities associated with habitat maintenance, enhancement, and restoration consistent with this Habitat Mitigation and Monitoring Plan; and (c) construction and maintenance of the California Coastal Trail and associated features as a nature-study resource dependent use.
- MLT acknowledges their responsibility as long-term manager of the Saunder's Landing mitigation site and will complete tasks as outlined and budgeted in the Property Analysis Record.
- MLT may transfer or assign the ownership of Saunder's Landing, and the associated use, management, and maintenance responsibilities of the parcels only with the prior written consent of Caltrans, the State Coastal Conservancy, and the permitting agencies including the California Coastal Commission, the North Coast Regional Water Quality Control Board, and the California Department of Fish and Wildlife. MLT shall remain fully liable for its duties and responsibilities prior to any transfer.
- The Deed Restriction will run with the land in favor of the People of the State of California, binding successors and assigns of the landowner in perpetuity.

Signed By: _____ Date: _____

Stephanie Frederickson

Mitigation Analysis and Planning, Acting Branch Chief – Caltrans District 1

Signed By: _____ Date: _____

Conrad Kramer

Executive Director – Mendocino Land Trust

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

Chapter 1. Introduction

The following Off-Site Habitat Mitigation and Monitoring Plan (HMMP) is for the California Department of Transportation (Caltrans) for the purpose of offsetting coastal wetland impacts associated with the Cleone Shoulder Widening Project (01-0G600), Jack Peters Creek Bridge Widening (01-43484), and Elk Creek Bridge Replacement (01-0E110) projects, referred to collectively as "Roadway Projects." A brief description of each project is provided below and vicinity/site maps can be found in Appendix A, Project Maps.

- Cleone Shoulder Widening Project is located on Mendocino State Route (SR) 1 in Mendocino County between post miles (PM) 65.13 and 65.49. The purpose of the project is to address a higher than statewide average collision rate within the project limits and improve safety conditions along this portion of SR 1. Caltrans proposes to widen shoulders to four feet and improve drainage features on SR 1 within the Project limits (Caltrans 2020).

- Jack Peters Creek Bridge Project is located on Mendocino SR 1 in Mendocino County between PMs 51.3 – 52.1. The purpose of this project is to bring the bridge up to current design standards by upgrading bridge rails and widening the existing structure (Caltrans 2021a).

- Elk Creek Bridge Replacement Project is located on Mendocino SR 1 in Mendocino County at PM 31.5. Caltrans proposes to replace the structure as the bridge and approach roadway have geometric and structural deficiencies including narrow shoulder widths, outdated bridge railings, and raised concrete areas adjacent to the shoulders that are not compliant with the Americans with Disabilities Act (ADA). There is also scouring occurring around the north pier and abutment that threaten the integrity and stability of the bridge site (Caltrans 2021b).

Through the environmental process, preferred alternatives were assessed and the Least Environmentally Damaging Practicable Alternative (LEDPA) was chosen. Impacts for the Roadway Projects include both temporary and permanent impacts to riparian habitat regulated by the California Coastal Commission (CCC), the California Department of Fish and Wildlife (CDFW) and the North Coast Regional Water Quality Control Board (NCRWQCB); waters of the United States (U.S.) and State (wetlands and other non-wetland waters) regulated by the U.S. Army Corps of Engineers (USACE), NCRWQCB, CDFW, and

CCC; and Environmentally Sensitive Habitat Areas (ESHA) and Sensitive Natural Communities (SNC) regulated by CCC and CDFW.

1.1 Project Impacts and Proposed Mitigation

The purpose of this HMMP is to describe Caltrans' mitigation approach for impacts associated with the Roadway Projects. These impacts include waters of the U.S./State including non-wetland waters and 3-parameter wetlands under the jurisdiction of Section 401/404 of the Clean Water Act (CWA), coastal wetlands under the protection of the California Coastal Act (CCA), State riparian areas, and upland/non-riparian SNC/ESHAs including grand fir (*Abies grandis*) and bishop pine (*Pinus muricata*) forests, and coastal brambles (*Rubus* sp.) shrubland (Table 1). In general, wetlands of at least 1-parameter, hydrology as the primary indicator, can be considered a wetland under the jurisdiction of the CCC.

The CCC typically requires a 4:1 creation/restoration mitigation ratio for temporal (impact lasting longer than one year) and permanent impacts to aquatic resources that are mitigated through in-kind replacement. For riparian habitat or ESHA, CCC will typically require a 3:1 creation/restoration mitigation ratio for temporal and permanent impacts. Out-of-kind mitigation, including but not limited to out-of-kind preservation and restoration activities, are also viable mitigation options but regulatory agencies typically require a higher mitigation ratio. Caltrans evaluated numerous alternatives to satisfy mitigation obligations for the Roadway Projects (Section 1.2 Table 17). Several issues including, but not limited to, the extent of available right of way (ROW) at project locations and severely limited off-site mitigation options in the Coastal Zone of the Big-Navarro-Garcia Hydrological Unit Code (HUC) 8 (18010108) watershed, have resulted in Caltrans selecting property acquisition/preservation and restoration at Saunder's Landing (formerly referred to as the "LaBoube Parcels," APNs 142-010-53 & 142-010-54) (Appendix A) as the best option to satisfy compensatory mitigation requirements for coastal wetland impacts.

For this HMMP, impacts to coastal wetland, waters of the U.S./State, riparian habitats, and SNC/ESHAs will be mitigated on-site within the limits of the Roadway Projects via in-kind replacement and/or off-site at Saunder's Landing through substantial wetland restoration and/or preservation as described in Chapters 4 and 5 of this HMMP. Mitigation activities will be carried out either through a Landscape Contract or by Caltrans Mitigation Teams Contract. Mitigation work will be overseen and quality control will be conducted by Caltrans Revegetation or Mitigation Specialists, Landscape Architects, or Project Biologists.

Table 1. Summary of Estimated Impacts Associated with Roadway Projects

Jurisdictional Feature	Habitat Type[1]	Impacts[2] (Acres)		
		Temporary	Temporal	Permanent
PROJECT 1: Cleone Shoulder Widening Project (01-0G600)				
CCA Wetland	Slough Sedge (*Carex obnupta*) – 1-parameter coastal wetland	-	-	0.008
	CCA Wetland Total	**-**	**-**	***0.008***
Clean Water Act (CWA) Wetland (Federal/State)	Slough Sedge – Palustrine-Emergent Wetland (PEM1C)	-	-	0.014
Non-Wetland Waters (Federal/State)	Intermittent Drainages (R4UB4)	-	-	0.038
	Waters of the U.S./State Total	**-**	**-**	***0.052***
	Project 1: Cleone Shoulder Widening Project Impact Total	**-**	**-**	**0.060**
PROJECT 2: Jack Peters Creek Bridge Project (01-43484)				
SNC/ESHA	Grand Fir Forest (*Abies grandis*)	-	0.210	0.088
	Bishop Pine Forest (*Pinus muricata*)	-	0.714	0.078
	SNC/ESHA Total	**-**	***0.924***	***0.166***
Riparian	Red Alder Forest Alliance (*Alnus rubra*)	-	0.067	0.005
	Riparian Total	**-**	***0.067***	***0.005***
CWA Wetland (Federal/State)	Palustrine Emergent Wetland Ditch (PEM) and Palustrine Scrub-shrub Seep Wetland (PSS1)	-	-	0.063
Non-Wetland Waters (Federal/State)	Intermittent Tributary to Jack Peters Creek (R4SB1)	-	-	0.004
	Waters of the U.S./State Total	**-**	**-**	***0.067***
	Project 2: Jack Peters Creek Bridge Project Impact Total	**-**	**0.991**	**0.238**

[1] Feature types for three-parameter wetlands are identified by their corresponding system, subsystem and class in accordance with Classification of Wetlands and Deepwater Habitats of the United States (FGDC 2013).
[2] Caltrans defines temporary impacts are those in which restoration begins within one year of the first date of impact. Temporal impacts occur when restoration begins more than one year after the first date of impact and there is a temporal loss of function. Permanent impacts are impacts that are not restorable.

PROJECT 3: Elk Creek Bridge Replacement Project (01-0E110)				
SNC/ESHA	Shrubland Alliance – Coastal Brambles (*Rubus parviflorus, R. spectabilis, R. ursinus*), non-riparian	-	0.137	0.057
	SNC Totals	**-**	***0.137***	***0.057***
Riparian	Red Alder Forest Alliance	-	0.500	0.0478
	Sitka Willow Thicket (*Salix sitchensis*)	-	0.133	0.0358
	Shrubland Alliance – Coastal Brambles (*Rubus parviflorus, R. spectabilis, R. ursinus*)	-	0.104	0.053
	Riparian Above OHWM Subtotal	-	*0.737*	*0.137*
	Sitka Willow Thicket Wetland (below OHWM)	-	0.004	-
	Red Alder Forest Alliance Wetland (Below OHWM)	-	0.029	0.001
	Riparian Below OHWM Subtotal	-	*0.033*	*0.001*
	Riparian Totals	**-**	***0.770***	***0.137***
CWA Wetland (Federal/State)	Wetland Ditch (*Juncus patens*) Prov. Herbaceous Alliance	-	-	0.002
Non-Wetland Waters (Federal/State)	Perennial Stream (Elk Creek); Riverine, Freshwater Tidal Water (R1UBV)	0.190	-	-
	Waters of the U.S./State Totals	***0.190***	**-**	***0.002***
	Project 3: Elk Creek Bridge Replacement Project Impact Totals	**0.190**	**0.907**	**0.196**

The following sections provide details associated with the Roadway Projects, on-site mitigation and revegetation efforts, and proposed off-site mitigation.

Project 1: Cleone Shoulder Widening (01-0G600) Discussion

Project Impacts

Areas within the project's Environmental Study Limit (ESL)[3] and Biological Study Area (BSA)[4], possess hydrogeological and climate conditions that result in various aquatic features

[3] The Environmental Study Limits (ESL) refers to the project limits where direct ground disturbance may occur from all proposed activities.
[4] The Biological Study Area (BSA) varies for different resources addressed for a given project but always includes the project limits or ESL where ground disturbance may occur and an appropriate buffer, as required, to analyze indirect effects to adjacent biological resources.

and associated vegetation. Many of these features are recognized as potentially jurisdictional by the U.S. and the State. Wetland delineations conducted for this project indicated that the ESL has several potentially jurisdictional water features, including palustrine (freshwater) wetlands and roadside drainage ditches (Appendix A, Cleone Waters of U.S./State Map).

Wetlands present within the ESL include one three-parameter palustrine (freshwater) wetland (PW-1) with persistent emergent vegetation and seasonally flooded (PEM1C). Dominant species consisting of slough sedge (*Carex obnupta*), soft rush (*Juncus effusus*), and small-fruited bulrush (*Scirpus microcarpus*). This wetland is adjacent to a garage structure and appears to be driven by anthropogenic interference as saturation from a leaky pump next to the garage was evident during wetland delineation studies. This in combination with the naturally high groundwater table in the area has resulted in the presence of this small wetland feature. Additionally, one coastal wetland (CW-1) is present and appears to be a transition zone between PW-1 and the adjacent upland terrain. Dominant species include slough sedge, soft rush, and tall coast plantain (*Plantago subnuda*). Approximately 0.014-acre of 3-parameter wetlands and 0.008-acre of 1-parameter wetlands would be permanently impacted from road widening activities (Table 1).

Three non-wetland waters of the U.S. and State occur within the ESL—features OW-1, OW-2, and OW-3. These non-wetland waters within the ESL are intermittent drainages, meaning the area below the Ordinary High-Water Mark (OHWM) is either seasonally flooded or seasonally flooded/saturated. These three intermittent drainages with an unconsolidated bottom surface (R4UB4) (Cowardin 1979) are relatively narrow and convey ground water and stormwater runoff from the east towards the southwest, eventually terminating at the culvert outlet where the culvert crosses the highway at PM 65.16. Approximately 0.038-acre of non-wetland waters of the U.S./State would be permanently impacted from road widening activities.

On-site Mitigation and Revegetation

On-site mitigation/revegetation to be completed at the Cleone Shoulder Widening project is extremely limited by the remaining ROW available following project completion. Currently, within the Cleone Shoulder Widening project limits, Caltrans ROW is constricted by both private residences and businesses. Given that this project is a safety project with the intent to widen the shoulders to reduce collisions, the availability to conduct on-site mitigation/revegetation will be further constrained when shoulders are widened by the proposed four feet. As a result, no on-site mitigation is proposed to occur and revegetation efforts (Caltrans 2021c) will include the following activities:

Erosion Control

Upon completion of construction, in the area where ground disturbance occurs, an erosion control seed mix using regionally appropriate native species and a non-persistent annual grass (i.e., common barley, *Hordeum vulgare*) will be utilized in bare soil areas. Erosion control measures are specifications managed by Construction and Landscape Architecture and by Maintenance after construction is complete and are not considered part of the revegetation success criteria.

Proposed Restoration Areas

The riparian area affected by construction activities is both outside of and within the existing Caltrans ROW at PM 65.16, at the outlet side only. This area will be monitored to assess the resprouting and re-establishment of native riparian vegetation. The impact area outside of the existing Caltrans ROW will also be monitored for re-establishment of native riparian vegetation, pending formal approval by private landowners (approval process in progress). If the private landowner will not allow monitoring and maintenance activities of affected area outside of the existing Caltrans ROW, then disturbed soils will receive a native erosion control seed mix. The area is dominated by native species such as Douglas spiraea and California blackberry (*Rubus ursinus*).

Plant Species and Quantities

No planting is proposed for this project. Natural vegetation recruitment (volunteers) and resprouting native vegetation is anticipated and will be incorporated into consideration of the revegetation goal. Douglas spiraea is a dense, clump-forming shrub which spreads by suckers, forming colonies over time, and will readily spread and reestablish following disturbance in this area.

If vegetation is cut at ground level prior to construction, then resprouting vegetation will be protected from herbivory and monitored for continued survival and re-establishment.

Maintenance Contract and Duration

Maintenance, including weeding and protecting resprouting native vegetation, would be performed by Caltrans staff and/or the California Conservation Corps with oversight by a Caltrans Revegetation Specialist, for three years. Monitoring for revegetation efforts will include reproducible photo points at established revegetation areas and annual ocular estimates for volunteer and resprouting upland native woody riparian vegetation. Success criteria by Year 3 will include the following:

- At least 85% of the baseline cover of woody riparian plants cut and/or removed for construction activities will be alive at the conclusion of monitoring in Year 3. Volunteer and resprouting plants will contribute to the plant cover estimate.

- Percent cover of Himalayan blackberry (*Rubus armeniacus*) will be less than or equal to the preconstruction baseline estimate of 30%.

Proposed Off-site Mitigation

After developing an on-site restoration plan, it was determined that not all temporal and permanent project impacts to waters of the U.S./State could be mitigated on-site, thus requiring off-site mitigation. To mitigate for aquatic resources impacted by the project implementation, Caltrans typically proposes mitigation at a 4:1 minimum creation/restoration mitigation ratio within the coastal zone. This ratio typically includes both the minimum "no net loss" of impacted aquatic resources and incorporates the temporal loss associated with the loss of function over time. Given the extremely limited options for Caltrans to complete off-site permittee-responsible mitigation (PRM) in the Coastal Zone of the Big-Navarro-Garcia HUC 8 watershed, Caltrans proposes to satisfy mitigation needs for the Cleone Shoulder Widening project through restoration and preservation activities at the selected off-site location, Saunder's Landing. Details pertaining to resources present at Saunder's Landing for which Caltrans is seeking mitigation value for can be found in Chapter 2.

Through discussions with the Redwood Coast Land Conservancy (RCLC), the State Coastal Conservancy (SCC), and the Mendocino Land Trust (MLT), Caltrans identified Saunder's Landing as a potentially viable mitigation option given the existing collaboration with local and State partners, the valuable sensitive resources onsite, and the willingness of the owner(s) to sell the property (Appendix B, Letters of Mutual Interest). Additionally, Caltrans worked with the SCC to update a 2019 land appraisal in order to provide SCC funding to acquire the parcels for MLT (appraisal updated April 2022). Caltrans will enter into a Mitigation Agreement with SCC and MLT that will outline provisions for the transfer of 100% of funds required for the purchase of Saunder's Landing for MLT (Appendix C). MLT has agreed to develop a long-term management plan that would include, but may not be limited to, recreation, education, and public access in addition to preservation and continued restoration of sensitive resources at the site. RCLC will support MLT in long-term management plan development. Caltrans will enter into a separate Mitigation Agreement with MLT and National Fish and Wildlife Foundation (NFWF) to establish an endowment account for the long-term management of the parcel by MLT. Estimated funding amount is outlined in the attached Property Analysis Record (PAR) in Appendix D and is subject to

change as tasks are finalized. For Caltrans, the following activities would be accomplished to satisfy the mitigation requirements for impacts occurring at the Cleone Shoulders Widening project:

- **Off-site Mitigation for CCA Wetlands - Substantial Wetland Restoration at Saunder's Landing**: Restoration of a 0.317-acre CCA wetland will be completed through the removal of non-native, invasive species including iceplant (*Carpobrotus chilensis)* and replanting/reseeding with regionally appropriate native wetland species.

- **Off-site Mitigation for Waters of the U.S./State – Preservation at Saunder's Landing**: Preservation of approximately 0.535-acre of State and federal jurisdictional wetlands and non-wetland waters at Saunder's Landing would occur as a result of acquisition of the parcel for MLT.

Appendix E documents how Caltrans assessed and proposed mitigation ratios for impacts associated with the Project. For the Cleone Shoulder Widening Project, off-site wetland restoration value was based on the extent of invasion of iceplant on-site. The CCA wetland is approximately 0.350-acre in size and is located along the western bluff edge which poses a safety risk to restoration crews. For this reason, Caltrans plans to only treat approximately 0.317-acre of iceplant and leave a small buffer of vegetation that has been deemed unsafe to remove due to being located near or over the bluff edge (Figure 1). Future long-term management of the wetland will include maintenance in perpetuity via an endowment, therefore this small amount of iceplant will be isolated to the bluff edge and may be treated in the future by MLT through a variety of techniques including but not limited to, covering, herbicides, etc. The CCC Mitigation Worksheet for the Cleone Shoulder Widening Project (Appendix E) shows that Caltrans is proposing to mitigate for impacts to CCA wetlands (0.008-acre) at a ~39.5:1 mitigation ratio, far more than the 8:1 ratio typically required by the CCC.

Additional off-site mitigation activities for the Cleone Shoulder Widening Project will include preservation of waters of the U.S./State that will be mitigated at a 10.3:1 mitigation ratio (Appendix E). Due to the limited amount of waters of the U.S/State (non-wetland waters) available at Saunder's Landing (0.130-acre), and in combination with 0.036-acre need for Jack Peters Creek Bridge Project, the available amount left to be applied to non-wetland waters impacts for the Project is 0.094-acre. The remaining mitigation need (0.297-acre) is proposed to be satisfied via preservation of high quality, three-parameter wetlands associated with Hearn Gulch (Red Alder Forest CWA wetlands, Figure 6). As a result, the

CCC Mitigation Worksheet for the Cleone Shoulder Widening Project shows that of the total 0.535-acre of off-site waters of the U.S./State mitigation, 0.441-acre of three-parameter wetlands and 0.094-acre of non-wetland waters will be preserved as mitigation to compensate for Project impacts to waters of the U.S./State at the Cleone Shoulder Widening Project.

Figure 1. Extent of iceplant invasion at CCA wetland on Saunder's Landing.

Project Mitigation Summary

In summary, according to the CCC Mitigation Worksheet, the following mitigation ratios and acreages are proposed to satisfy compensatory mitigation requirements for the Cleone Shoulder Widening Project. Tables 2-4 below provide an overview of results from the CCC Mitigation Worksheet and anticipated mitigation requirements for each impacted habitat at the Cleone Shoulder Widening Project.

CCA Wetland Impacts: Proposed restoration of a 0.317-acre CCA wetland invaded by iceplant to mitigate for 0.008-acre of impacts to CCA wetlands at the Project site. This is equivalent to a ~39.6:1 ratio for the proposed CCA wetland restoration mitigation.

Table 2. CCA Wetland Impacts and Proposed Mitigation for Cleone Shoulder Widening Project.

Proposed Mitigation	Offsite Mitigation at Saunder's Landing Waters of the U.S./State (wetlands) Preservation
Project Impacts (acres)	**0.008**
Mitigation Ratio Typically Required	8:1
Mitigation Proposed (acres)	0.317

Waters of the U.S./State (wetlands) Impacts: Proposed preservation of 0.144-acre of waters of the U.S./State (wetlands) for 0.014-acre impacts would provide 100% (or 0.014-acre of 0.014-acre of Project impacts) of the required mitigation for waters of the U.S./State (wetlands).

Table 3. CWA Wetland Impacts and Proposed Wetland Mitigation for Cleone Shoulder Widening Project.

Proposed Mitigation	Offsite Mitigation at Saunder's Landing Waters of the U.S./State (wetlands) Preservation
Project Impacts (acres)	**0.014**
Mitigation Ratio Typically Required	10.3:1
Mitigation Proposed (acres)	0.144

Waters of the U.S./State (non-wetland waters) Impacts: Proposed preservation of 0.094-acre of waters of the U.S./State (non-wetland waters) for 0.038-acre of impacts would provide 24% (or 0.009-acre of 0.038-acre of Project impacts) of the required mitigation for waters of the U.S./State (non-wetland waters). Caltrans proposes to cover this additional

mitigation through preservation of waters of the U.S./State (wetlands) at Saunder's Landing at a 10.3:1 ratio, or 0.297.

Table 4. Non-Wetland Waters Impacts and Proposed Non-Wetland Waters Mitigation at the Cleone Shoulder Widening Project.

Proposed Mitigation	Offsite Mitigation at Saunder's Landing	
	Waters of the U.S./State (non-wetland waters) Preservation	Waters of the U.S./State (wetlands) Preservation
Project Impacts (acres)	**0.038**	
Remaining Impacts (acres)		**0.029**
Mitigation Ratio Typically Required	10.3:1	10.3:1
Mitigation Proposed (acres)	0.094	0.297

Details regarding the goals and objectives, implementation plan, and monitoring and reporting requirements of the proposed wetland restoration and preservation mitigation can be found in Chapters 3-5. Table 5 below provides a summary of the estimated impacts, on-site mitigation and revegetation efforts, and proposed off-site mitigation acreage for wetland restoration and waters of the U.S./State preservation to provide compensatory mitigation for Cleone Shoulder Widening Project impacts.

Table 5. Summary of Estimated Impacts for Cleone Shoulder Widening Project with Proposed On-site Offsets and Off-Site Mitigation.

Impact or Offset Description	Impacts (Acres)	On-Site Offsets and Mitigation (Acres)	Off-Site Mitigation (Acres)	Offset and Mitigation Type
Project 1: Cleone Shoulder Widening Project				
Permanent Impacts				
Total Permanent Impacts to CCA Wetlands	0.008			
Total Permanent Impacts CCA Wetlands	***0.008***			
Total Permanent Impacts to Waters of the U.S. and State (CWA Wetlands)	0.014			
Total Permanent Impacts to Waters of the U.S. and State (Non-Wetland Waters)	0.038			
Total Permanent Impacts to Waters of the U.S. and State	**0.052**			
Proposed Mitigation Off-site				
Off-site CCA Wetland Restoration at Saunder's Landing			**0.317**	Substantial wetland restoration via invasive species removal and replant/seed with native vegetation
Off-site Waters of the U.S./State Preservation at Saunder's Landing In addition to the proposed CCA wetland restoration, Caltrans also proposes to preserve aquatic resources present at the Saunder's Landing via purchase and transference of the property to the MLT.				
Off-site Waters of the U.S./State (wetlands) Preservation Mitigation at Saunder's Landing			**0.441**	Preservation of Waters of the U.S./State (wetlands); 0.144-acre CWA wetlands to be preserved to compensate for 0.014 impacts; Additional 0.297-acre of wetlands proposed to be preserved to compensate for Project impacts to non-wetland waters (see below)

Impact or Offset Description	Impacts (Acres)	On-Site Offsets and Mitigation (Acres)	Off-Site Mitigation (Acres)	Offset and Mitigation Type
Off-site Waters of the U.S./State (non-wetland waters) Preservation Mitigation at the Saunder's Landing			**0.094**	Preservation of Waters of the U.S./State (non-wetland waters); 0.094-acre non-wetland waters proposed to be preserved; Additional 0.297-acre of non-wetland waters mitigation needs proposed to be met via preservation of additional high quality, associated wetlands adjacent to Hearn Gulch (see above)

Project 2: Jack Peters Creek Bridge Project (01-43484) Discussion

Project Impacts

Wetland delineations conducted for the Jack Peters Creek Bridge Project indicated that the Project area has several potentially jurisdictional water features, including roadside drainage ditches and seep wetlands, a perennial stream, and intermittent drainages (Appendix A, Jack Peters Creek Waters of the U.S./State Map). Additionally, riparian vegetation consisting of red alder (*Alnus rubra*) with an understory of coastal brambles including thimbleberry (*Rubus parviflorus*), salmonberry (*Rubus spectabilis*), and California blackberry (*Rubus ursinus)* is found throughout the ESL and will be impacted as a result of Project activities. SNCs including grand fir and bishop pine also occur within the ESL and are anticipated to have Project impacts (Table 1). Anticipated impacts are only expected to occur to habitat features within the Project's ESL.

Wetlands present within the project limits of disturbance include three, three-parameter ditch wetlands (JP-PW1, JP-PW-2, and JP-PW3) and one seep wetland. The landscape is highly modified in the ditch wetlands; these ditches were originally created by Caltrans to convey stormwater runoff. Ditches are dry during the summer months. Many of the common plant species within the wetland ditches have some level of invasiveness, including sweet vernal grass (*Anthoxanthum odoratum*), creeping bentgrass (*Agrostis stolonifera*), velvet grass (*Holcus lanatus*), ryegrass (*Festuca perennis*), yellow glandweed (*Parentucellia viscosa*), and pennyroyal (*Mentha pulegium*). Other common species include common spikerush (*Eleocharis macrostachya*), soft rush, watercress (*Nasturtium officinale*), and slender willow herb (*Epilobium ciliatum*). Approximately 0.045-acre of roadside wetland ditches would be temporarily impacted by the project, with approximately 0.044-acre of JP-PW1 and JP-PW2 impacted by the shoulder widening needed for the widened bridge, and 0.001-acre of JP-PW3 impacted to accommodate a vegetated bioswale near the intersection of SR 1 and Lansing Street.

One potential seep wetland was found flowing from bedrock into the creek on the north bank of Jack Peters Creek within the BSA, accounting for approximately 0.018-acre. The seep contains emergent vegetation in cracks of the bedrock and coastal scrub species cover the rock face. Common species in the seep include velvet grass, giant horsetail (*Equisetum telmateia* ssp. *braunii*), seep monkeyflower (*Erythranthe guttata*), English plantain (*Plantago lanceolata*), Henderson's angelica (*Angelica hendersonnii*), and cow parsnip (*Heracleum maximum*). Approximately 0.018-acre of the seep wetland would be impacted from widening the bridge piers and forming the temporary trestle. It is anticipated that

approximately 0.003-acre of this area would be permanently impacted due to the extended northern pier. The remaining 0.015-acre portion of the seep is anticipated to naturally reestablish itself, as the seep is primarily formed within and over bedrock, with only a shallow layer of soil with hydrophytic vegetation.

Six potential non-wetland waters of the U.S. and State, including five intermittent drainages (JP-OW1 through JP-OW5) and one perennial stream (Jack Peters Creek), were found within the project area, though only one intermittent drainage (JP-OW4) would be impacted from Project activities. Common species near intermittent drainages include the invasive sweet vernal grass, Himalayan blackberry, and cape ivy (*Delairea odorata*), and non-invasive species such as red elderberry (*Sambucus racemosa*), cow parsnip, arroyo willow (*Salix lasiolepis*), giant horsetail, and non-native cabbage (*Brassica oleracea*). Approximately 0.004-acre of JP-OW4 would be impacted. Approximately 0.003-acre of this would be temporal, due to work required for the temporary trestle and falsework, and 0.001-acre would be permanent from the concrete fill of the widened pier and abutment.

Several patches of riparian vegetation, accounting for approximately 0.257-acre, were found adjacent to drainages within the BSA. Patches adjacent to Jack Peters Creek were dominated by red alder with an understory of thimbleberry, salmonberry, red elderberry, and California blackberry. While the south bank includes several mature red alders, the north bank has little forest vegetation until 60 feet upstream of the bridge. This bank and its vegetation are disturbed by landslides and the wind, which have stunted the growth of the alders. The other patches of riparian vegetation within the project area are adjacent to intermittent drainages and dominated by arroyo willow. The project would impact approximately 0.072-acre of riparian vegetation on the banks of Jack Peters Creek, upstream of the bridge, due to the temporary trestle and the extension of the bridge piers. Approximately 0.067-acre would be subject to temporal impacts from project activities, with approximately 0.046-acre from the north bank of the creek, and 0.021-acre from the south bank. Approximately 0.005-acre on the south bank would be permanently impacted due to the extension of the bridge piers. No trees would be impacted on the north bank of the creek; vegetation in this area has been disturbed by landslides and wind, limiting tree growth. Approximately 10 to 11 mature red alders would be removed on the south bank.

This project would impact grand fir forest SNC through the removal of trees for widening of Jack Peters Creek Bridge and roadway shoulders. Approximately 0.298-acre of the stands located on either bank of Jack Peters Creek, east of the bridge, would be impacted. The grand fir forest that would be impacted is adjacent to SR 1 and along a utility line corridor.

In addition, the utility line, which passes through a stand of grand fir, has a clearance of approximately 30 feet, in which taller trees are topped. While the grand fir forest on the south bank is relatively pristine, the stand on the north bank is being encroached by invasive species and is interrupted by the utility line corridor. Impacts to grand fir SNC include 0.210-acre of temporal and 0.088-acre of permanent impacts. Approximately 0.210-acre of the total 0.298-acre of impacted grand fir forest would be replanted in place. A total of approximately 0.088-acre would not be able to be replanted in place; 0.034-acre of this is due to restrictions on planting in the utility line corridor (where trees are currently topped), with the remaining 0.054-acre due to the widened bridge structure and the clear recovery zone.

This project would also impact bishop pine forest SNC through the removal of trees for widening of Jack Peters Creek Bridge and roadway shoulders. A total of approximately 0.792-acre, including approximately 0.517-acre of representative stands and approximately 0.275-acre of non-representative stands of bishop pine forest, would be impacted by project activities. Overall, non-representative stands are in poor condition, and many are vestigial, with high invasive cover. Similar to grand fir SNC, the bishop pine forest that would be impacted is adjacent to SR 1 and along a utility line corridor. The habitat is thus subject to regular disturbance by maintenance activities for the road, bridge, and utility line. In addition, the utility line, which passes through stands of bishop pine, has a clearance of approximately 30 feet, in which taller trees are topped. The highway corridor in the project area has a high cover of invasive species, which are also present in adjacent habitats.

On-site Mitigation and Revegetation

Mitigation to compensate for temporal and permanent loss of ditch and seep wetlands and the intermittent drainage will be fulfilled on-site at a 1:1 impact to mitigation ratio (0.067-acre). Impacted roadside wetland ditches would be re-created in-kind along a different alignment, resulting in no permanent loss. Most of the seep wetland is anticipated to reestablish over the bedrock while the remaining acreage will be re-created in-kind. Wetlands would be planted with appropriate wetland vegetation, or as feasible based on wetland location and composition. The intermittent drainage would only be temporarily impacted; this portion of the drainage, which runs under the existing bridge (starting at the abutment), would be re-established after construction. Additional compensatory mitigation required to reach an agency approved mitigation ratio/acreage would be achieved through additional wetland preservation value at Saunder's Landing as described below and subject to approval through the permitting process.

Mitigation to compensate for temporal and permanent loss of riparian vegetation (red alder and coastal bramble communities) as a result of project construction would be satisfied entirely through on-site riparian mitigation. As applicable, and as based on final design and impacts, any riparian areas would be planted with riparian vegetation with the goal to shade any waters and to replace habitat. Seed collection, cuttings, and plant salvage would occur prior to construction within the project footprint and adjacent riparian habitats in the Caltrans ROW. Based on the extent of the proposed impacts and current conditions at the bridge location, a 3:1 mitigation on-site re-establishment ratio is proposed to be completed on-site (0.216-acre) to fully compensate for Project impacts (0.072-acre). As a result, the CCC Mitigation Worksheet (Appendix E) for the Jack Peters Creek Bridge Project shows that 0.216-acre of on-site riparian restoration mitigation is required to compensate for Project impacts to riparian habitats.

Mitigation to compensate for temporal and permanent impacts to grand fir SNC forest will include replanting grand fir all on-site at a 3:1 mitigation re-establishment ratio (0.894-acre). Additional grand fir forest would be planted in areas that are currently dominated by Monterey cypress (*Cupressus macrocarpa*), a locally invasive species, following the removal of approximately 1.640-acres of cypress. Replacing non-native communities with native species are expected to provide an overall benefit to ecological functions of the forest.

Northern bishop pine forest is facing declining populations in Mendocino County due to various pathogens and insects. Furthermore, lack of fire can reduce natural recruitment of bishop pine; as bishop pine stands are aging, tree recruitment is important for the recovery of the SNC. However due to the susceptibility of bishop pine to diseases, such as pitch canker, there are limitations on planting this species within the Caltrans ROW. Revegetation efforts implemented as part of the project would include on-site protection where feasible, and replanting would be completed using co-dominant tree species in the SNC, such as grand fir and Douglas-fir (*Pseudotsuga menziesii*), and natural recruitment. As a result, to compensate for bishop pine impacts, Caltrans plans to remove 1.640-acres of invasive tree species and other non-native species on-site and replant on-site with native trees species at a 3:1 mitigation re-establishment ratio (2.220-acres).

Details of on-site revegetation are under development, including type and precise locations. On-site revegetation activities may include replanting within temporarily disturbed wetlands and riparian areas and salvage/collection of seed of sensitive plant species for on-site restoration. Planting palettes, location details, and mapping for proposed on-site revegetation will be specified in the project Revegetation Plan.

Revegetation is typically performed under the guidance of Caltrans' Revegetation Specialists, and work is performed by the California Conservation Corps, a similar labor force, or an appropriate contractor. Depending on the timing of construction, planting commonly occurs immediately following, or within one year after construction, and is completed during the winter when the soil is wet from rain, and the plants are dormant. This timing also allows any erosion-control seed to establish and allows microsite conditions to develop. Planting during dormancy decreases stress on the plants and gives them the best chance of survival. Installed plantings are typically purchased through an outgrow contract of regionally appropriate stock to protect genetic integrity, or off-the-shelf if appropriate sourcing is available. Plants are typically caged to protect from herbivory, watered twice monthly during the first two dry seasons, mulched to suppress weeds and retain water, and weeded to decrease competition from non-native plants. Plant species are selected to replace habitat impacted by construction. Mulch used to suppress weeds will not contain wood shavings from diseased trees.

Riparian revegetation efforts will include native riparian species appropriate to the area and a suitable combination of perennial, shrub, and tree species would be used to approximate the natural habitat complexity in the project area. Plantings would be monitored for survival for a minimum of 3 to 5 years. Plantings that do not survive during the initial monitoring period will be replanted to reach a target survival rate of 85% for plantings and 95% vegetated cover, or as required, over the construction area at the end of the monitoring period. If targets are not met at the end of year 3, additional plantings and monitoring would occur for the next 2 years to improve success.

Within the proposed project footprint, all disturbed soil areas would be treated with erosion control consisting of a regionally appropriate seed mixture and seed would be locally sourced where possible. Additionally, Caltrans would implement on-site revegetation with appropriate native California plants in all disturbed soil areas of the project where feasible. Non-native plant species would be controlled in the revegetation areas to allow the plantings to establish. Caltrans endeavors to eradicate any newly introduced invasive species ranked as having High ecological impact by the California Invasive Plant Council (Cal-IPC) (2021).

The following on-site activities would be accomplished to satisfy the mitigation requirements for impacts occurring at the Jack Peters Creek Bridge project:

- **On-site Mitigation for Waters of the U.S./State – Restoration at Jack Peters Creek Bridge:** On-site mitigation activities will include recontouring roadside ditch and seep

wetlands and relocating an intermittent drainage on-site. Estimated impacts to wetlands of 0.063-acre and non-wetland waters of 0.004-acre will be mitigated on-site at a 1:1 ratio, or 0.067-acre. Additional off-site mitigation to compensate for temporal loss of function to aquatic resources will be completed via preservation at Saunder's Landing and detailed in the section below.

- **On-site Mitigation for Riparian – Restoration at Jack Peters Creek Bridge**: Mitigation activities will include restoring riparian resources at the Jack Peters Creek Bridge location. Estimated impacts to riparian resources of 0.072-acre will be mitigated on-site at a 3:1 ratio, or 0.216-acre.

- **On-site Mitigation for Grand Fir SNC/ESHA- Restoration at Jack Peters Creek Bridge:** Mitigation activities will include restoring grand fir SNC/ESHA at the Jack Peters Creek Bridge location. Estimated impacts to grand fir SNC/ESHA of 0.298-acre will be mitigated on-site at a 3:1 ratio, or 0.894-acre.

- **On-site Mitigation for Bishop Pine SNC/ESHA – Enhancement & Restoration at Jack Peters Creek Bridge**: Mitigation activities will include removal of non-native, invasive species and restoring native plant SNC/ESHA communities at the Jack Peters Creek Bridge location. Due to issues facing bishop pine along the Mendocino coast and restrictions of planting in the State ROW, CDFW has agreed to allow Caltrans to replant within the ROW at Jack Peters Creek Bridge site with suitable native plants closely associated with bishop pine and remove invasive species (e.g., Monterey cypress) in lieu of direct planting of bishop pine (Appendix F). Estimated impacts to bishop pine SNC of 0.792-acre will be mitigated on-site via the following:

    - **SNC/ESHA Enhancement**: Removal of 1.640-acres of Monterey cypress and other non-native, invasive species currently invading planned restoration areas on-site.

    - **SNC/ESHA Restoration**: Restore native tree SNCs/ESHAs on-site via the planting of 2.220-acres of other suitable native plant species closely associated with bishop pine in lieu of bishop pine planting. As mentioned above, due to restrictions of planting bishop pine in Caltrans ROW, Caltrans proposed to remove non-native, invasive species, and plant other native species on-site at a 4.28:1 ratio, or 2.220 acres.

Proposed Off-site Mitigation

Temporal and permanent project impacts to waters of the U.S./State will be satisfied on-site at a 1:1 ratio with impacts to riparian being satisfied at a 3:1 ratio. Given the lack of suitable space on-site, additional off-site mitigation is needed to compensate for the temporal loss of function of the impacted waters of the U.S./State. Similar to the Cleone Shoulder Widening Project, Caltrans proposes to satisfy this mitigation for the Jack Peters Creek Bridge Project through the preservation of sensitive waters of the U.S./State resources present at Saunder's Landing. Therefore, the following off-site activities would be accomplished to satisfy the remaining mitigation requirements for impacts occurring at the Jack Peters Creek Bridge project:

- **Off-site Mitigation for Waters of the U.S./State – Preservation at Saunder's Landing**: Preservation of approximately 0.600-acre of State and federal jurisdictional wetlands and non-wetland waters at Saunder's Landing would occur as a result of acquisition of the parcels for MLT.

Appendix E documents how Caltrans assessed and proposed mitigation ratios for impacts associated with the project. To account for permanent impacts and temporal loss of function to waters of the U.S./State, Caltrans applied a 4:1 on-site creation mitigation ratio to fully compensate for Project impacts. For Jack Peters Creek Bridge Project, on-site mitigation for waters of the U.S./State restoration will occur at a 1:1 ratio and off-site mitigation, at a 12:1 ratio, which will include preservation of waters of the U.S./State present on Saunder's Landing (Appendix E, CCC Mitigation Worksheet). As a result, the CCC Mitigation Worksheet for the Jack Peters Creek Bridge Project shows that 0.067-acre of on-site restoration mitigation and 0.600-acre of off-site preservation mitigation are required to compensate for Project impacts to waters of the U.S./State.

Project Mitigation Summary

In summary, according to the CCC Mitigation Worksheet, the following mitigation ratios and acreages are proposed on-site and off-site to satisfy compensatory mitigation requirements for the Jack Peters Creek Bridge Project. Tables 6-10 below provide an overview of results from the CCC Mitigation Worksheet and anticipated mitigation requirements for each impacted habitat at the Jack Peters Creek Bridge Project.

Waters of the U.S./State (wetlands) Impacts: On-site waters of the U.S./State (wetlands) restoration activities at a 1:1 ratio (or 0.063-acre) at the Jack Peters Creek Bridge site would provide approximately 25% (or ~0.016-acre of 0.063-acre Project impacts) of the required

mitigation for waters of the U.S./State (wetlands), leaving 75% (or 0.047-acre) of Project impacts requiring additional mitigation. Caltrans proposes to cover this additional mitigation through preservation of waters of the U.S./State (wetlands) at Saunder's Landing at a 12:1 ratio, or 0.564-acre.

Table 6. CWA Wetland Impacts and Proposed Wetland Mitigation for Jack Peters Creek Bridge.

Proposed Mitigation	Onsite Mitigation at Jack Peters Creek Bridge Project	Offsite Mitigation at Saunder's Landing Waters of the U.S./State (wetlands) Preservation
Project Impacts (acres)	**0.063**	
Remaining Impacts (acres)		0.047
Mitigation Ratio Typically Required	4:1	12:1
Mitigation Proposed (acres)	0.063	0.564

Waters of the U.S./State (non-wetland waters) Impacts: On-site waters of the U.S./State (non-wetland waters) restoration activities at a 1:1 ratio (or 0.004-acre) at the Jack Peters Creek Bridge site would provide approximately 25% (or ~0.001-acre of 0.004-acre Project impacts) of the required mitigation for waters of the U.S./State (non-wetland waters), leaving 75% (or 0.003-acre) of Project impacts requiring additional mitigation. Caltrans proposes to cover this additional mitigation through preservation of waters of the U.S./State (non-wetland waters) at Saunder's Landing at a 12:1 ratio, or 0.036-acre.

Table 7. Non-Wetland Waters Impacts and Proposed Wetland Mitigation for Jack Peters Creek Bridge.

Proposed Mitigation	Onsite Mitigation at Jack Peters Creek Bridge Project	Offsite Mitigation at Saunder's Landing Waters of the U.S./State (non-wetland waters) Preservation
Project Impacts (acres)	**0.004**	
Remaining Impacts (acres)		0.003
Mitigation Ratio Typically Required	4:1	12:1
Mitigation Proposed (acres)	0.016	0.036

Riparian Impacts: On-site riparian restoration activities at a 3:1 ratio (or 0.216-acre) at the Jack Peters Creek Bridge site would fulfill 100% (or 0.072-acre of 0.072-acre Project impacts) of the typically required mitigation for riparian resources.

Table 8. Riparian Impacts and Proposed Riparian Mitigation for Jack Peters Creek Bridge Project.

Proposed Mitigation	Onsite Mitigation at Jack Peters Creek Bridge Riparian Restoration
Project Impacts (acres)	**0.072**
Mitigation Ratio Typically Required	3:1
Mitigation Proposed (acres)	0.216

Grand Fir SNC/ESHA Impacts: On-site grand fir SNC restoration activities at a 3:1 ratio (or 0.894-acre) at the Jack Peters Creek Bridge site would fulfill 100% (or 0.298-acre of 0.298-acre Project impacts) of the required mitigation for SNC/ESHA resources.

Table 9. Grand Fir Impacts and Proposed Grand Fir Mitigation for Jack Peters Creek Bridge Project.

Proposed Mitigation	Onsite Mitigation at Jack Peters Creek Bridge Grand Fir Restoration
Project Impacts (acres)	**0.298**
Mitigation Ratio Typically Required	3:1
Mitigation Proposed (acres)	0.894

Bishop Pine Forest SNC/ESHA Impacts: Bishop pine forest SNC/ESHA restoration will be accomplished through restoration and enhancement activities at the Jack Peters Creek Bridge site. On-site bishop pine forest SNC/ESHA enhancement will include the removal of non-native invasive species including large Monterey cypress trees on 1.640-acres. This action would provide approximately 35% (or ~0.277-acre of 0.792-acre Project impacts) of the required mitigation for bishop pine SNC/ESHA mitigation, leaving 65% (or 0.514-acre) of Project impacts requiring additional mitigation. Caltrans proposes to cover this additional mitigation through restoration activities that include the installation of additional native tree species closely associated with bishop pine over 2.220-acres. This is equivalent to a 4.28:1 mitigation ratio based on remaining Project impacts (0.514-acre) following onsite enhancement activities.

Table 10. Bishop Pine Impacts and Proposed Bishop Pine Mitigation for Jack Peters Creek Bridge Project.

Proposed Mitigation	Onsite Mitigation at Jack Peters Creek Bridge Project	
	Bishop Pine Enhancement	Bishop Pine Restoration
Project Impacts (acres)	**0.792**	
Remaining Impacts (acres)		0.514
Mitigation Ratio Typically Required	6:1	4.28:1
Mitigation Proposed (acres)	1.640	2.220

Table 11 below provides a summary of the estimated impacts, on-site mitigation and revegetation efforts, and proposed off-site mitigation acreage for waters of the U.S./State, riparian, and bishop pine forest to provide compensatory mitigation for the Jack Peters Creek Bridge Project impacts.

Table 11. Summary of Estimated Impacts for Jack Peters Creek Bridge Project with Proposed Offsets and Mitigation at On-Site and Off-Site Locations

Impact or Offset Description	Impacts (Acres)	On-Site Offsets and Mitigation (Acres)	Off-Site Mitigation (Acres)	Offset and Mitigation Type
Project 2: Jack Peters Creek Bridge Widening Project				
Temporal & Permanent Impacts				
Total Permanent Impacts to Waters of the U.S. and State (CWA Wetlands)	0.063			
Total Permanent Impacts to Waters of the U.S. and State (Non-Wetland Waters)	0.004			
Total Permanent Impacts to Waters of the U.S. and State	**0.067**			
Total Temporal Impacts to Riparian	0.067			
Total Permanent Impacts to Riparian	0.005			
Total Combined Temporal and Permanent Impacts to Riparian	**0.072**			
Total Temporal Impacts to Grand Fir SNC	0.210			
Total Permanent Impacts to Grand Fir SNC	0.088			
Total Combined Temporal and Permanent Impacts to Grand Fir SNC	**0.298**			
Total Temporal Impacts to Bishop Pine SNC	0.714			
Total Permanent Impacts to Bishop Pine SNC	0.078			
Total Combined Temporal and Permanent Impacts to Bishop Pine SNC	**0.792**			
Proposed Offsets and Mitigation On-Site				
Ditch Wetland Creation		**0.045**		On-site ditch wetland creation for permanent impacts to wetlands; Total wetland replacement 1:1 in-kind replacement
Seep Wetland Restoration		**0.018**		On-site seep wetland natural realigning for permanent impacts to wetlands; Total wetland replacement at 1:1 in-kind replacement

Impact or Offset Description	Impacts (Acres)	On-Site Offsets and Mitigation (Acres)	Off-Site Mitigation (Acres)	Offset and Mitigation Type
Non-wetland Waters Restoration		**0.004**		On-site waters/drainage natural realigning for permanent impacts to non-wetland waters at 1:1 in-kind replacement
Riparian Restoration		**0.216**		On-site riparian restoration for temporal and permanent impacts to riparian at 3:1 in-kind replacement
Grand Fir Forest SNC Restoration		**0.894**		On-site grand fir restoration for temporal and permanent impacts at 3:1 in-kind replacement ratio
Bishop Pine SNC Restoration Due to issues facing bishop pine along the Mendocino coast and restrictions of planting within the State ROW, CDFW has agreed to allow Caltrans to replant within the ROW at Jack Peters Creek with regionally appropriate native plants closely associated with bishop pine and remove invasive species (e.g., Monterey cypress) in lieu of planting bishop pine.				
Removal of 1.640-acres of Monterey cypress trees and other non-native, invasive species within Caltrans ROW		**1.640**		On-site removal of non-native Monterey cypress within bishop pine and grand fir planting locations
Restoration of 2.220-acres of bishop pine forest on-site via the planting of other native plants closely associated with bishop pine. Impacts will be mitigated through planting of similar native species in lieu of planting bishop pine SNC/ESHA in State ROW		**2.220**		On-site restoration for temporal and permanent impacts to bishop pine SNC at 4.28:1 ratio for remaining 0.519-acre Project impacts

Impact or Offset Description	Impacts (Acres)	On-Site Offsets and Mitigation (Acres)	Off-Site Mitigation (Acres)	Offset and Mitigation Type
Proposed Mitigation Off-Site				
Off-site Waters of the U.S./State Preservation at Saunder's Landing Caltrans proposes to preserve sensitive aquatic resources present at Saunder's Landing via purchase and transference of the property to the MLT				
Off-site Waters of the U.S./State (wetlands) Preservation Mitigation at Saunder's Landing			**0.564**	In addition to 1:1 offset at Jack Peters Creek Bridge, Caltrans proposes to preserve 0.564-acre of CWA wetlands at Saunder's Landing
Off-site Waters of the U.S./State (non-wetland waters) Preservation Mitigation at Saunder's Landing			**0.036**	In addition to 1:1 offset at Jack Peters Creek Bridge, Caltrans proposes to preserve 0.036-acre of non-wetland waters at Saunder's Landing

Project 3: Elk Creek Bridge Replacement Project (01-0E110) Discussion

Project Impacts

Wetland delineations conducted for the Elk Creek Bridge Replacement Project indicated that the Project area has several potentially jurisdictional water features, including a ditch and a perennial stream (Appendix A, Elk Creek Waters of the U.S./State Maps). Additionally, riparian vegetation consisting of red alder, Sitka willow (*Salix sitchensis*) thickets, and coastal brambles as well as upland SNC consisting of coastal brambles is found throughout the Project area and will be impacted as a result of Project activities (Table 1).

There are two seasonal wetlands within the BSA. One of the seasonal wetlands (W-1) is in a roadside ditch on the east side of SR 1 and south of Elk Creek. Seasonal wetland W-1 is connected to a ditch (D-3) and meets all three parameters of a wetland as defined by the USACE. Dominant vegetation consists of velvet grass, willow herb (*Epilobium ciliatum* ssp. *watsonii*), and common chickweed (*Cerastium fontanum* ssp. *vulgare*). The other seasonal wetland (CW-1) occurs within the BSA in a dirt road north of Elk Creek and east of SR 1. This wetland extends from the slope adjacent to the road into the roadbed; however, most of the vegetation is on the slope. The dirt roadbed is bare ground and soil has sloughed onto the roadbed from the slope. Dominant vegetation consists of common rush (*Juncus patens*) and velvet grass. Soil in this location was saturated within 8 inches of the surface, but the soil did not meet hydric criteria, indicating this small wetland qualifies as a coastal wetland only. Construction of the proposed project would result in the permanent removal of 0.002-acre in ditch W-1.

Some of the high-water areas within the creek extend into the riparian vegetation (red alder forest or Sitka willow thicket). While these areas did not meet all three parameters to qualify as wetlands they do qualify as non-wetland waters since they occur below OHWM. For the Elk Creek Bridge Replacement Project, these areas have been categorized as "riparian below OHWM" and will be mitigated via riparian plantings however, due to the location of the plants in the active streambed, Caltrans will not ensure that these plantings are maintained as such habitats. Construction of the Project would result in the temporary removal and temporal loss of function of 0.004-acre of red alder forest wetland. The removal of red alder forest wetland is associated with construction of the access road, abutment walls for the new bridge, and installation of the stream bank revetment. Construction of the project would also result in temporal loss of 0.029-acre and permanent removal of 0.001-acre of Sitka willow thicket wetland in Elk Creek. The removal of Sitka willow thicket wetland is associated with

construction of the temporary bridge, the abutment walls for the new bridge, and the wider bridge deck of the new bridge.

Additional construction impacts would result in a maximum temporary fill of 0.190-acre of perennial stream in Elk Creek per construction season. The placement of fill in Elk Creek is associated with construction of the access road and temporary work platform, and installation of the stream diversion in year one, and with installation of the stream diversion and root wad revetment in year two.

Upland riparian vegetation present within the project ESL consist of red alder riparian forest, Sitka willow thickets, and coastal brambles. The riparian vegetation along Elk Creek and most of the forest east of SR 1 consists of upland red alder riparian forest. Dominant species in the forest include red alder with areas of arroyo willow and Sitka willow, and understory species, such as thimbleberry, California blackberry, red elderberry, oceanspray (*Holodiscus discolor*), cape ivy, willow herb, and common horsetail (*Equisetum arvense*). Construction of the project would result in the removal of 0.548-acre (0.500-acre temporal and 0.048-acre permanent) of mature red alder riparian forest adjacent to Elk Creek. The removal of red alder riparian forest is associated with vegetation removal for construction of the temporary access road, temporary bridge, new bridge deck, construction of the abutments for the replacement bridge, and access for and construction of the root wad revetment on the northern stream bank.

Sitka willow thicket comprises most of the riparian vegetation along Elk Creek on the west side of Elk Creek Bridge and a patch of riparian on the southeast side of Elk Creek Bridge. Dominant species in the forest include Sitka willow, arroyo willow, red elderberry, California blackberry, and poison oak (*Toxicodendron diversilobum*). Construction of the project would result in the temporal removal of 0.133-acre and the permanent loss of 0.0358-acre of Sitka willow thicket adjacent to Elk Creek. The removal of Sitka willow thicket is associated with construction of abutment walls for the new bridge and new bridge deck, construction of the water infiltration areas, and the access road and work area.

Coastal brambles occur on the streambanks on three sides of the Elk Creek Bridge: the northwest, northeast, and southeast sides. This scrub vegetation includes California blackberry, thimbleberry, nootka rose (*Rosa nutkana*), coyote brush (*Baccharis pilularis*), red elderberry, coast man-root (*Marah oreganus*), and stinging nettle (*Urtica dioica*). Coastal bramble habitat situated in close proximity to the perennial waters of Elk Creek and adjacent to riparian communities (red alder and Sitka willow) are considered to be riparian vegetation;

where coastal bramble occurs farther upland and in conjunction with higher densities of coyote brush, poison oak, and emergent conifer trees (e.g. Douglas fir [*Pseudotsuga menzizii*]), the habitat is considered non-riparian. Construction of the project would result in temporal impacts to 0.104-acre and permanent removal of 0.053-acre of riparian coastal brambles adjacent to Elk Creek on the eastern side of SR 1. The removal of riparian coastal brambles is associated with construction of the temporary and replacement bridge abutments and the construction of access roads on the north and southeast sides. Temporal impacts to 0.137-acre and permanent removal of 0.057-acre of non-riparian coastal brambles would occur as a result of construction of the new bridge approaches from the north.

On-site Mitigation & Revegetation

Mitigation to compensate for the permanent loss of wetlands (W-1) will be met on-site at a 1:1 ratio (0.002-acre) by re-establishing a wetland ditch along the new alignment following construction activities, resulting in no permanent loss. The new wetland ditch would be planted with appropriate wetland vegetation, or as feasible based on wetland location and composition. Additional compensatory mitigation required to reach an agency approved mitigation ratio/acreage would be achieved through additional wetland preservation at the proposed off-site mitigation site (Saunder's Landing) as described below and subject to approval through the permitting process.

Mitigation to compensate for temporal loss of riparian vegetation (red alder, willow, and coastal bramble communities) as a result of Project construction would be satisfied through a combination of on- and off-site riparian mitigation. Based on the extent of the proposed impacts and current conditions on-site, a 1:1 ratio for mitigation re-establishment is proposed on-site for temporal (0.771-acre) and permanent (0.137-acre) impacts. Red alder wetland riparian and Sitka willow thickets occurring below OHWM will be mitigated on-site at a 1:1 ratio (0.034-acre) via replanting adjacent to impact areas. As mentioned above, the location of these plantings below OHWM makes them vulnerable to high flood events in the lower Elk Creek reaches. Caltrans proposes to monitor these plantings for survival for a minimum of 3 to 5 years. If plantings are deemed to be impacted as a result of high flood events (e.g., damaged and/or washed out), Caltrans will not be responsible for future plantings to meet success criteria. Additional compensatory mitigation required to reach an agency approved mitigation ratio/acreage would be achieved through additional riparian preservation and out-of-kind SNC/ESHA preservation at the proposed off-site mitigation Saunder's Landing as described below and subject to approval through the permitting process.

Mitigation to compensate for temporal loss of non-riparian SNC/ESHA (upland coastal bramble communities) as a result of project construction would be satisfied through a combination of on- and off-site riparian mitigation. Based on the extent of the proposed impacts and current conditions on-site, a 0.67:1 ratio for mitigation re-establishment is proposed on-site for temporal (0.137-acre) and permanent (0.057-acre) impacts. Additional compensatory mitigation required to reach an agency approved mitigation ratio/acreage would be achieved through out-of-kind SNC/ESHA preservation at the proposed off-site mitigation site as described below and subject to approval through the permitting process.

Details of on-site revegetation are under development, including type, and precise locations. On-site revegetation activities may include replanting within temporarily disturbed wetlands and riparian areas and salvage/collection of seed of sensitive plant species for on-site restoration. Planting palettes, location details, and mapping for proposed on-site revegetation will be specified in the Revegetation Plan.

A root wad revetment would be constructed along the north bank of Elk Creek at the bridge site to mitigate for adverse effects to Central California Coast coho salmon and to provide in-stream habitat benefits to Northern California steelhead. The revetment would be constructed using large rock with planted willows to fix 6-10 conifer root wads (redwood [*Sequoia sempervirens*], Douglas fir, or potentially cypress) to provide salmonid habitat and protect the north abutment of the bridge. The final design of the revetment would be developed in conjunction with, and ultimately approved by, CDFW as part of the project permitting process. The revetment would be installed at the site following installation of the new bridge and removal of the temporary bridge.

The following on-site activities would be accomplished to satisfy the mitigation requirements for impacts occurring at the Elk Creek Bridge Project:

- **On-site Mitigation for Waters of the U.S./State (wetlands) – Restoration at Elk Creek Bridge:** Mitigation activities will include reestablishing the ditch wetland (W-1) either by recreating a new ditch wetland or creating a new depressional wetland adjacent to ditches. Estimated impacts to wetlands total 0.002-acre and will be mitigated on-site at a 1:1 ratio (0.002-acre).

- **On-site Mitigation for Riparian – Restoration at Elk Creek Bridge**: Mitigation activities will include restoring riparian resources at the Elk Creek Bridge location. Additional impacts to red alder forest and Sitka willow thicket wetlands will be mitigated through replanting adjacent to impact areas below OHWM. Estimated

temporal (0.771-acre) and permanent (0.137-acre) impacts to riparian resources (0.907-acre) will be mitigated on-site at a 1:1 ratio, or 0.907-acre.

- **On-site Mitigation for Non-Riparian Coastal Bramble SNC/ESHA – Restoration at Elk Creek Bridge:** Mitigation activities will include restoring non-riparian coastal bramble SNC/ESHA at the Elk Creek Bridge location. Estimated temporal (0.137-acre) and permanent (0.057-acre) impacts to non-riparian coastal bramble SNC/ESHA (0.194-acre) will be mitigated on-site at a 0.67:1, or 0.130-acre.

- **On-site Mitigation for Salmonids – Mitigation for Elk Creek Bridge**: Activities will include restoring the Elk Creek bank as mitigation for potential adverse effects to salmonids. Caltrans plans to remove rock slope protection (RSP) placed from a past emergency project and install 6-10 conifer root wads as designed and approved in coordination with CDFW.

Proposed Off-site Mitigation

Temporal and permanent project impacts to waters of the U.S./State and riparian habitats will be satisfied on-site to a 1:1 credit-to-impact mitigation ratio though non-riparian coastal bramble ESHA resources will only be mitigated at a 0.67:1 ratio. Given the lack of suitable space on-site, additional off-site mitigation is needed to compensate for temporal loss of the impacted waters of the U.S./State, riparian, and SNC/ESHA areas. Similar to the other Roadway Projects, Caltrans proposes to satisfy mitigation for the Elk Creek Bridge Replacement Project through the preservation and restoration of sensitive resources and habitats present at Saunder's Landing. As mentioned above, given the limited riparian resources present at Saunder's Landing, Caltrans is proposing to mitigate for temporal loss from impacts to riparian and SNC/ESHA through a combination of preservation of riparian acreage (1.129-acres) and other sensitive biological habitats (6.146-acres SNC/ESHA) available at Saunder's Landing as well as restoration of habitats currently invaded by invasive plant species rated as "High" according to Cal-IPC. Therefore, the following activities would be accomplished to satisfy the mitigation requirements for impacts occurring at the Elk Creek Bridge Replacement project:

- **Off-site Mitigation for Waters of the U.S./State - Preservation at Saunder's Landing**: Preservation of 0.018-acre of State and federal jurisdictional wetlands at Saunder's Landing would occur as a result of acquisition of the parcel for MLT.

- **Off-site Mitigation for Riparian – Preservation at Saunder's Landing**: The following mitigation activities are proposed to satisfy riparian impacts at the Elk Creek Bridge Project.

    - **Preservation of Riparian Habitats at Saunder's Landing**: Preservation of 1.129-acres of riparian habitats at Saunder's Landing would occur as a result of acquisition of the parcels for MLT

    - **Preservation of SNC/ESHA at Saunder's Landing**: Preservation of 4.790-acres of SNC/ESHA at Saunder's Landing would occur as a result of acquisition of the parcels for MLT. SNC/ESHA resources and acreages at Saunder's Landing are detailed in Section 2.6 and summarized below. In summary, the following SNC/ESHAs, and associated acreages, would be preserved:

        - **Northern Bishop Pine Forest:** Preservation of 1.100-acres located on the eastern parcel above the riparian zone within the grasslands.

        - **Northern Coastal Scrub:** Preservation of 1.330 acres located on the eastern and western parcels along the parcel edge that borders SR1.

        - **Coastal Terrace Prairie:** Preservation of 3.261-acres of quality habitat that is the dominate vegetation alliance on the western parcel.

        - **Coastal Bluff Scrub:** Preservation of 0.455-acre located on the western parcel along the cliff edge.

- **Off-site Mitigation for SNC/ESHA – Preservation at Saunder's Landing:** Preservation of 1.356-acres of non-riparian SNC/ESHA (included in acreages listed above) at Saunder's Landing would occur as a result of acquisition of the parcels for MLT.

Appendix E documents how Caltrans assessed and proposed mitigation ratios for impacts associated with the project. To account for permanent impacts and temporal loss of function to waters of the U.S./State, Caltrans applied a 4:1 creation mitigation ratio to fully compensate for Project impacts. For the Elk Creek Bridge Project, on-site mitigation for waters of the U.S./State restoration will occur at a 1:1 ratio and off-site mitigation, at a 12:1 ratio, which will include preservation of aquatic resources present on Saunder's Landing (Appendix E, CCC Mitigation Worksheet). As a result, the CCC Mitigation Worksheet for the Elk Creek Bridge Project shows that 0.002-acre of on-site restoration mitigation for CWA

wetlands and 0.018-acre of off-site preservation mitigation are typically required to compensate for temporal and permanent impacts to CWA wetlands.

For riparian habitat, to account for permanent impacts and temporal loss of function, Caltrans applied a 3:1 creation mitigation ratio to fully compensate for Project impacts. On-site riparian restoration mitigation will occur at a 1:1 ratio and off-site mitigation is proposed to occur at a 9:1 ratio for in-kind riparian habitats present at Saunder's Landing and 10:1 mitigation ratio for out-of-kind habitats. Out-of-kind habitats include 6.146-acres of other sensitive biological resources such as upland riparian buffer habitats (bishop pine forests), very high-quality coastal terrace prairie, northern coastal scrub, and coastal bluff scrub. As a result, the CCC Mitigation Worksheet for the Elk Creek Bridge Project shows that 0.907-acre of on-site riparian restoration mitigation, 1.129-acres of in-kind riparian preservation mitigation, and 4.790-acres of out-of-kind SNC/ESHA preservation mitigation will compensate for Project impacts to riparian habitats.

For non-riparian coastal bramble SNC/ESHA resources, to account for permanent impacts and temporal loss of function, Caltrans applied a 3:1 creation mitigation ratio to fully compensate for Project impacts. On-site non-riparian restoration mitigation will occur at a 0.67:1 ratio and off-site mitigation is proposed to occur at a 9:1 ratio for non-riparian SNC/ESHA preservation at Saunder's Landing. Other sensitive biological resources include 6.146-acres of SNC/ESHAs as detailed in Section 2.6 and summarized above. As a result, the CCC Mitigation Worksheet for the Elk Creek Bridge Project shows that 0.130-acre of on-site non-riparian SNC/ESHA restoration mitigation and 1.356-acres of SNC/ESHA preservation mitigation are typically required to compensate for Project impacts to non-riparian coastal bramble SNC/ESHA.

Project Mitigation Summary

In summary, the following mitigation ratios and acreages are proposed to satisfy compensatory mitigation requirements for the Elk Creek Bridge Project: Tables 12-14 below provide an overview of results from the CCC Mitigation Worksheet and anticipated mitigation requirements for each impacted habitat at the Elk Creek Bridge Project.

Waters of the U.S./State (wetlands) Impacts: On-site waters of the U.S./State restoration activities at 1:1 ratio at the Elk Creek Bridge site would complete 25% (or 0.0005-acre of 0.002-acre Project impacts) of the required mitigation for waters of the U.S./State, leaving 75% (or 0.0015-acre) of Project impacts requiring mitigation. Caltrans proposes to cover this

additional mitigation through preservation of waters of the U.S./State at Saunder's Landing at a 12:1 ratio, or 0.018-acre.

Table 12. CWA Wetland Impacts and Proposed Wetland Mitigation for Elk Creek Bridge Project

Proposed Mitigation	Onsite Mitigation at Elk Creek Bridge Project	Offsite Mitigation at Saunder's Landing Waters of the U.S./State (wetlands) Preservation
Project Impacts (acres)	**0.002**	
Remaining Impacts (acres)		0.0015
Mitigation Ratio Typically Required	4:1	12:1
Mitigation Proposed (acres)	0.002	0.018

Riparian Impacts: The following mitigation activities will occur to cover riparian impacts at Elk Creek Bridge Replacement Project. A summary table can be found below (Table 13) and details related to mitigation ratio/acreage calculations can be found in Appendix E:

1. On-site riparian restoration activities at 1:1 ratio at the Elk Creek Bridge site would complete 33% (or 0.302-acre of 0.907-acre Project impacts) of the required mitigation for riparian, leaving 67% (or 0.605-acre) of Project impacts requiring mitigation.

2. Caltrans proposes to cover additional mitigation via preservation of similar, highly functioning riparian habitats at Saunder's Landing at a 9:1 ratio, or 5.442-acres. The riparian zone on Saunder's Landing is approximately 1.129-acres in size and is made up several vegetation alliances which are detailed in Section 2.6 below. Applying 1.129-acres of riparian preservation mitigation acreage to the required mitigation of 5.442-acres leaves 0.479-acre of Project impacts requiring further mitigation.

3. Caltrans proposes to cover this additional mitigation via preservation of SNC/ESHA at a 10:1 ratio, or 4.790-acres, which leaves a remaining 1.416-acres of non-riparian SNC/ESHA habitat that can be used to mitigate impacts to Coastal Bramble SNC/ESHA as discussed below and summarized in Table 14.

~~3.~~4. Caltrans proposes to cover additional mitigation via the removal of all invasive plant species rated as High according to Cal-IPC over the entirety of Saunder's Landing. To accomplish this, Caltrans will conduct seasonally appropriate botanical surveys on the eastern parcel of Saunder's Landing to identify and map all known occurrences of invasive plants prior to removal and following property acquisition.

Table 13. Riparian Impacts and Proposed Riparian Mitigation for Elk Creek Bridge Project

Proposed Mitigation	Onsite Mitigation at Elk Creek Bridge Project	Offsite Mitigation at Saunder's Landing	
		Riparian Preservation	SNC/ESHA Preservation
Project Impacts (acres)	**0.907**		
Remaining Impacts (acres)		0.605	0.479
Mitigation Ratio Typically Required	3:1	9:1	10:1
Mitigation Proposed (acres)	0.907	1.129	4.790

Non-Riparian Coastal Bramble SNC/ESHA Impacts: On-site non-riparian coastal brambles SNC/ESHA restoration activities at a 0.67:1 ratio at the Elk Creek Bridge site would complete 22% (or 0.043-acre of 0.194-acre Project impacts) of the required mitigation for CCA wetlands, leaving 78% (or 0.151-acre) of Project impacts requiring additional mitigation. Caltrans proposes to cover this additional mitigation through preservation mitigation of non-riparian, SNC/ESHA resources present on Saunder's Landing. As a result, Caltrans proposes non-riparian SNC/ESHA mitigation at a 9:1 ratio, or 1.356-acres. In combination with out-of-kind SNC/ESHA mitigation for riparian resources (4.790-acres), Caltrans also proposes to apply 1.356-acres to cover the remaining non-riparian SNC/ESHA mitigation needs for the Elk Creek Bridge Replacement Project, leaving a balance of 0.060-acre of non-riparian SNC/ESHA habitat with no project mitigation need. However, as a result of the acquisition of the property, the entire 6.206-acres of sensitive habitats will be preserved in perpetuity.

Table 14. Non-Riparian SNC/ESHA Impacts and Proposed Non-Riparian SNC/ESHA Mitigation for Elk Creek Bridge Project

Proposed Mitigation	Onsite Mitigation at Elk Creek Bridge Project	Offsite Mitigation at Saunder's Landing Non-riparian SNC/ESHA Preservation
Project Impacts (acres)	**0.194**	
Remaining Impacts (acres)		0.151
Mitigation Ratio Typically Required	3:1	9:1
Mitigation Proposed (acres)	0.130	1.356

Table 15 below provides a summary of the estimated impacts, on-site mitigation and revegetation efforts, and proposed off-site mitigation acreage for waters of the U.S./State preservation to provide compensatory mitigation for the Elk Creek Bridge Replacement Project impacts.

Table 15. Summary of Estimated Impacts for Elk Creek Bridge Replacement Project with Proposed Offsets and Mitigation at On-Site and Off-Site Locations.

Impact or Offset Description	Impacts (Acres)	On-Site Offsets and Mitigation (Acres)	Off-Site Mitigation (Acres)	Offset and Mitigation Type
Project 3: Elk Creek Bridge Replacement Project				
Temporal & Permanent Impacts				
Total Temporal Impacts to Non-Riparian Coastal Brambles (SNC)	0.137			
Total Permanent Impacts to Non-Riparian Coastal Brambles (SNC)	0.057			
Total Combined Temporal and Permanent Impacts to Non-Riparian Coastal Brambles (SNC)	***0.194***			
Total Permanent Impacts to Waters of the U.S. and State (CWA Wetlands)	0.002			
Total Permanent Impacts to Waters of the U.S. and State	***0.002***			
Total Temporal Impacts to Riparian	0.771			
Total Permanent Impacts to Riparian	0.137			
Total Combined Temporal and Permanent Impacts to Riparian	***0.907***			
Proposed Offsets and Mitigation On-Site				
Perennial Stream Restoration (Temporary Impacts) Temporary impacts from removal of gravel pad, culvert, and stream diversion every construction season		**0.190**		Temporary impact from removal of gravel pad, culvert, stream diversion every construction season
Non-Riparian Coastal Brambles (SNC) Shrubland Alliance – Coastal Brambles (*Rubus parviflorus, R. spectabilis, R. ursinus*)		**0.130**		On-site restoration of upland coastal brambles for temporal and permanent impacts at a 0.67:1 in-kind replacement

Impact or Offset Description	Impacts (Acres)	On-Site Offsets and Mitigation (Acres)	Off-Site Mitigation (Acres)	Offset and Mitigation Type
Ditch Wetland Creation		**0.002**		On-site re-establishment at 1:1 mitigation ratio for permanent impacts to wetlands
Riparian Restoration		**0.907**		On-site riparian restoration at 1:1 mitigation ratio for temporal and permanent impacts
Proposed Mitigation Off-site				
Off-site Waters of the U.S./State Preservation (wetlands) at Saunder's Landing Caltrans proposes to preserve aquatic resources present at Saunder's Landing via purchase and transference of the property to the MLT.			**0.018**	Preservation of sensitive resources present at Saunder's Landing to address temporal loss to waters of the U.S./State following **1:1** on-site offsets
Off-site Riparian Preservation at Saunder's Landing Caltrans proposes to preserve 1.129-acres of riparian habitats as in-kind mitigation for riparian impacts			**1.129**	Preservation of riparian habitats at Saunder's Landing to address temporal loss to riparian habitats following **1:1** on-site offsets
Off-site SNC/ESHA Preservation at Saunder's Landing Caltrans proposes to preserve 4.790-acres of SNC/ESHA as out-of-kind mitigation for riparian impacts. Additionally, Caltrans proposes to preserve 1.356-acres of non-riparian SNC/ESHA as mitigation for non-riparian coastal bramble SNC/ESHA impacts There will be an excess 0.06 acre of SNC/ESHA Preservation with no project need.			**6.146**	Preservation of other sensitive biological resources present at Saunder's Landing. Total SNC/ESHA area = 6.206-acres. SNC/ESHAs include: • 1.100-acre of bishop pine forest • 1.330-acre of northern coastal scrub • 3.261-acres of coastal terrace prairie • 0.455-acre of coastal bluff scrub

Impact or Offset Description	Impacts (Acres)	On-Site Offsets and Mitigation (Acres)	Off-Site Mitigation (Acres)	Offset and Mitigation Type
Off-site Restoration at Saunder's Landing Caltrans proposes to restore habitats currently impacted by invasive plant species rated as High by Cal-IPC. Seasonally appropriate botanical surveys and mapping to occur in spring 2023.			**TBD**	Restoration acreage will be determined once seasonally appropriate botanical surveys and mapping are completed in spring 2023.

Summary of Project Mitigation and Saunder's Landing Resources

Table 16 below summarizes the mitigation proposed for the Roadway Projects and the availability of resources present at Saunder's Landing.

Table 16. Summary Table of Roadway Projects Mitigation and Resources Present on Saunder's Landing.

Resource	Acreage Present on Saunder's Landing	Roadway Projects			Project Mitigation Acreage Totals	Notes
		Cleone (01-0G600)	Jack Peters (01-43484)	Elk Creek (01-0E110)		
CCA Wetland and Waters of the U.S/State (Wetlands/Non-Wetland Waters) Preservation						
Waters of the U.S./State (wetlands)	**1.112**	0.441	0.564	0.018	**1.023**	On-site CWA wetlands restoration will be completed at 01-43484 and 01-0E110 at 1:1 ratio. 01-0G600: Preservation of 0.441-acre which include: o 0.144-acre proposed to be preserved for Project impacts to wetlands o 0.297-acre proposed to be preserved as mitigation for Project impacts to non-wetland waters (see Waters of the U.S./State [non-wetland waters] section below) 01-43484: Preservation of 0.564-acre of wetlands for Project impact to wetlands 01-0E110: Preservation of 0.018-acre of wetlands for Project impacts to wetlands Caltrans will preserve 1.112-acres of CWA wetland habitats at Saunder's Landing though Project needs total only 1.023-acres.

Resource	Acreage Present on Saunder's Landing	Roadway Projects			Project Mitigation Acreage Totals	Notes
		Cleone (01-0G600)	Jack Peters (01-43484)	Elk Creek (01-0E110)		
Waters of the U.S./State (non-wetland waters)	**0.130**	0.094	0.036	-	**0.130**	On-site CWA non-wetland waters restoration will be completed at 01-43484 and 01-0E110 at 1:1 ratio. 01-0G600: Preservation of 0.094-acre of non-wetland waters for Project impacts to non-wetland waters; Additional mitigation needs for Project impacts proposed to be mitigated via preservation of 0.297-acre of wetland habitats at Saunder's Landing that are closely associated with non-wetland waters habitats onsite (e.g., red alder forest wetlands) (see Waters of the U.S./State [wetlands] section above). 01-43484: Preservation of 0.036 acre of non-wetland waters for Project impact to non-wetland waters
CCA Wetland (1-, 2-parameter wetlands)	**0.070**	-	-	-	**-**	No identified Project needs for CCA wetlands at Saunder's Landing; Habitats will be preserved in perpetuity as a result of acquisition of the parcels for MLT.
CCA Wetland and Waters of the U.S/State Totals	***1.312***	***0.535***	***0.600***	***0.018***	***1.153***	In combination with 1:1 on-site Waters of the U.S./State restoration mitigation at 01-43484 and 01-0E110, Caltrans will preserve 1.312-acres of wetland/non-wetland waters habitats at Saunder's Landing though Project needs total only 1.153-acres.

Resource	Acreage Present on Saunder's Landing	Roadway Projects			Project Mitigation Acreage Totals	Notes
		Cleone (01-0G600)	Jack Peters (01-43484)	Elk Creek (01-0E110)		
Riparian Habitat Preservation						
Riparian Zone at Saunder's Landing	**1.129**	-	-	1.129	**1.129**	On-site riparian restoration (at 1:1) will be completed at 01-0E110. 01-0E110: 9:1 riparian preservation mitigation ratio applied to 0.605 Project impacts = 5.442-acres; 1.129-acres of riparian mitigation available at Saunder's Landing; Additional riparian mitigation required to compensate for Project impacts (see SNC/ESHA Preservation section below)
Riparian Totals	***1.129***	**-**	**-**	***1.129***	***1.129***	In combination with 1:1 on-site riparian restoration at 01-0E110, Caltrans will preserve 1.129-acres of riparian habitats at Saunder's Landing
SNC/ESHA Preservation						
Northern Bishop Pine Forest	**1.100**	-	-	1.100	**1.100**	SNC/ESHAs proposed to be preserved at Saunder's Landing include: • 1.100-acres of bishop pine forest • 1.330-acres of northern coastal scrub • 0.455-acre of coastal bluff scrub • 3.261-acres of coastal terrace prairie Total SNC/ESHA to be preserved = 6.146-acres
Northern Coastal Scrub	**1.330**	-	-	1.330	**1.330**	
Coastal Bluff Scrub	**0.455**	-	-	0.455	**0.455**	
Coastal Terrace Prairie	**3.321**	-	-	3.261	**3.261**	

Resource	Acreage Present on Saunder's Landing	Roadway Projects			Project Mitigation Acreage Totals	Notes
		Cleone (01-0G600)	Jack Peters (01-43484)	Elk Creek (01-0E110)		
SNC/ESHA Totals	***6.206***			*6.146*	***6.146***	On-site riparian restoration will be completed at 01-0E110 at 1:1 ratio. To account for temporal loss, Caltrans proposes to mitigate for these losses via riparian preservation mitigation at a 9:1 ratio (see Riparian Preservation section above). Due to a shortfall of meeting the required mitigation acreage, Caltrans proposes out-of-kind mitigation via SNC/ESHA preservation mitigation at a 12:1 ratio for 0.479-acre of unmitigated impacts 01-0E110: 10:1 SNC/ESHA preservation mitigation ratio applied to 0.479-acre Project impacts = 4.790-acres On-site non-riparian coastal brambles SNC/ESHA restoration will be completed at 01-0E110 at a 0.67:1 ratio. To account for temporal loss, Caltrans proposes additional mitigation for 0.151-acre Project impacts via SNC/ESHA preservation mitigation at a 9:1 ratio. 01-0E110: 9:1 SNC/ESHA preservation mitigation ratio applied to 0.151-acre Project impacts = 1.356-acres As a result of acquisition and transference to the MLT, a total of 6.206-acres of SNC/ESHA will be preserved in perpetuity though only 6.146-acres of SNC/ESHA are required to mitigate for impacts to riparian and non-riparian SNC/ESHA resources

Resource	Acreage Present on Saunder's Landing	Roadway Projects			Project Mitigation Acreage Totals	Notes
		Cleone (01-0G600)	Jack Peters (01-43484)	Elk Creek (01-0E110)		
Proposed Restoration Mitigation						
CCA Wetland Restoration	**0.317**	0.317	-	-	**0.317**	CCA wetland mitigation proposed for 0.008-acre Project includes substantial wetland restoration of a 0.350-acre CCA wetland invaded by iceplant. Caltrans proposes to mitigate for 0.317-acre given safety concerns with the wetland's proximity to the bluff edge. 01-0G600: 0.317-acre CCA wetland restoration mitigation for 0.008-acre Project impacts results in a ~39.6:1 mitigation ratio
All Habitats				TBD	**TBD**	01-0E110: In combination with onsite offsets at 1:1 ratio and preservation of 1.129-acres of riparian and 6.146-acres of SNC/ESHA on Saunder's Landing, Caltrans will remove all invasive plant species rated as "High" according to the Cal-IPC as out-of-kind mitigation for riparian impacts. Seasonally appropriate botanical surveys will be completed in Spring 2023 (prior to Roadways Projects construction in Summer 2023) which will show approximate acreages of invasive treatments.

Figure 2 below depicts biological resources identified in Table 16 that have been assigned mitigation acreage for the Roadway Projects. Blue outlined mapping segments are resources proposed to be used as mitigation to satisfy impacts for the Cleone Shoulder Widening Project. Orange outlined segments are assigned to the Jack Peters Creek Bridge Project while green outlined segments are assigned to the Elk Creek Bridge Project. Black outlined segments are resources that have not been assigned to any of the Roadway Projects and are excess mitigation that will be preserved as a result of acquisition of Saunder's Landing for MLT.

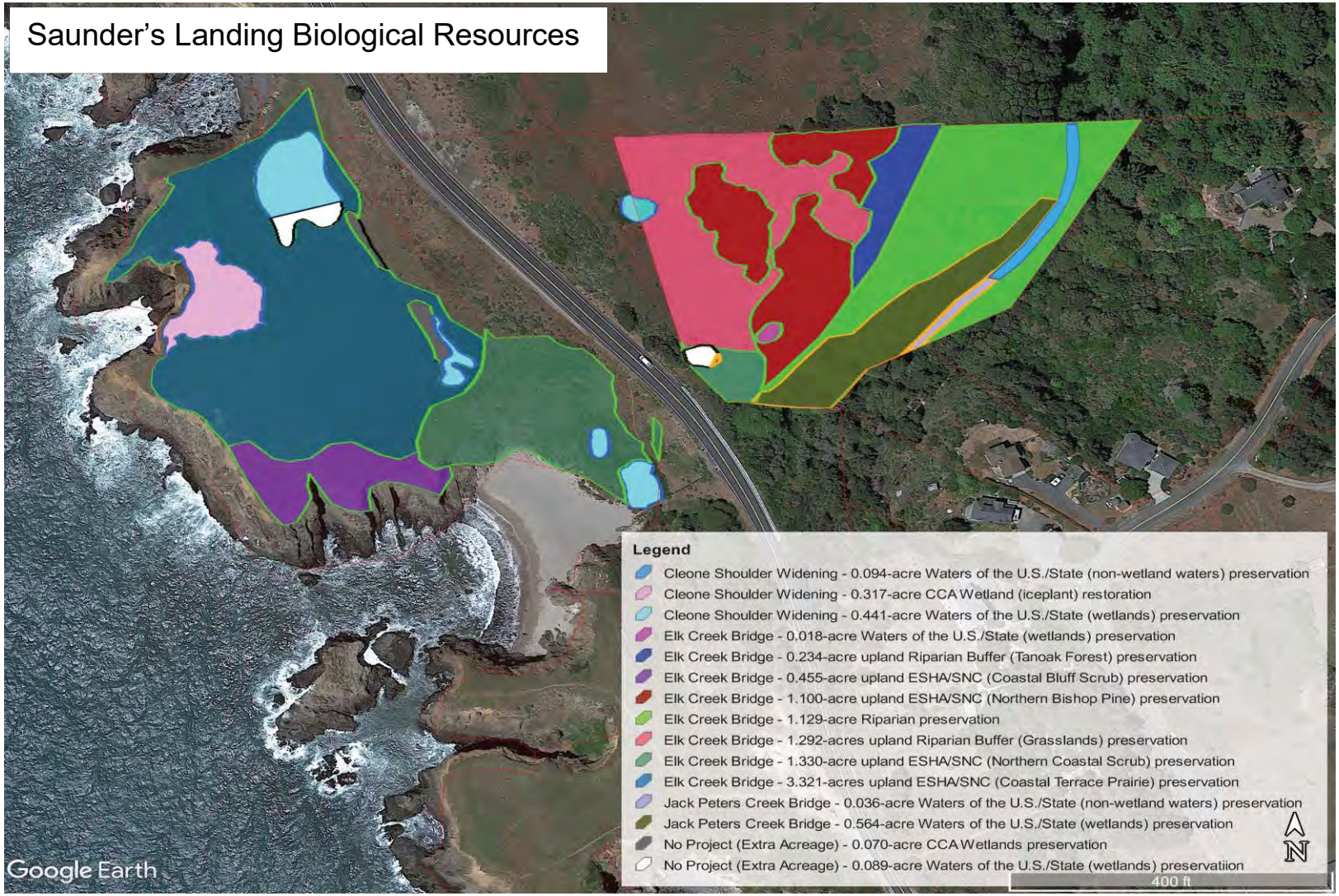


Figure 2. Biological resources present on Saunder's Landing proposed to be used for mitigation for the Roadway Projects. Blue outline = Cleone Shoulder Widening; Orange = Jack Peters Creek Bridge Project; Green = Elk Creek Bridge Project; Black = No Project (Excess Mitigation Acreage)

1.2 Off-Site Mitigation Project Selection

Within the Big-Navarro-Garcia HUC 8 watershed, Caltrans identified numerous off-site mitigation projects which could potentially provide compensatory mitigation. Projects listed below include the project proponent(s) and/or agency providing mitigation as an option:

1) Cape ivy removal at Greenwood Creek State Park (SP) and/or Van Damme/Little River SP (California Department of Parks and Recreation [DPR])
2) European beach grass (*Ammophila arenaria)* removal and other invasive species surrounding seasonal wetlands, Fen Creek, and Ten Mile River (DPR)
3) Invasive gorse (*Ulex europaeus*) removal at Jughandle or Manchester in coastal grasslands/seasonal wetlands etc. (DPR)
4) Replacement of Mill Creek crossing on DPR access road at MacKerricher SP with bridge (DPR)
5) Big River road removal and replacement of 300+ stream culverts (DPR)
6) Purchase of Saunder's Landing for waters of the U.S./State / riparian / ESHA / SNC preservation and CCA wetland/ESHA restoration mitigation (MLT, RCLC, SCC)
7) Stream enhancement and restoration projects on mainstem and South Fork of Ten Mile (The Nature Conservancy [TNC])
8) Replace Railroad Gulch crossing culvert on Forest Rd 720 and abandon segments of road (CalFire)
9) Provide funding to assist with removal of Pudding Creek dam (CDFW)
10) Alder and Maple creeks daylighting project (Fort Bragg Headlands Consortium)
11) Purchase credits from the Mendocino Coast Mitigation Bank (Caltrans/Resource Environmental Solutions [RES])

Caltrans then developed a mitigation feasibility matrix that included compensating for impacts to waters of the U.S./State on-site as part of the revegetation plan (Table 17). Through the feasibility selection process, Caltrans determined Saunder's Landing would provide the appropriate off-site mitigation for impacts associated with the Roadway Projects. Saunder's Landing has rare regionally significant aquatic and botanical resource habitats that are intertwined with a variety of palustrine freshwater wetlands and a perennial stream, (Hearn Gulch) that supports sensitive wetlands, riparian, and SNC biological communities that are threatened by invasive plant species.

Table 17. Mitigation Feasibility Matrix.

Mitigation Projects	Proposed Treatment	Constraints / Uncertainties	Satisfies "No Net Loss" (USACE, RWQCB)	Satisfies Wetland / OW Impacts (4:1 ratio)	Acres of mitigation available	Cost / Complexity
1. On-site wetland/OWs mitigation	Mitigate at least 1:1 acreage at project sites for impacts to wetlands and OWs	Severely limited R/W on SR 1 from safety project road widening (01-0G600); No additional space on-site to incorporate wetland/Waters mitigation	No at 01-0G600 Yes at 01-43484 and 01-0E110	No	01-0G600: 0-acre 01-43484: 0.067-acre 01-0E110: 0.014-acre	Funded w/ project, low complexity.
2. On-site riparian mitigation	Mitigate at least 1:1 acreage at project sites for impacts to riparian habitats	Severely limited R/W on SR 1 from safety project road widening (01-0G600); Limited space on-site to restore riparian habitats	N/A	N/A	At least 1:1 for all projects	Funded w/ project, low complexity.
3. Cape ivy removal at Greenwood Creek and/or Van Damme / Little River SP	Approximately 4 acres of ivy removal at Greenwood Creek and 3.3 acres at Van Damme/Little River SP	Minor. Potential issue with working with State Parks regarding site control; SP stated they may wish to spray herbicides to control ivy which may not be allowed by D1 CT policies.	No	No	>7 acres	Moderate cost for removal though additional cost for long-term management (endowment) will result in higher than expected costs
4. European beach grass removal and other invasive species surrounding seasonal wetlands, Fen Creek, and Ten Mile River	Remove invasive plants throughout SP lands	Minor. Potential issue with working with State Parks regarding site control; Limited acreage available; Out-of-kind mitigation (dune wetlands)	No	No	<5 acres	Moderate cost for removal though additional cost for long-term management (endowment) will result in higher than expected costs.

Mitigation Projects	Proposed Treatment	Constraints / Uncertainties	Satisfies "No Net Loss" (USACE, RWQCB)	Satisfies Wetland / OW Impacts (4:1 ratio)	Acres of mitigation available	Cost / Complexity
5. Invasive gorse removal at Jughandle or Manchester in coastal grasslands / seasonal wetlands etc.	Removal invasive plants throughout SP lands	Minor. Provide State Parks additional funding to continue removal of gorse on SP lands; Gorse seed can persist for ~50 years so long-term efficacy of restoration proposal is unknown. Mitigation proposed would be a funding contribution to assist with long-term management of invasive plant species on SP lands	No	No	>5 acres	Moderate cost for long-term endowment to allow SPs to continue eradicating gorse from SP lands.
6. Replacement of Mill Creek crossing on Department of Parks and Recreation (DPR) access road at MacKerricher SP with bridge	Remove culvert and replace with bridge to assist with flooding issues at DPR access road to MacKerricher SP.	Major. Potential issue with working with State Parks regarding site control; Potential to impact riparian and wetlands during construction Additional design, environmental clearance, and permits/consultation needed. Requires more time to work out than schedule allows.	No	No	<1 acre	High. Need design/engineering, clearance, and permits. Mitigation activities unlikely to take place on schedule with project impacts.
7. Big River road removal and replacement of 300+ stream culverts	Remove legacy logging roads and replace failing culverts with bridges	Major. Potential issue with working with State Parks regarding site control; SP staff will not work on projects until at least 2024. Additional design, environmental clearance, and permits/consultation needed. Requires more time to work out than schedule allows.	Yes	Yes	numerous	High. Need design/engineering, clearance, and permits. Mitigation activities will not take place on schedule with project impacts.

Mitigation Projects	Proposed Treatment	Constraints / Uncertainties	Satisfies "No Net Loss" (USACE, RWQCB)	Satisfies Wetland / OW Impacts (4:1 ratio)	Acres of mitigation available	Cost / Complexity
8. Purchase of Saunder's Landing (at Saunders Reef) for wetland / Waters / ESHA preservation	Purchase two parcels for wetlands / non-wetland waters / ESHA preservation; Coastal wetland restoration and ESHA creation and restoration activities at site; Coastal Trail connection between Schooner's Gulch SP and RCLC parcels at Hearn Gulch	Minor. Purchase is for preservation and restoration or aquatic resources and ESHA restoration. Need to couple purchase of property for preservation value with on-site mitigation and conduct substantial wetland restoration at Saunder's Landing via wetland restoration project	No	Yes	12 acres	Low. Acquisition of parcel may be expedited by providing $ to SCC for purchase and transference to MLT otherwise CT R/W process would require additional time to work out than schedule allows.
9. Stream enhancement and restoration projects on mainstem and South Fork of Ten Mile	Stream restoration projects on Ten Mile River; TNC has applied for Prop 1 funding to complete design on additional SF Ten Mile locations in 2022 for construction in 2023.	Major. Potential to impact riparian and wetlands during construction; Conversion of jurisdictional wetlands to OWs (side channel); Concern regarding funding overlap with Prop 1 grants that may pay for the design and mitigation $ will pay for the implementation.; Need clear separation of grant and mitigation $; Need baseline studies to determine if expected mitigation will be achieved	Unknown	Unknown	Several projects	High. Caltrans would need baseline studies and pay for design, permits, and construction. TNC willing to accept partial funding but Prop 1 funding is involved and causes potential issues for granting agencies

Mitigation Projects	Proposed Treatment	Constraints / Uncertainties	Satisfies "No Net Loss" (USACE, RWQCB)	Satisfies Wetland / OW Impacts (4:1 ratio)	Acres of mitigation available	Cost / Complexity
10. Replace Railroad Gulch crossing culvert on Forest Rd 720 and abandon segment of road	Upgrade culvert at CalFire's main entrance road into Mendocino Woodlandor SP	Potential to impact riparian and wetlands during construction. Need baseline studies to determine if expected mitigation will be achieved; project out of the Coastal Zone	Unknown	Unknown	<1 acre	Moderate. Engineering and plans are being developed by CalFire for project completion. Permits and consultation would be required prior to construction
11. Pudding Dam removal	Provide funding to assist with the removal of the Pudding Creek dam	Funding contribution only. Potential issues with numerous agencies, local governments, and landowner on pathway forward. Requires more time to work out than schedule allows; Out-of-kind mitigation	No	No	Unknown	Unknown. Funding contribution can be to the lead agency once an overall plan is known. Dam removal is complex, involves numerous parties, and is not a certainty.
12. Alder and Maple creeks daylighting project	Daylight two creeks that are currently culverted beneath old mill site	Highly likely that site contains numerous hazardous chemicals in the soil from decades of mill operations; Additional concerns regarding cultural resources present	Yes	Yes	~5-10 acres	Very High. In addition to permitting and construction costs to complete the project, CT would be required to properly remove and dispose of soil contaminated with hazardous materials.
13. Purchase credits from the Mendocino Coast Mitigation Bank	Purchase approved mitigation bank credits from the Mendocino Coast Mitigation Bank	BEI anticipated to be approved in spring 2023 but CCC will not issue road project permits prior to BEI approval; Issue with CT schedule as CT applies for permits ~1 year in advance of construction.	Yes	Yes	5 parcels included in the bank totaling ~580 acres	Low. Most cost effective for CT as cost/credit is ~50-60% the cost of typical PRM. CT and RES under contract for $18.5 million to create the Mendocino Coast Mitigation Bank for projects in the Coastal Zone of the Big-Navarro-Garcia watershed

1.3 Anticipated Agency Permits & Environmental Documents

The following agency permits are anticipated to be required to satisfy impacts associated with the Roadway Projects and planned to be mitigated offsite at Saunder's Landing:

1.3.1 CCC Coastal Development Permits (CDP)

The Cleone Shoulder Widening CDP (CDP #2021-0012), in addition to CDP applications for the Jack Peters Creek Bridge Project (anticipated CDP Application: 10/2022) and the Elk Creek Bridge Replacement Project (CDP #1-22-0446), would cover Caltrans mitigation activities on Saunder's Landing. Caltrans recognizes that a separate CDP may be required to implement the approved HMMP, pending discussions with Mendocino County.

1.3.2 NCRWQCB Water Quality Certifications

The Cleone Shoulder Widening Water Quality Certification (Certification) (WDID No. 1B21224WNME), in addition to Certifications for the Jack Peters Creek Bridge Project (anticipated Certification Application: 8/10/2022) and the Elk Creek Bridge Replacement Project (anticipated Certification Application: 8/5/2022) would cover Caltrans' mitigation activities on Saunder's Landing.

1.3.3 CDFW Lake and Streambed Alteration Agreements (LSAA)

The Jack Peters Creek Bridge Project LSAA (EPIMS Application Notification #28726) and the Elk Creek Bridge Replacement Project (EPIMS Application Notification #31736) would cover Caltrans' mitigation activities on Saunder's Landing.

1.3.4 Natural Environment Study (NES) Biological Memo

An assessment of the off-site Saunder's Landing mitigation project activities will be analyzed in a NES memo and amended in the Roadway Projects' environmental documents. The NES memo will evaluate the on-site biological resources and will assess any potential effects associated with the mitigation project activities. The off-site mitigation project activities at Saunder's Landing would be self-mitigating; however, Caltrans' Standard Measures and Best Management Practices would be implemented to ensure protection of sensitive resources.

Chapter 2. Environmental Setting

2.1 Study Area and Landscape Setting

Saunder's Landing is located approximately 10.2 miles north of the Mendocino-Sonoma County border and six miles south of Point Arena, along SR 1 in Mendocino County. The two parcels are bisected by SR 1, containing a 7.50-acre parcel to the west (western parcel) and a 4.5-acre parcel to the east (eastern parcel). Hearn Gulch, a perennial stream containing sensitive waters of the U.S./State, riparian, and SNC/ESHA biological communities, runs through the eastern parcel. The adjacent parcel to the north of the western parcel is a lookout/rest area, within the Caltrans ROW. To the south of the western parcel is a parcel owned by RCLC. Parcels to the north and south of the eastern parcel are privately owned. One large lot to the north is composed primarily of non-native grassland with intermixed riparian and SNC resources upstream along Hearn Gulch. There are four adjacent parcels within the Iversen Subdivision to the south of the eastern parcel (Appendix A).

Floristically, the project is situated within the North Coast sub-region of the Northwest Region of the California Floristic Province in coastal Mendocino County (Baldwin et al., 2012). Climate in the vicinity of the parcel is typically mild and wet during fall and winter and cool and dry during spring and summer. Average annual rainfall in the Fort Bragg area is 50.6 inches, most of which falls between October and May (Western Regional Climate Center 2021).

2.2 Existing Land Use

Saunder's Landing is under private ownership and was purchased with the intent to develop a residential dwelling at these locations (pers. comm. Nicolet Houtz, Mendocino Land Trust). Directly south of the eastern parcel is a large subdivision (Iversen Subdivision) which contains ~80 residential lots. Directly north of the eastern parcel is a similar sized lot that appears to be dominated by non-native grasslands that may offer suitable development potential for a similar subdivision. Additionally, portions of the eastern parcel contain similar habitats that occur in potential bishop pine restoration areas, upslope from riparian habitats along Hearn Gulch.

Currently, there is no identified land use activity at the eastern and western parcels as the site is uninhabited and unmanaged. As a result, the public uses the parcels to access the Hearn Gulch beach via the Caltrans lookout/rest area located directly north of the western parcel.

The continuous unauthorized access endangers sensitive wetland resources and plant and animal species present on the western parcel (as discussed in Section 2.8 below). Acquisition of these parcels for MLT to maintain in perpetuity would ensure that access to and through the site would be on a designated pathway, with signage, to deter the public from directly impacting sensitive resources while providing education and outreach on valuable coastal resources. Lands surrounding Hearn Gulch are predominantly privately owned with exception at the mouth where RCLC owns a parcel directly south of the Hearn Gulch mouth. Acquisition of the mitigation parcels will facilitate the future extension of the California Coastal Trail (CCT) by connecting the RCLC parcel to the south of Hearn Gulch to Saunder's Landing. Extension of the CCT is not part of the proposed mitigation for the Roadway Projects, rather, it will be done via a separate permitting process by MLT.

2.3 Topography

Areas on the western parcel include relatively flat coastal terrace prairie, sloping steeply downward towards Hearn Gulch in the center of the project area. On the eastern parcel, the project area is a sloping hillside that is a mix of non-native grassland, tanoak forest, bishop pine forest, and the riparian area of Hearn Gulch. Steep slopes indicative of gulch habitats are found on the eastern parcel with a perennial stream terminating at the Pacific Ocean directly downstream and adjacent to the parcels.

2.4 Soils

According to the United States Department of Agriculture (USDA)-Natural Resources Conservation Service (NRCS) (2021), soil map units present within the ESL are:

- Abalobadiah-Bruhel-Vizcaino complex, 30 to 50 percent slopes, comprising ~4.0 acres
- Cabrillo-Heeser complex, 0 to 5 percent slopes, comprising ~4.6 acres
- Irmulco-Tramway complex, 50 to 75 percent slopes, comprising ~3.4 acres

The following descriptions of the Abalobadiah and Cabrillo series are derived from USDA-NRCS (2021).

The Abalobadiah series consists of moderately deep, well drained soils formed in material weathered from sandstone. Abalobadiah soils are on coastal hills and mountains and have slopes of 9 to 75 percent. Cabrillo series consists of very deep, somewhat poorly drained soils formed in marine sediments. Cabrillo soils are on marine terraces and have slopes of 0 to 5 percent.

The following descriptions for the Irmulco-Tramway complex are derived from USDA-NRCS' Soil Survey of Mendocino County, California, Western Part (1999):

The Irmulco soil is very deep and is well drained. It formed in material derived from sandstone. Typically, the surface is covered with a mat of leaves and twigs about 1 inch thick. The surface layer is pale brown loam about 6 inches thick. The upper 35 inches of the subsoil is light brown loam. The lower 20 inches is light brown, pink, and reddish yellow clay loam. Soft sandstone bedrock is at a depth of about 61 inches. Permeability is moderate in the Irmulco soil. Available water capacity is high. The effective rooting depth is 60 inches or more. Surface runoff is medium or rapid, and the hazard of water erosion is moderate if the surface is left bare.

The Tramway soil is moderately deep to weathered bedrock and is well drained. It formed in material derived from sandstone. Typically, the surface is covered with a mat of leaves and twigs about 2 inches thick. The surface layer is light brownish gray loam about 7 inches thick. The upper 5 inches of the subsoil is pale brown loam. The lower 16 inches is light yellowish-brown clay loam. Soft, fractured sandstone is at a depth of about 28 inches. Permeability is moderate in the Tramway soil.

2.5 Hydrology and Watershed Information

Saunder's Landing is within the Alder Creek-Frontal Pacific Ocean watershed HUC 10 (HUC 1801010809); a watershed extending 293.5 square miles (187,840 acres) (WATERS 2021). Impacts, on-site mitigation, and revegetation, as well as the off-site mitigation (Saunder's Landing) for the Roadway Projects are in the same 8-digit HUC as the Big-Navarro-Garcia Watershed (18010108).

The western parcel is directly adjoined along the west and south borders by the Pacific Ocean. The nearest watercourse shown on the USGS quadrangles is Hearn Gulch, flowing through the eastern parcel and emerging directly south of the western parcel, bisecting the adjacent parcel owned by RCLC, where it flows into the Pacific Ocean. Hearn Gulch is a perennial stream, approximately 0.75-miles in length originating in upper stretches to the east of the Project site and terminating at the Pacific Ocean, adjacent to the western parcel at Hearn Gulch State Beach. Elevations range from 0 feet at the mouth to ~430 feet in the headwater areas.

2.6 Vegetation Communities

Site Description

The approximate 12-acre mitigation parcels consist of high-quality aquatic resources and vegetative habitat containing special status plant species and rare vegetation alliances. Biological surveys were conducted at the parcels on May 15 and 25, 2020 by Teresa Spade (Spade Natural Resources Consulting, SNRC) and a report titled, "*Hearn Extension Resource Information Report*" (2020) (Appendix G) was prepared that highlights sensitive plant communities/species present, delineates waters of the U.S./State, and notes areas where restoration on Saunder's Landing would be most appropriate. These surveys showed a variety of native and rare plants and ESHAs. The property contains two (2) California Native Plant Society (CNPS) List 1B plant species (Mendocino coast paintbrush [*Castilleja mendocinensis*] and purple-stemmed checkerbloom [*Sidalcea malviflora ssp. purpurea*]), a 1.129-acre riparian area along Hearn Gulch, and habitats that could be potential restoration areas to plant habitat (blue violet [*Viola adunca*]) for the Behrens Silverspot butterfly (*Speyeria zerene behrensii*), a federally listed endangered species. Seventeen different vegetation alliances have been documented on the two parcels and described in more detail in Appendix G.

The western parcel primarily supports coastal bluff scrub and mixed coastal terrace prairie dominated by native species. Other native plant communities include tufted hairgrass (*Deschampsia cespitosa*) meadows, coyote brush scrub, California oatgrass (*Danthonia californica*) meadows, and red fescue (*Festuca rubra*) grasslands. Non-native habitats include yellow bush lupine (*Lupinus arboreus*) scrub bordering the Caltrans ROW and iceplant which has invaded an approximate 0.350-acre CCA wetland.

The eastern parcel supports both wetland and upland native communities including red alder forest, bishop pine forest, tan oak (*Notholithocarpus densiflorus*) forest, wax myrtle (*Morella cerifera*), and coyote brush scrub. Non-native habitats include non-native grassland that is composed of many species including, but not limited to, purple velvet grass, spring vetch (*Vicia sativa*), sow thistle (*Sonchus arvensis*), and blue eyed grass (*Sisyrinchium montanum*).

On June 22, 2020, a follow up invasive species survey was completed, and a report of survey results was generated by SNRC (2020b) that identified and mapped the extent of invasive species present on the parcels. These survey results as well as the *Hearn Extension Resource Informational Report* for Saunder's Landing can be found in Appendix G.

Riparian Vegetation Discussion

Caltrans North Region Environmental staff including Mitigation Specialists, Tim Nelson and Denise Walker-Brown and Revegetation Specialist, Loriel Caverly, visited Saunder's Landing on February 28th and March 1st, 2022 to assess the extent of riparian habitat available at the site. Hearn Gulch is a perennial stream that flows through a drainage basin with steep northern and southern banks in the lower stretches, near the mouth and within the Project area. On the northern and southern banks, elevation is relatively flat from OHWM out to ~5-10' where the slope becomes very steep and creates a ravine type environment (Figures 3-4). Within Hearn Gulch and the floodplain, red alder forest is the most dominant vegetation alliance consisting of red alder, willow (*Salix* sp.), coffeeberry (*Frangula californica*), sword fern (*Polystichum munitum*), lady fern (*Athyrium filix-femina var. cyclosorum*), red elderberry, wild ginger (*Asarum caudatum*), thimbleberry, wild cucumber (*Echinocystis lobata*), California blackberry, cow parsnip, giant horsetail, bee plant (*Scrophularia californica*), and honeysuckle (*Lonicera hispidula*). A small trail to access the parcel and adjacent parcels was noted with a small walking bridge spanning the stream. Besides this small trail, the entirety of the floodplain contained mature and healthy vegetation with very low amounts of documented invasive species.

As elevation increases rapidly beyond the small floodplain, the dominant vegetation alliances are bishop pine and tanoak forests. For the bishop pine forest alliance, the main species present include bishop pine, California blackberry, bedstraw (*Galium* sp.), poison oak, bracken (*Pteridium aquilinum*), honeysuckle, and soft and common rush. For the tanoak forest alliance, the main species present include tanoak, honeysuckle, bracken, redwood sorrel (*Oxalis oregana*), black huckleberry (*Vaccinium ovatum*), manzanita (*Arctostaphylos sp.*), and madrone (*Arbutus menziesii*). The trail continues uphill through the tanoak and bishop pine forest habitats with an exclusionary fence to prevent cattle/humans from falling over the cliff edge. Similar to the floodplain, minor amounts of invasive species were noted in the upper reaches of the riparian zone.

Overall, vegetation within the riparian zone is mature, native, and lacks any concerning amount of non-native, invasive species. Vegetation alliances within these areas provide a variety of riparian functions including, but not limited to, flood control, water quality, shading, nutrients from leaf litter, large woody debris (LWD), wildlife habitat/connectivity, and bank stability. As a result, the defined riparian zone was measured to be approximately 1.129-acres and encompasses vegetation that spans from Hearn Gulch to the top of the ridge on the northern slope and the northern, western, and eastern property boundaries (Figure 5).

Figure 3. USGS 3DEP Elevation-Multi-Directional Hillshade Map showing elevation profile for riparian zone within eastern Saunder's Landing parcel at Hearn Gulch.

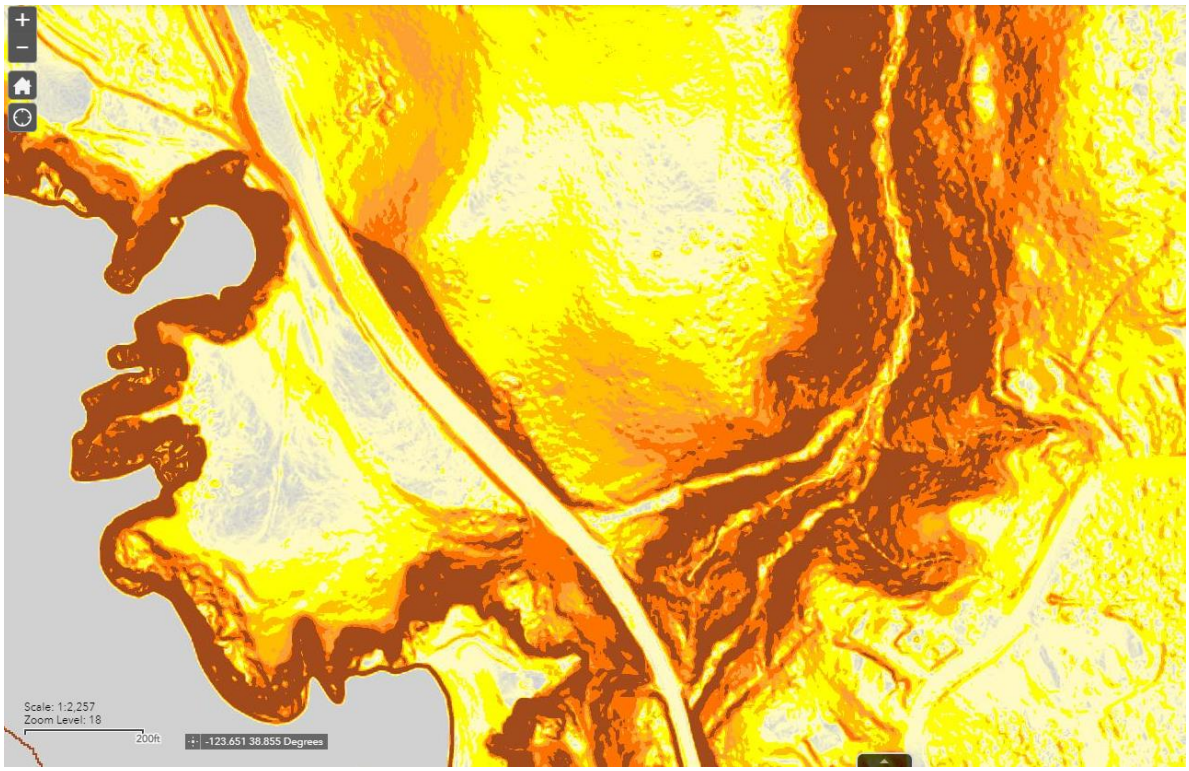


Figure 4. USGS 3DEP Elevation-Slope Map showing severity of slope within Hearn Gulch. Note dark red sections are steep elevation gradients.

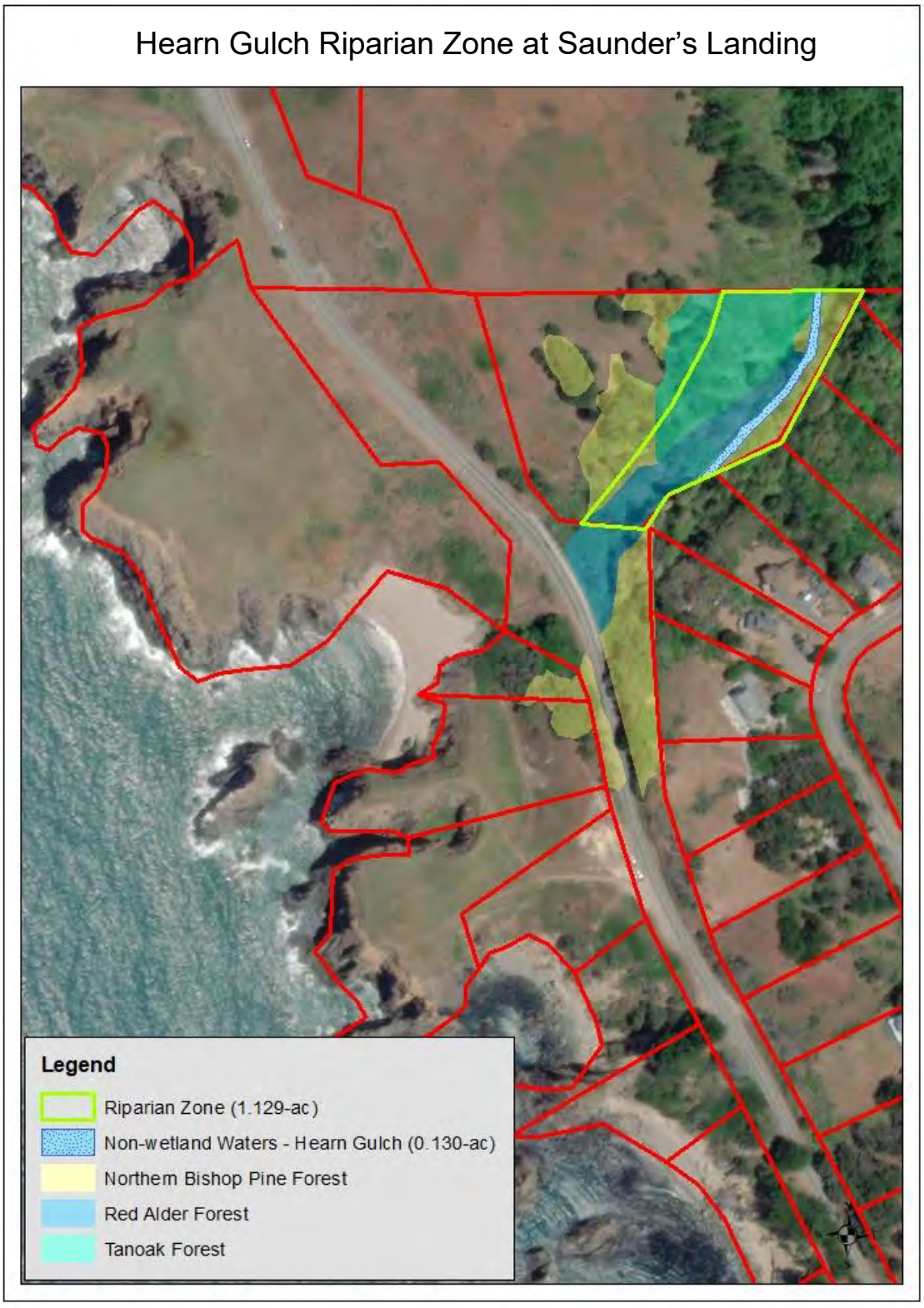


Figure 5. Saunder's Landing riparian zone boundaries.

Other Sensitive Biological Communities Discussion

In addition to waters of the U.S./State, CCA wetlands, and riparian ESHA, Saunder's Landing contains SNC/ESHA habitats that make up approximately 6.206-acres, or ~52% of the acreage for both parcels. SNCs/ESHAs found on Saunder's Landing include bishop pine forest, northern coastal scrub, coastal terrace prairie, and coastal bluff scrub. Additional SNCs/ESHAs including willow thickets, soft rush marsh, red alder, and coastal brambles are also present but are captured within this HMMP as "riparian habitat." Caltrans proposes to utilize existing SNC/ESHA acreage at Saunder's Landing as out-of-kind mitigation for impacts to riparian habitat and non-riparian SNC/ESHA (coastal brambles) for the Elk Creek Bridge Replacement Project (01-0E110). Details pertaining to each SNC/ESHA can be found in the sections below and Figure 6 depicts locations of these resources at Saunder's Landing. SNC/ESHA was mapped outside parcel boundaries therefore corresponding areas have been excluded for acreage computation as habitats are on Caltrans active ROW and/or RCLC property to the south of Saunder's Landing. Similarly, SNC/ESHA occurring within the defined riparian zone has been excluded from acreage computation and only "upland" acreage for these habitats have been accounted for.

Northern Bishop Pine Forest

Northern bishop pine forest (G3 S3)[5] is found along the Mendocino County coast and as far south as Monterey County. The species is often found on sterile, rocky soils with an understory of shrubs and perennial herbs that is almost continuous in open stands on moist sites or nearly absent from dense stands or dry, rocky sites (Holland 1986). Northern bishop pine forest is rare, highly imperiled along the Mendocino coast, and undergoing severe decline due to several pathogens and compounding factors such as drought and fire suppression. Northern bishop pine forest found at Saunder's Landing occurs within the eastern parcel adjacent to the non-native grasslands. Additional bishop pine occurs within the riparian zone of Hearn Gulch but are captured within this HMMP as riparian ESHA. Additional bishop pine occurring out of the riparian zone has been identified as other sensitive biological communities for this HMMP and is approximately 1.100-acres in size.

Northern Coastal Scrub

The Northern coastal scrub habitat is a mixed community of coyote brush scrubland (G5 S5) and wax myrtle scrub (G3 S3). This Northern Coastal Scrub community on Saunder's

[5] Alliance Rarity Ranking and Classification System: G3 S3: 21-100 viable occurrences worldwide/statewide, and/or more than 2,590-12,950 hectares.

Landing is dominated by coyote brush (*Baccharis pilularis*) and other native shrubs containing scattered grassy openings located on windy, exposed sites with shallow rocky soils ranging from sandy to heavy clay in composition (CNPS 2015). This community type is located in coastal areas from southern Oregon to Point Sur, Monterey County (Holland 1986). The coyote brush dominates, with poison oak, yellow bush lupine, field mustard (*Brassica* sp.), rigid hedge nettle, California beeplant, wild cucumber (*Marah oreganus*), maple-leaved checkerbloom (CRPR 4.2) (*Sidalcea malachroides*), Italian thistle (*Carduus pycnocephalus*), milk thistle (*Silybum marianum*), and cow parsnip (SNRC 2020). On Saunder's Landing, this mixed community represents approximately 1.200-acres and is located primarily on the southern border of the western parcel with a small amount occurring on the western border of the eastern parcel.

Wax myrtle scrub (G3 S3) primarily occurs along the coast in northern and central California though is found as far south as Los Angeles County and as far north as British Columbia. The wax myrtle scrub habitat is limited to 0.130-acre and is found at Saunder's Landing in association with three CWA wetlands found on both the southeastern portion of the western parcel and along the western border of the eastern parcel. Wax myrtle on the western parcel occurs in the southeastern portion of the western parcel and is in close association with coyote brush habitats. As noted above, the coyote brush scrub habitat has moderate levels of invasive species present that pose a risk to these sensitive habitats. Activities including the removal of invasive species present within the northern coastal scrub will be captured in the PAR as part of the long-term management of Saunder's Landing.

Coastal Terrace Prairie

Coastal terrace prairies are found discontinuously from Santa Cruz County north into Oregon on marine terraces near the coast with sandy loams, usually below 700 to 1,000 feet in elevation. Plant communities are typically dominated by herbaceous species (Holland 1986). The coastal terrace prairie habitat includes species such as maritime brome *(Bromus maritimus*), rigid hedge nettle (*Stachys rigida*), yarrow (*Achillea millefolium*), Henderson's angelica (*Angelica hendersonii*), beach strawberry (*Fragaria chiloensis*), gumweed (*Grindelia stricta*), and California blackberry (SNRC 2020). The coastal terrace prairie area at Saunder's Landing is approximately 3.321-acre and located entirely on the western parcel.

Overall, the coastal terrace prairie habitat within Saunder's Landing is composed of significant plant cover (approximately 80% native plant cover) with sensitive aquatic resources and plant species. Acquisition of the parcels will offer MLT the opportunity to preserve these habitats and species and conduct a variety of restoration that may include the

removal of invasive species, planting of additional native sensitive plant species or specific plants for rare and endangered species endemic to the Mendocino coast (e.g,. Behrens silverspot butterfly). Activities including the removal of invasive species present within the coastal terrace prairie will be captured in the PAR as part of the long-term management of Saunder's Landing.

Coastal Bluff Scrub

Coastal bluff scrub habitats are localized to sites along the immediate coast including the Mendocino County coastline. Due to the constant exposure to wind with high salt content, the soil is usually rocky and poorly developed with vegetation that can be described as low, often prostrate, scrub 5-50 cm high, forming continuous mats or more scattered. Dwarf shrubs, herbaceous perennials, and annuals are typically represented with varying degrees of succulence (Holland 1986). These communities often occur on vertical cliff faces and terraces near the shore where the influences of unstable substrate and marine climate (cool, moist, salt-laden air) are greatest and soils accumulate salts (Ford and Hayes 2007). Approximately 0.455-acre of coastal bluff scrub is present on the western parcel along the southwest bluff edge. Species present within the coastal bluff scrub habitats on Saunder's Landing include coast buckwheat (*Eriogonum latifolium*), gumweed, California phacelia (*Phacelia californica*), north coast dudleya (*Dudleya farinosa*), lizardtail, iceplant, and wild carrot (*Daucus carota*). Acquisition of the parcels will offer MLT the opportunity to preserve these habitats and sensitive species present and conduct a variety of restoration activities including the removal of invasive species (e.g., iceplant, Italian thistle, field mustard, bull thistle [*Cirsium vulgare*]). Such activities will be captured in the PAR as part of the long-term management of Saunder's Landing.

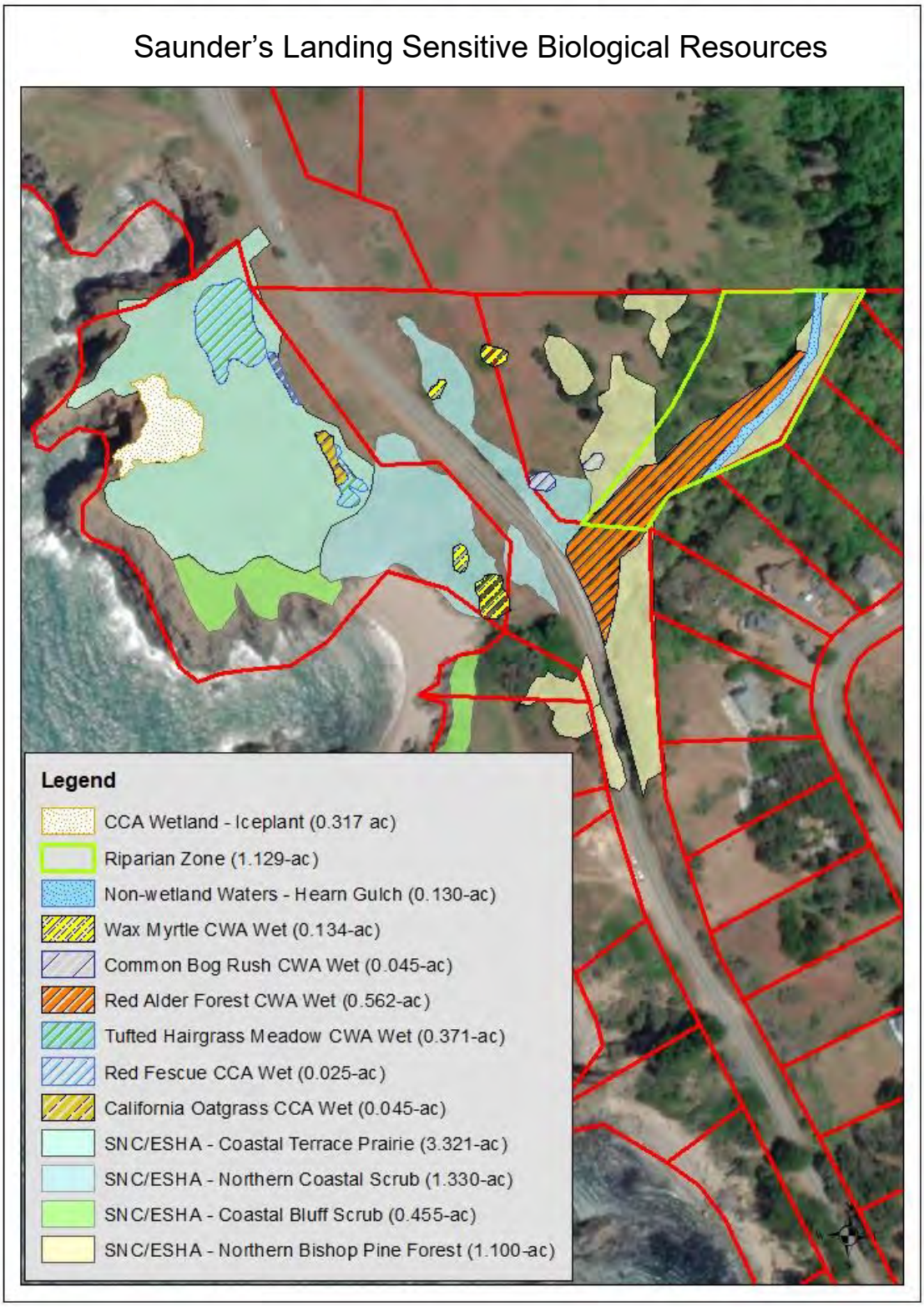


Figure 6. Sensitive Biological Resources at Saunder's Landing

Upland Riparian Buffer Habitats

In addition to waters of the U.S./State, CCA wetlands, riparian ESHA, and SNC/ESHA biological communities, Saunder's Landing contains upland riparian habitats that make up approximately 1.526-acres. The upland riparian buffer habitats are found on the eastern parcel, immediately north of the identified riparian zone, and include vegetative alliances including tanoak forests and native/non-native grasslands. Additional habitats including northern bishop pine forests occur within the upland riparian buffer area though these resources have been captured within the Other Sensitive Biological Communities and Riparian Vegetation sections above.

Within the upland riparian buffer habitats on the eastern parcel, rattlesnake grass and sweet vernal grass are the most dominant vegetation alliance covering approximately 1.292-acres of the grassland. Also significantly present were purple velvet grass (*Holcus lanatus*), spring vetch (*Vicia sativa*), sow thistle, Douglas iris (*Iris douglasiana),* blue eyed grass, California poppy (*Eschscholzia californica*), sheep sorrel (*Rumex acetosella*), tufted hairgrass, and coyote brush. Within the tanoak forests, the species present include tanoak, honeysuckle, bracken, redwood sorrel (*Oxalis oregana*), black huckleberry (*Vaccinium ovatum*), manzanita (*Arctostaphylos* sp.), and madrone (*Arbutus menziesii*) (SNRC 2020). The approximate 0.234-acre tanoak forest is located along the northeastern boundary of the eastern parcel directly above the identified riparian zone.

Due to the lack of sensitive communities present within these habitats (particularly the grasslands), preservation of the upland riparian buffer habitats is important due to the increased potential for this area to be developed. As noted on the site maps and as evident during site visits, the Iversen Subdivision located directly south of the eastern parcel, was developed within and adjacent to the riparian zone for Hearn Gulch in similar habitats. Additionally, 2-3 large parcels directly north of the eastern Saunder's Landing parcel contain similar grassland habitats that have the potential for residential development. Given the increasing growth pressure on the Mendocino coast, this land may become suitable/desirable for development (e.g., large scale subdivisions) in the future similar to the Iversen Subdivision. Though Caltrans is not proposing mitigation credit for the 1.526-acres of available habitats at Saunder's Landing, acquisition of these parcels and transference to the MLT would ensure nearby aquatic resources are protected in perpetuity via a large vegetative riparian buffer (~100-200 yards).

2.7 Wetlands and Waters

Evaluations of potential jurisdictional waters of the U.S./State took place on May 15 and 25, 2020, by SNRC. The evaluations were based on routine on-site determination methods described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the supplemental procedures and wetland indicators provided in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region, Version 2.0* (USACE 2010); the *2016 Wetland Plant List for the Western Mountains, Valleys and Coast Region* (Lichvar et al., 2016); and the *Field Indicators of Hydric Soils in the United States: A Guide for Identifying and Delineating Hydric Soils, Version 8.2* (USDA-NRCS 2018). Hydrophytic vegetation was determined using the *USACE National Wetlands Plant List Indicator Rating Definitions* (2012) and the *USACE Wetland Plant List for the Western Mountains, Valleys and Coast* (2016).

CCA/CWA Wetlands Discussion

The three parameters used to determine the presence of CWA Section 404 wetlands are (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. According to the 1987 Manual, *"...[E]vidence of a minimum of one positive wetland indicator from each parameter (hydrology, soil, and vegetation) must be found in order to make a positive wetland delineation (p 12)*."

CCA Section 30121 defines a wetland as *lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens.*

Wetlands identified as CCA wetlands within Saunder's Landing are also considered CWA Section 401/404 wetlands as described above. The delineators identified 13 wetlands encompassing 1.182-acres of potential CWA and CCA jurisdictional wetlands within Saunder's Landing. The delineated wetlands account for approximately 13% of the 12-acres that comprise Saunder's Landing. These features could be classified under the Cowardin system (FGDC 2013) as combinations of freshwater forested/shrub wetland (palustrine forested, broad-leaved deciduous, seasonally flooded [PF01C]) or freshwater emergent wetlands (palustrine emergent, persistent, seasonally saturated [PEM1B]).

Wetlands inventoried at Saunder's Landing include both presumed CCA (one parameter) and USACE (three parameter) wetlands. A total of 13 wetlands were identified and were present in the coastal terrace prairie on the western parcel and within the eastern parcel as

depressional wetlands as well as along Hearn Gulch. Methods for wetland delineations included the excavation of three wetland pits on the western parcel. The data collected was limited to these three data collection locations though additional wetlands may be present on the parcels. Where wetland data pits were not dug, wetlands were presumed based on presence of hydrology or dominance of hydrophytic plant species (SNRC 2020). Table 18 below lists wetlands identified and inventoried on Saunder's Landing. More details and mapping for wetlands at Saunder's Landing are included in the *Hearn Extension Resource Informational Report* included in this HMMP (Appendix G).

Non-Wetland Waters Discussion

Surveys conducted by qualified Caltrans staff on February 28th and March 1st, 2022 followed a standard USACE OHWM Delineation Datasheet used by Caltrans staff and contained components such as Stream Description and Background Information, Measurements and Illustration of Transect, Slope Assessment, Substrate Composition, Vegetation Composition, and Additional Information. Within the parcels, Hearn Gulch has high quality habitat that contains a variety of water features including deep pools, riffles, flatwater, LWD, and islands, mature riparian vegetation (see Section 2.6 above), and aquatic species including amphibian and invertebrates (surveyors noted three [3] rough-skinned newt adults and numerous invertebrate species including caddisfly larval/pupal in cases).

Surveyors noted OHWM between 12.2-12.7' and pool depths (at thalweg) was between 0.7-1.0' at time of survey with deeper pools ~2-3' in depth observed above and below transect locations. Embeddedness varied between the transects 35-60% (silt 5-10 %, sand 30-50%) as did other sediment categories including gravel (10-15%), cobbles (20-25%), and boulders (0-40%). Above OHWM, sediment composition was primarily silt (20-60%) and sand (35-60%) with little to no gravel (0-5%), cobble (5%), and boulders (0-10%).

Vegetation was also noted both above and below OHWM at each transect location to capture absolute percent cover of the following layers: tree, shrub, herb, and bare ground. Below OHWM, vegetation percentages varied between the layers, tree (20-40%), shrub (5-10%), herb (5-25%), and bare ground (35-95%). Above OHWM, surveyors measured vegetation from bankfull to approximately 1-meter upland. Vegetation was predominantly in the herb layer (30-85%) and tree layers (15-20%). The shrub layer was noted as 0-5% and bare ground was noted as 5-10%.

Table 18. Aquatic Features on Saunder's Landing.

Aquatic Feature	Feature Type	Wetland Classification
W1 (noted as SP1 on report)	CWA wetland	PEM1B (Palustrine emergent, persistent, seasonally saturated)
W2 (noted as SP2 on report)	CWA wetland	PEM1B (Palustrine emergent, persistent, seasonally saturated)
W3 (noted at SP3 on report)	CWA wetland	PEM1B (Palustrine emergent, persistent, seasonally saturated)
W4	CWA wetland	PEM1B (Palustrine emergent, persistent, seasonally saturated)
W5	CWA wetland	PEM1B (Palustrine emergent, persistent, seasonally saturated)
W6	CWA wetland	PEM1B (Palustrine emergent, persistent, seasonally saturated)
W7	CWA wetland	PEM1B (Palustrine emergent, persistent, seasonally saturated)
W8	CWA wetland	PEM1B (Palustrine emergent, persistent, seasonally saturated)
W9	CWA wetland	PEM1B (Palustrine emergent, persistent, seasonally saturated)
W10	CWA wetland and non-wetland waters (Hearn Gulch)	PF01C (Palustrine forested, broad-leaved deciduous, seasonally flooded)
W11	CCA wetland	1-parameter wetland based on dominance of iceplant vegetation
W12	CCA wetland	1-parameter wetland based on dominance of red fescue vegetation
W13	CCA wetland	1-parameter wetland based on dominance of California oatgrass

State Protected Aquatic Resources Areas Discussion

Saunder's Landing is situated along the coastline of the 9.36 square-mile Saunders Reef State Marine Conservation Area (SMCA) Marine Protected Area (MPA) and the Saunders Reef Area of Special Biological Significance (ASBS) State Water Quality Protection Area. According to the CDFW's MPA website (2022):

> *"One of the goals for Saunders Reef State Marine Conservation Area is to protect the kelp forests, rocky reefs, and deep, sandy seafloor habitat found there. Hermit crabs, marine snails, barnacles, and mussels find a home in rocky tidepools, while seals and sea lions rest on the beaches. Saunders Reef slopes away from the beach to a rocky shelf with several pinnacles. The reef is fully encompassed within the conservation area and is made of bedrock, boulder fields, and gravel areas that provide cracks and*

crevices where abalone shelter. Black rockfish, vermilion rockfish, and yelloweye rockfish live on and near the reef, as well as urchins, sea stars, and giant Pacific octopus."

Similarly, the State Water Resources Control Board website (2022) identifies the 730-acre Saunders Reef ASBS State Water Quality Protection Area, noting:

"'Saunders Reef' Area of Special Biological Significance has 1.6 miles of coastline and runs parallel to Highway 1 along a fairly rural part of the northern California coast.

Key pollution threats include drainage from home septic tanks at the southern end of the ASBS and storm runoff.

This is a well-known area with scuba divers and has historically been famous for abalone."

This ASBS is designated through State Water Resources Control Board's Resolution No. 74-28 for protection of Kelp Beds at Saunders Reef, Mendocino County. All work to be completed on Saunder's Landing (e.g., invasive species removal) would not have any direct or indirect impact on the SMCA MPA and/or ASBS State Water Quality Protection Area.

2.8 Special Status Species

Sensitive plant and animal species surveys occurred during site visits to Saunder's Landing on May 15 and 25, 2020 by SNRC. Special status plant species including Mendocino coast paintbrush and purple-stemmed checkerbloom were observed on the subject parcels. Additionally, special status wildlife species including shoulderband snails, cormorant nests, and Sonoma tree voles were noted during the site surveys. Shoulderband snails were observed on the western parcel, evidence of Sonoma tree vole occurrence was seen on the eastern parcel within the bishop pine forest, and cormorant nests were observed along the edge of the rocky bluffs surrounding the parcels as well as on nearby offshore rocks.

A Biological Resources Memorandum for Saunder's Landing will address other special status species that may potentially occur within or adjacent to the mitigation parcels.

2.9 Cultural and Archaeology Resources

A cultural resource inventory effort (archaeological survey) will occur on Saunder's Landing prior to acquisition. This inventory effort will require no ground disturbance other than removing occasional small areas of ground cover to view mineral soils.

In addition, tribal consultations with the local Native American tribes concerning this mitigation effort will occur in an effort to determine if there are any non-archaeological cultural resources known to exist at this location and if there are concerns about any of the proposed mitigation approaches. If any cultural resources are identified from the inventory or consultation effort, these will be protected (through the establishment of Environmentally Sensitive Areas [ESAs]) from all ground-disturbing activities which would occur as part of the mitigation effort. In addition, the following standard protocols will be implemented during this mitigation effort:

CR-1: **Unexpected Discovery of Cultural Materials.** If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area would be stopped until a qualified archaeologist can assess the nature and significance of the find in consultation with the State Historic Preservation Officer. If significant, the provisions outlined in 36 CFR800.13 would then be followed.

CR-2: Procedures for Human Remains. If human remains are 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 California Public Resource Code (PRC) 5097.98, if the remains were thought to be Native American, the coroner would notify the Native American Heritage Commission (NAHC) which would then notify the Most Likely Descendent (MLD). Further provisions of PRC 5097.98 are to be followed as applicable.

PA-1: In the unlikely event that fossils are encountered during project excavations, Caltrans Standard Specification 14-7 would be followed. This standard specification states that if unanticipated paleontological resources are discovered at the job site, all work within 60 feet would stop, the area around the fossil would be protected, and the resident engineer would be notified.

Chapter 3. Off-site Mitigation Requirements

Purchase of Saunder's Landing is essential for the preservation of sensitive aquatic and vegetative habitats as well as sensitive plant and animal species. Additionally, acquisition of the parcels allows Caltrans to perform much needed substantial restoration of wetland and SNC/ESHAs currently impacted by invasive plant species. Several invasive plants have begun to creep in and slowly degrade wetlands and other sensitive habitats present on Saunder's Landing. One prominent invasive species observed impacting wetlands on-site is iceplant or sea fig (*Carpobrotus spp*.). Iceplant is an invasive plant that inhabits coastal ESHA environments including CCA wetlands and coastal bluffs, terrace prairies, and grasslands. The species is known to create dense mats of vegetation that increase soil organic matter over time, allowing new non-native species to invade. Like other invasive species, such as English ivy (*Hedera helix*), small stem fragments can regenerate into a new plant, making control of the species difficult if not aggressively treated and managed in the long-term (Cal-IPC 2021). As part of the off-site mitigation for impacts associated with the Roadway Projects, Caltrans proposes to substantially restore impacted wetlands and SNCs/ESHAs through aggressive treatment of the iceplant and all identified invasive plants rated as "High" according to Cal-IPC[6] (non-native annual grasses excluded), continual maintenance and monitoring for five years, and by providing an endowment to the MLT to perform long-term management of the restored habitats. Cal-IPC High rated species known to be present on Saunder's Landing and which shall be maintained and monitored by Caltrans include star thistle (*Centaurea* sp.) and yellow-bush lupine (*Lupinus arboreus*). Collectively, iceplant and all other invasive species rated as High according to Cal-IPC (with the exception

[6] Cal-IPC (http://www.cal-ipc.org/): The California Invasive Plant Inventory categorizes non-native invasive plants that threaten the state's wildlands. Categorization is based on the assessment of the ecological impacts of each species. The Inventory categorizes plants as High, Moderate, or Limited, reflecting the level of each species' negative ecological impact in California:

- **High:** These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.
- **Moderate:** These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.
- **Limited:** These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

of non-native, annual grasses) will be referred to hereinafter as "target invasive plant species."

Discussions about and site visits to Saunder's Landing with State agency and non-profit representatives regarding acquisition as potential mitigation to satisfy permittee mitigation for the Roadway Projects have taken place during the following meetings:

- On June 11, 2020, staff from Caltrans met with RCLC representatives for a tour of Saunder's Landing.
- On November 30, 2020, staff from Caltrans and RCLC met to discuss the possibility of partnering to acquire Saunder's Landing for both wetland restoration and preservation mitigation value. RCLC had previously worked extensively with the private landowner (Mr. LaBoube) to acquire a letter of intent to sell the property (Appendix B) and with SCC staff to acquire a land appraisal. Additionally, SCC had previously committed up to half of the appraised land value to acquire Saunder's Landing for MLT. After further discussions and assessment of the property's mitigation values when combined with on-site mitigation at the Roadway Projects, Caltrans reached out to CCC staff to schedule a site visit to assess the acquisition as a viable mitigation option.
- On October 19, 2021, staff from CCC, RCLC, Mendocino Land Trust, and Caltrans met at Saunder's Landing to tour the western parcel, review biological reports, discuss RCLC/Mendocino Land Trust's plans for the site, and understand Caltrans' proposed mitigation strategy.
- A follow-up meeting occurred on November 29, 2021 with staff from CCC, SCC, and Caltrans to discuss Caltrans proposed mitigation strategy.
- Meeting with NCRWQCB staff on January 7, 2022 to discuss Caltrans mitigation proposal for Cleone Shoulder Widening Project (01-0G600).
- A follow-up meeting occurred on January 18, 2022 with CCC staff to discuss the mitigation proposal.
- A follow-up meeting occurred on February 4, 2022 with RCLC and MLT staff to discuss next steps for the acquisition of Saunder's Landing.
- Site visit to Saunder's Landing with CCC staff on March 21, 2022.

- Site visit to Saunder's Landing with agencies including NCRWQCB, CCC, and CDFW on March 29, 2022.
- Meeting with CDFW, CCC, SCC, RCLC and MLT on April 26, 2022, wherein a decision was made that MLT would assume ownership and management responsibility of the Saunder's Landing and NFWF would hold the endowment.
- Beginning in April 2022, monthly check-in calls with SCC, MLT, RCLC, CCC, NCRWQCB, and CDFW to provide updates on the progress of the mitigation agreement, status of land ownership, and anticipated schedule as it aligns with construction schedules.

Following acquisition of the property, MLT, RCLC and SCC informally agreed that for Caltrans to meet PRM requirements for impacts identified in this HMMP, Caltrans may perform mitigation efforts at the site. Table 19 below outlines the tasks and anticipated timeline to complete Mitigation Agreements to transfer acquisition and endowment funds, record deed restrictions, and commence restoration activities.

Table 19. Tasks and anticipated timeline for proposed mitigation at Saunder's Landing.

Task	Anticipated Date of Completion
Saunder's Landing Transfer of Funds Mitigation Agreement executed Agreement between Caltrans, SCC, and MLT wherein Caltrans agrees to transfer 100% of the funds to SCC for the acquisition of Saunder's Landing by MLT	April 2023
Transfer of Saunder's Landing acquisition funds to SCC	April-May 2023
SCC Board approves granting funds to MLT for acquiring Saunder's Landing Grant Agreement between SCC and MLT	April-June 2023
Construction begins on Roadway Projects	June 2023
Saunder's Landing Transfer of Endowment Funds Mitigation Agreement executed Agreement between Caltrans, NFWF, and MLT wherein Caltrans agrees to deposit a negotiated lump sum amount into an interest-bearing account for both a wasting and non-wasting long-term endowment.	June 2023

Task	Anticipated Date of Completion
Completion of Saunder's Landing probate period/Opening of escrow period Upon initiation of the escrow period, SCC will transfer acquisition funds into an escrow account for the purchase of Saunder's Landing by MLT	June-September 2023
Estimated close of escrow period for Saunder's Landing/Deed Recording	October 2023-January 2024
Implementation of habitat enhancement activities on Saunder's Landing (following property acquisition)	October 2023 - November 2023
Saunder's Landing endowment funded (following deed recordation)	December 2023 - March 2024

3.1 Preservation Mitigation Discussion

Proposed mitigation at Saunder's Landing entails both enhancement and/or preservation of sensitive aquatic, riparian, and SNC/ESHA resources for impacts associated with the Roadway Projects. For the NCRWQCB to consider preservation as applicable mitigation for project impacts, the following criteria must be met:

(i) The resources to be preserved provide important physical, chemical, or biological functions for the watershed

(ii) The resources to be preserved contribute significantly to the ecological sustainability of the watershed. In determining the contribution of those resources to the ecological sustainability of the watershed, the permitting authority must use appropriate quantitative assessment tools where available

(iii)Preservation is determined by the permitting authority to be appropriate and practicable

(iv)The resources are under threat of destruction or adverse modifications; and

(v) The preserved site will be permanently protected through an appropriate real estate or other legal instrument (e.g., easement, title transfer to state resource agency or land trust).

The following sections will provide details pertaining to how the preservation mitigation proposed at Saunder's Landing aligns with goal, policies, and objectives for the Mendocino

coast and associated watersheds in order to satisfy mitigation for the Roadway Projects' impacts.

(i) The resources to be preserved provide important physical, chemical, or biological functions for the watershed

Resources to be preserved include wetlands, non-wetland waters, riparian, and SNC/ESHA resources. Saunder's Landing is located along the Mendocino coastline with the western parcel directly adjoining the Pacific Ocean near Iverson Point. Throughout the parcel, numerous resources are present including a perennial, class II stream (Hearn Gulch) and associated high quality riparian habitats, three-parameter wetlands, sensitive upland plant communities including coastal terrace prairie, northern bishop pine, northern coastal scrub, and coastal bluff scrub, and sensitive animal species including Sonoma tree vole (*Arborimus pomo*), shoulderband snails, and cormorant species. Additionally, just offshore of Saunder's Landing is located the Saunders Reef SMCA MPA and ASBS State Water Quality Protection Area. Fully functioning resources present at Saunder's Landing not only provide important physical, chemical, and biological functions for the habitats on site, but resources such as wetlands and a healthy thriving riparian habitat help to filter potential pollutants that may impact Hearn Gulch and the downstream, offshore Saunders Reef SMCA MPA and ASBS State Water Quality Protection Area.

Waters of the U.S./State (CWA/CCA Wetlands and Non-Wetland Waters) & Riparian Habitats

Saunder's Landing contains approximately 1.112-acres of CWA palustrine wetlands, 0.070-acre of CCA (1-, 2-parameter) wetlands, and 0.130-acre of a class II perennial stream, Hearn Gulch (non-wetland waters). The waters of Hearn Gulch and associated adjacent wetlands are high in quality as associated vegetation is native with little to no non-native, invasive species present. Hearn Gulch is approximately 0.75-miles in length and flows through the eastern parcel, through a culvert under SR1, and terminates at the Pacific Ocean at Hearn Gulch State Beach. Directly offshore of the Hearn Gulch Beach is the Saunders Reef SMCA MPA and ASBS State Water Quality Protection Area which is protected under statute by both the CDFW and NCRWQCB. Fully functioning aquatic resources present on Saunder's Landing assist with the removal of physical, chemical, and biological pollutants that may pose a threat to both groundwater and surface water quality. Currently, qualitative analysis of Hearn Gulch indicates that water quality is high as numerous invertebrate species, including caddis fly larvae/pupal in case and three rough-skinned newts were noted during site surveys. Surveyors also noted cold surface water temperatures and low turbidity levels

assisted by a healthy, mature riparian zone that has little to no anthropogenic disturbance. Overall, aquatic resources currently present on Saunder's Landing are highly functioning for the watershed and are vitally important to protecting beneficial uses of resources onsite and those areas that may be impacted downstream as a result of impacts occurring upstream (e.g., Saunders Reef SMCA MPA & ASBS State Water Quality Protection Area).

Riparian resources present on Saunder's Landing include 1.129-acres of sensitive vegetation located on the eastern parcel along Hearn Gulch. The dominant vegetation alliances include red alder, willow sp., northern bishop pine and tanoak forests. Site visits by Caltrans and regulatory staff noted that the riparian present along Hearn Gulch is highly functioning with little presence of invasive plant species. The mature riparian onsite at Saunder's Landing provides vitally important functions to maintaining good water quality in the Hearn Gulch drainage. As noted above in the Waters of the U.S./State section, Hearn Gulch was as having good water quality and providing important habitat to resident animal species. Overall, the riparian resources currently present on Saunder's Landing are highly functioning for the watershed to maintaining cold, coastal stream water temperatures, maintaining capacity to filter out potential physical, chemical, and biological pollutants that threaten water quality for Hearn Gulch and the Saunders Reef SCMA MPA and ASBS State Water Quality Protection Area, and provide nutrients via leaf litter and wildlife habitat from LWD inputs to the system.

SNC/ESHA Resources

SNC/ESHAs present on Saunder's Landing include 6.206-acres of other sensitive biological resources such as bishop pine forests, very high-quality coastal terrace prairie, northern coastal scrub, and coastal bluff scrub. The Northern bishop pine forest (G3 S3) at Saunder's Landing is overall healthy though given the declining trajectory of the species, preservation of this upland riparian buffer habitat and similar suitable habitats (adjacent non-native grasslands) is vital. As this habitat is directly upland of the identified riparian zone on the eastern parcel, the preservation of this area is important as the neighboring non-native grassland area has been identified as potentially developable. Though regulations from the CCC may prevent or deter the removal of northern bishop pine forest from a regulatory standpoint, the development within the non-native grasslands poses a risk not only to the northern bishop pine forest but to the nearby riparian zone and Hearn Gulch. The acquisition of Saunder's Landing offers the opportunity for MLT to manage northern bishop pine and adjacent habitats appropriately and utilize nearby individuals for any restoration possibilities to maintain genetic integrity. Additionally, evidence of Sonoma tree voles was noted on the eastern parcel within the bishop pine forest (SNRC 2020).

The Northern coastal scrub habitat is a mixed community of coyote brush scrubland (G5 S5) and wax myrtle scrub (G3 S3). While the Coyote Brush Scrubland Alliance is "demonstrably secure" statewide and globally (G5 S5), at Saunder's Landing it is considered an ESHA by the CCC given that it supports sensitive native plant species, is contiguous with SNC and ESHA, and is vulnerable to disturbance due to the presence of easily erodible soils. It supports two CWA scrub-shrub wetlands containing wax myrtle scrub, which represents a SNC (G3 S3) and one CWA common bog rush wetland. Preservation and management of these areas will allow MLT to remove invasive species present that threaten to convert this habitat which poses a water quality risk to nearby coastal resources.

Coastal terrace prairie dominates the western Saunder's Landing parcel and is considered a sensitive community/habitat by both CDFW and CCC. Within the coastal terrace prairie, other sensitive biological communities can be found including two CWA palustrine wetlands dominated by tufted hairgrass meadows. Additionally, within the coastal terrace prairie habitat, sensitive plant species with a CNPS List 1B rating include the Mendocino coast paintbrush and purple-stemmed checkerbloom. Coastal terrace prairie habitats are declining on the Mendocino coast due to numerous threats therefore preservation of these habitats will provide important habitat to species that rely upon them for survival (e.g., Behren's silverspot butterfly). Additionally, due to the location of these habitats along the Mendocino coast, preservation of coastal terrace prairie provides buffer habitat to ensure that threats from physical, biological, and chemical pollutants to coastal resources are minimized or eliminated.

Coastal bluff scrub habitats are localized to sites along the immediate coast including the Mendocino County coastline. At Saunder's Landing, coastal bluff scrub is located along the southern edge of the western parcel and contains many sensitive plant species. Overall, the coastal bluff scrub habitat at Saunder's Landing, though limited, is relatively high quality. Preservation and management of these habitats is highly important due to its decreasing abundance along the Mendocino coast. The limited distribution of the habitat along the Mendocino coast is most likely due to the habitat's sensitivity to livestock grazing pressures (Ford and Hayes 2007). Similar to coastal terrace prairie habitats, preservation of these habitats provides much needed protection to buffer habitats adjacent to coastal resources. Acquisition of the parcels with long-term funding via an endowment will offer MLT the opportunity to preserve these habitats and sensitive aquatic resources present and conduct restoration via a long-term management plan.

(ii) The resources to be preserved contribute significantly to the ecological sustainability of the watershed. In determining the contribution of those resources to the ecological

sustainability of the watershed, the permitting authority must use appropriate quantitative assessment tools where available

The resource values of the Mendocino coast are evidenced by the establishment of state parks, forests, reserves and preserves, including Sinkyone Wilderness State Park, MacKerricher State Park, Jackson Demonstration State Forest, Jug Handle State Reserve, Point Cabrillo Reserve, Caspar Headlands State Reserve, Russian Gulch State Park, Van Damme State Park, and Navarro Beach State Park, in addition to recent acquisitions including those at Westport, Seaside Beach, South Noyo Bluffs, Caspar Headlands, Navarro Point, Big River, and Hearn Gulch (MLT 2003). The preserve at Hearn Gulch is owned and managed by the RCLC and is immediately adjoining the south edge of the western parcel. RCLC and MLT plan to connect Saunder's Landing to the adjoining preserve via the CCT and will work with Caltrans to work on easements to connect the trail further north to Schooner's Gulch State Park. The acquisition and transference of these parcels would place protection measures over an approximately 1-mile segment along the coast spanning from Schooner Gulch State Park/Bowling Ball Beach to the north to RCLC's Hearn Gulch preserve to the south.

MLT's Mendocino County Coastal Conservation Plan (2003) noted that one of the greatest threats facing Mendocino County's resources is a decline in the quality of water in coastal streams. According to the Mendocino County General Plan (2009), the most critical surface water quality problems in Mendocino County are sedimentation and, to a lesser degree, water temperature. Sedimentation issues arise from manmade sources including current and historical land uses, such as logging, agriculture, mining, processing of alluvial aggregate material, road construction and erosion from unpaved roads, and other development-related projects within the county. Temperature issues arise from the volume of water flowing in the stream, the amount of sunlight reaching the stream water surface, and the daily average air temperature. Groundwater contamination is also a threat to water quality and for Mendocino County, the greatest risk of contamination occurs in recharge areas that contain excavation sites, septic tanks and agricultural areas with heavy applications of fertilizers or pesticides. As detailed above, qualitative assessments of Hearn Gulch from recent site visits show that the perennial, class II stream has good water quality; therefore, preservation of these resources provides support towards ecological sustainability of aquatic resources in the watershed. Additionally, the mature, healthy riparian resources onsite provide critical functions to ensure good water quality by filtering potential pollutants, stabilizing hillsides and reducing sediment inputs, and providing canopy cover/shade to maintain cool temperatures needed by animal species throughout all their life stages.

Protection of the SNC/ESHA resources onsite include the preservation of habitats listed by CDFW and CCC as sensitive due to the limited extent of these rare coastal communities and habitats. The rare habitats listed as SNC/ESHA are prime candidates for preservation based on the location of other protected lands in the vicinity. As mentioned earlier, Saunder's Landing is located between protected lands to the north and south. Preservation and incorporation of these habitats into similar long-term management plans, executed by MLT, will ensure that sensitive plant and animal communities relying on protection from external threats such as development, illegal encroachment, invasive species, etc. will be protected in perpetuity. The addition of these lands into a larger contiguous protection area will offer great benefit to ensuring continued ecological sustainability of these sensitive habitats within the watershed.

Mendocino County Coastal Conservation Plan

MLT's Mendocino County Coastal Conservation Plan (2003) identified conservation strategies for critical coastal resources which included a summary of goals, objectives, threats, and strategies to protect listed resources. The following goals and objectives listed in this plan align with stated project goals and objectives for the Roadway Projects' proposed preservation mitigation which contributes significantly to the ecological sustainability of the watershed. The Biological Critical Resource Category lists the following goals, objectives, threats, and strategies:

Critical Resources Category: Biological

Summary of Critical Biological Resources (resources listed are those present or adjacent to Saunder's Landing):

- Special Plant Communities as listed by the California Natural Diversity Data Base (CNDDB):
  - Coastal and Valley Freshwater Marsh
  - Coastal Terrace Prairie
  - Northern Coastal Bluff Scrub
- Other Unique Biological Communities and Habitats:
  - Freshwater Wetlands and Ponds
  - Riparian Areas
  - Nesting Seabird Sites
  - Kelp Beds
  - Mussel Beds
  - Native Conifer Forests
  - Migratory Bird Resting and Feeding Areas

  - Wildlife Corridors
- Federally Listed Threatened or Endangered Plant and Animal Species
- State Listed Animal Species
- Additional Animal Species of Concern
- Listed Plant Species

Goals: (All) Biological Resources

- Protect and restore the unique assemblage of Mendocino County's coastal communities and rare habitats

Objectives: Special Plant Communities

- Protect large, connected blocks of un-fragmented lands that support special plant communities

Objectives: Unique Biological Communities

- Protect and, where feasible, restore large, connected portions of estuaries and riparian systems, including those designated for special protection by the California Natural Areas Coordinating Council, including Big River, Albion River and Navarro River
- Manage redwood and other conifer forests consistent with their ecological function
- Protect existing healthy kelp beds, mammal haul-out sites, mussel beds and other coastal saltwater habitats, especially those within the State Underwater Park system
- Protect nesting seabird sites, migratory bird resting and feeding areas and other special bird habitats, including Audubon *Important Bird Areas*

Objectives: Listed Animal and Plant Species

- Protect and, where appropriate, restore large blocks of connected habitat that contain sensitive species, especially federally listed endangered or threatened species

Threats: Biological Resources (listed threats that have the potential to occur at Saunder's Landing without adequate site protection as proposed with preservation)

- Loss and fragmentation of sensitive terrestrial habitats and species diversity due to:
  - Conversion of agricultural and forest land to residential and other uses
  - Non-sustainable agricultural practices
  - Overuse and/or inappropriate use of public recreational areas
  - Spread of exotic species
  - Spread of fungal diseases
- Rise in water temperature due to removal of riparian cover by timber and agricultural activities
- Chemical contamination (from septic systems, pesticides, and herbicides)

Strategies: Biological Resources (listed strategies are those that will be met with the purchase and protection of Saunder's Landing)

- Purchase and accept donations of easements and fee from willing landowners of large, connected blocks of land which contain biologically significant:
  - Estuaries and riparian areas, designated coastal wetlands, important coastal streams, or *Important Bird Areas* (designated by Audubon)
  - Coastal terraces areas
- Give priority to acquisition of lands which are adjacent to existing parks and preserves or which provide buffers between agricultural or forestry uses and sensitive habitats
- Provide outreach to:
  - The general public, to increase awareness and appreciation of special plant communities, unique biological communities, and listed plant and animal species
  - Work with local and state agencies to provide outreach to landowners, schools and other groups regarding the threat of exotic species to Mendocino Coast's unique biological resources
  - Implement exotic species control programs

Mendocino County General Plan

The following Goals and Policies listed in the Mendocino County General Plan (2009) align with stated project goals and objectives for the Roadway Projects' proposed preservation mitigation. In combination with Mendocino County's Goals and Policies, preservation of sensitive resources at Saunder's Landing contribute significantly to the ecological sustainability of the watershed.

Water Resources Goals and Policies

1. **Goal RM-1 (Watersheds)** Land uses, development patterns and practices that facilitate functional and healthy watershed ecosystems.
   - Policy RM-1: Protect stream corridors and associated riparian habitat.
   - Policy RM-2: Promote and participate in watershed restoration and enhancement projects.
   - Policy RM-3: Work cooperatively with property owners, agencies, and organizations to develop and support programs that maintain the integrity of stream systems for flood control, aquatic habitat, and water supply.
   - Policy RM-4: Promote and support public outreach and education programs pertaining to watershed and water resources stewardship.
2. **Goal RM-3 (Water Quality)** Land use development and management practices that protect or enhance water quality.

- Policy RM-22: Support public and private programs to reduce water contamination and improve the water quality in county rivers and streams, specifically those which do not meet federal water quality standards.

Biology and Ecology Resources Goals and Policies

1. **Goal RM-4 (Ecosystems)** Protection and enhancement of the county's natural ecosystems and valuable resources.
2. **Goal RM-5 (Ecosystems)** Prevent fragmentation and loss of the county's oak woodlands, forests, and wildlands and preserve their economic and ecological values and benefits.
   - Policy RM-24: Protect the county's natural landscapes by restricting conversion and fragmentation of timberlands, oak woodlands, stream corridors, farmlands, and other natural environments.
   - Policy RM-26: Protect, use and manage the county's farmlands, forests, water, air, soils, energy, and other natural resources in an environmentally sound and sustainable manner.
   - Policy RM-27: Conserve, restore and enhance natural resources, sensitive environments, and ecological integrity.
3. **Goal RM-7 (Biological Resources)** Protection, enhancement and management of the biological resources of Mendocino County and the resources upon which they depend in a sustainable manner.
4. **Goal RM-8 (Marine Resources)** Protection and restoration, and enhancement of Mendocino County's freshwater and marine environments.
   - Policy RM-71: Promote land uses and management practices that protect biological diversity and productivity.
   - Policy RM-78: Conserve native vegetation, critical habitats and soil resources through education, technical and financial assistance, cooperative endeavors, best management practices, and soils and vegetation management plans for development and resource uses.
   - Policy RM-79: Encourage farmers, landowners and property managers to protect sensitive environments, and minimize the effects of recreation, tourism, agriculture and development on these resources. Promote techniques and features such as: Habitat contiguity, wildlife corridors, maintaining compatibility with adjacent uses, and maintaining habitat for sensitive plant and animal species.

  - Action Item RM-79.1: Work with agencies and organizations to educate the public about effective ways to protect listed plant and animal species and preserve sensitive habitats.
  - Action Item RM-79.3: Promote conservation easements to protect wildlife habitat, wetlands and other sensitive environments.
  - Action Item RM-79.4: Provide information to landowners, developers, and the public on the importance and value of maintaining wildlife corridors.
- Policy RM-82: Promote the conservation and use of native species or drought-tolerant, fire resistive and noninvasive vegetation
- Policy RM-89: Conserve and enhance watercourses to protect habitat, fisheries, soils, and water quality.
- Policy RM-91: Stream restoration and maintenance programs shall conserve riparian vegetation and the floodwater carrying capacity of river and stream channels.
- Policy RM-127: Support land trusts and similar organizations in identifying and protecting lands and corridors with significant resource, recreational or scenic values.
  - Action Item RM-127.1: Continue to protect the scenic qualities of uplands and rural landscapes through measures such as Timberland Production and large lot zoning controls, clustering, the Williamson Act, the Forest Practices Act, and good management of public lands.
- Policy RM-128: Protect the scenic values of the county's natural and rural landscapes, scenic resources, and areas of significant natural beauty

(iv) The resources are under threat of destruction or adverse modifications

Saunder's Landing is currently for sale and Caltrans, in partnership with the MLT, desires to purchase the parcels as mitigation for the listed Roadway Projects. At the time of this HMMP development, Caltrans is still determining if mitigation is feasible and therefore, no purchase option has been placed on the property and thus, the parcels could be sold to another entity. Currently the parcels are zoned as residential and the potential for development to occur on the parcels is present. Existing coastal regulations may make it difficult to develop certain areas of the parcel though other portions of the property without sensitive resources are developable as is evident to the south of the eastern parcel at the Iversen Subdivision.

The Iversen Subdivision lies adjacent to the eastern parcel along the southern boundary and is made up of ~80 housing lots, associated driveways, septic systems, and ~1 mile of paved access roads, effectively disconnecting/eliminating once viable riparian and upland buffer habitats. Directly north of the eastern parcel, a similar large non-native grassland offers the

potential to create another, if not larger, subdivision. Development from housing foundations, roofs, and associated infrastructure including, but not limited to, access roads, driveways, and other impervious surfaces (e.g., patios), sewage pipes and/or septic tanks/leach field, and water lines and water wells have the potential to occur at the site and/or on lands adjoining the parcels. This type of development poses large risks from increased impervious surface runoff to the landscape and potential contamination of nearby sensitive aquatic resources including the Saunders Reef SMCA MPA and the Saunders Reef ASBS State Water Quality Protection Area. Development similar to the Iversen Subdivision that has the potential to occur north of the eastern parcel would fragment valuable wildlife corridor habitat such as the riparian zone along Hearn Gulch. Acquisition of these parcels and transference to the MLT would ensure a large vegetative buffer (~100-200 yards) would be preserved in perpetuity and may facilitate future restoration of important SNC resources (e.g., northern bishop pine). This preserved riparian buffer would be the potential location for development similar to the Iversen Subdivision directly south of Saunder's Landing. During a site visit conducted March 29, 2022, agency representatives including members from the CCC, CDFW, and Water Boards as well as staff from Caltrans noted recent removal of bishop pine trees at a residence adjoining the eastern parcel. This development type threatens the communities within Hearn Gulch as the removal of the bishop pine trees was within the identified riparian zone which provides direct inputs to Hearn Gulch.

On the western parcel, RCLC has informed Caltrans that unauthorized access by the general public to either walk around the property or to access the Hearn Gulch State Beach continues to occur on Saunder's Landing. This illegal access by the general public, who may not know about the sensitive resources present onsite, can create adverse modifications to these habitats over time via continued trampling. Additionally, sensitive botanical resources noted at the site have been illegally harvested for sale by poachers. Without adequate site protection measures, overseen by a dedicated land manager, aquatic, riparian, and upland buffer habitats are under threat from modification or destruction. MLT will manage the preserved land, protecting sensitive resources and directing/educating the public on the importance of the species and habitats present.

(v) The preserved site will be permanently protected through an appropriate real estate or other legal instrument (e.g., easement, title transfer to state resource agency or land trust)

Following approval of the mitigation proposal by the regulatory agencies, Caltrans will provide funding to SCC to acquire the parcels for MLT. To provide long-term site protection of the mitigation parcel, mitigation lands will be encumbered via an Open Space Deed

Restriction that will be placed over the mitigation site. Saunder's Landing will be protected by MLT to include the limited activities such as protection and restoration of wetland habitat and, to the extent not inconsistent with these purposes, for open space, passive recreational public access, and environmental education and research. Any public or scientific use of Saunder's Landing would be at the discretion of MLT.

3.2 Mitigation Goals

The primary goals of the HMMP are to enhance the 0.350-acre CCA wetland on the western parcel and other SNCs/ESHAs over the entirety of the 12-acres via the removal of all target invasive plant species and preserve sensitive aquatic and plant resources present on the 12-acre parcels. Restoration activities include invasive plant removal with short-term monitoring and maintenance and long-term management via an endowment. The following CCA wetland and waters of the U.S./State preservation mitigation goals will be achieved through protection of sensitive aquatic resources present on Saunder's Landing:

1. Preserve approximately 1.023-acres of aquatic resources on Saunder's Landing including 13 identified CWA and CCA wetlands.
2. Preserve approximately 0.130-acre of non-wetland waters resources (Hearn Gulch) on Saunder's Landing.

The following riparian and non-riparian SNC/ESHA preservation mitigation goals will be achieved through protection of other sensitive biological resources present on Saunder's Landing:

1. Preserve approximately 1.129-acres of riparian habitats on the eastern Saunder's Landing associated with Hearn Gulch.
2. Preserve approximately 6.146-acres of SNC/ESHA on Saunder's Landing that include: Northern bishop pine forest (1.100-acres), coastal terrace prairie (3.261-acres), coastal bluff scrub (0.455-acre), and northern coastal scrub (1.330-acres).

The following wetland and SNC/ESHA restoration mitigation goals will be achieved through invasive plant species removal:

1. Restore the function and quality of approximately 0.317-acre of the 0.350-acre of coastal ESHA (CCA wetland) via invasive species removal.
2. Restore the function and quality of SNC/ESHAs present on the 12-acre parcels via the removal of all Cal-IPC High rated invasive plants (non-native annual grasses excluded).

3. Ensure the perpetual function and quality of aquatic and SNC/ESHA resources by the continued removal of non-native, invasive species via long-term funding provided through an endowment.

3.3 Off-site Mitigation Objectives

Caltrans has developed the following objectives to achieve the restoration and preservation goals identified above:

1. Complete substantial restoration of 0.317-acre of the 0.350-acre of CCA wetlands by removing invasive plants and allowing recolonization of native plants and/or installing regionally appropriate native wetland plant species.
2. Complete substantial restoration of SNC/ESHAs on Saunder's Landing by removing all invasive plants rated as High by Cal-IPC (non-native annual grasses excluded) and allowing recolonization of native plants and/or installing regionally appropriate native plant species in close association with the restored SNC/ESHA.
3. Preserve 1.153-acres of aquatic resources (CWA wetlands and non-wetland waters), 1.129-acres of riparian habitats, and 6.146-acres of SNC/ESHAs present on Saunder's Landing by providing 100% of funds for the acquisition of the 12-acre Saunder's Landing and long-term funding (via an endowment) to MLT for management in perpetuity.
4. Though no mitigation credit has been assigned for 0.089-acre of CWA wetlands, 0.070-acre of CCA wetlands, 0.060-acre of SNC/ESHA resources, and 1.526-acres of upland buffer habitats, acquisition of Saunder's Landing for MLT will ensure protection of these resources in perpetuity.

Chapter 4. Implementation Plan

Implementation of the off-site mitigation restoration activities will include invasive plant removal and eradication in perpetuity. To ensure success of the mitigation within Saunder's Landing mitigation parcel and to set achievable mitigation criteria, SNRC conducted baseline estimates of the invasive plant species present on the western parcel. Additionally, SNRC conducted botanical surveys, identifying sensitive species, ESHAs and SNCs, wetland delineations, and identified other restoration opportunities (e.g., bishop pine forest restoration) at the site.

4.1 Invasive Plants

On June 22, 2020, SNRC mapped the extent of non-native plants on the western parcel. In summary, approximately 60,000 square feet (or 2.290-acres) of the western parcel is currently invaded by non-native species with Cal-IPC rankings of Limited, Moderate or High. Wetlands observed on Saunder's Landing are generally considered high quality wetlands with the exception of a 0.350-acre wetland (W-11, Table 18 above) that is currently invaded with iceplant. The report and map of invasive species identified at the site can be found in Appendix G. For this HMMP, Caltrans intends to undertake invasive species removal in wetland W-11 (Figure 1) for impacts associated with Cleone Shoulder Widening Project (01-0G600).

Additional habitats including SNCs/ESHAs are impacted from invasive plants rated as High according to Cal-IPC. As mentioned above, SNRC has mapped the extent of non-native plants on the western parcel though the eastern parcel has yet to be mapped. To provide compensatory mitigation for riparian impacts at 01-0E110, Caltrans will conduct an additional seasonally appropriate botanical survey on the eastern parcel for Cal-IPC High rated invasive plant species (anticipated for Spring 2023, prior to any construction for the Roadway Projects). Survey results from this effort will be mapped and included as part of a future update to this HMMP that will approved by the agencies.

4.2. Invasive Plant Management Plan

Caltrans will conduct removal activities for target invasive plant species over the entirety of Saunder's Landing. Restoration via invasive plant removal during the first year of implementation and the five-year monitoring and maintenance period will likely be conducted by the California Conservation Corps, or other similar restoration entity, and

overseen by a Caltrans Revegetation and/or Mitigation Specialist or Project Biologist. Plans to complete this work are detailed in the sections below:

- ***Invasive Plant Removal Methods***: Caltrans would mechanically remove all target invasive plant species over the entirety of Saunder's Landing. As mentioned above, due to safety concerns with working close to the bluff edge, Caltrans intends to treat 0.317-acre of iceplant within the 0.350-acre wetland. Target invasive plant species would be removed and maintained using hand tools and no herbicides would be used. Mechanical removal is effective at any time of the year but to avoid unnecessary impacts to the wetlands during the rainy season, weeding would begin as early as May. Initial removal efforts would consist of ~6-10 people over a 2-3 week period to remove all target invasive plant species on Saunder's Landing.

    - ***Initial Treatment***: In the initial year of implementation and the following monitoring years, crews would hand pull all target invasive plant species identified on Saunder's Landing. For the iceplant, restoration crews would take care to tear the entire plant out from the roots and remove all plant and stem fragments. Because the plant can grow roots and shoots from any node, all live plants and stem fragments must be removed from contact with the soil to prevent resprouting (DiTomaso and Kyser et al., 2013). In addition, the crews would identify (with oversite from a trained botanist at Caltrans) other invasive plants growing in the wetland and remove them. All treated invasive plant species would be bagged and taken to an appropriate facility or covered and composted on-site. No chemical treatment or large equipment would be used for the removal of invasive plants. The first year may require several removal efforts of all invasive plant material.

    - ***Successive Treatments:*** Caltrans staff will visit and assess the mitigation site prior to removal efforts to assess progress towards achieving success criteria. Removal crews would then be scheduled according to the need of removal. All removal crews would be trained by qualified Caltrans staff to identify target invasive plant species growing on Saunder's Landing and remove them. Pulled iceplant and other invasive plants would be bagged and taken to an appropriate facility and/or covered and composted on-site. Specific to iceplant treatment, removal of iceplants can leave behind a layer of accumulated dead and decaying organic debris that may contain seeds of iceplants or other weedy species. Furthermore, the carbon in the litter provides nutrients to potential invasive

species so it is imperative that successive treatment occur to ensure long-term success (DiTomaso and Kyser et al., 2013). It is anticipated that multiple removal efforts per year would be required to identify and remove any new infestations of target invasive plant species over the entirety of Saunder's Landing.

- ~~o~~ ***Native Planting or Seeding***: Following the initial treatment of target invasive plant species, restored areas may be reseeded/replanted with regionally appropriate native plants/seed to match the surrounding native vegetation composition. Specifically, the CCA wetland will require the installation of native plants and/or seed though other areas impacted by Cal-IPC High rated invasives may not require supplemental planting/seeding. Re-establishing native plants in wetland W-11, and possibly SNCs/ESHAs, will provide functional lift to coastal wetland and SNC/ESHA resources on Saunder's Landing. Additionally, removal of non-native invasive species will offer protection to the surrounding coastal terrace prairie, other SNCs/ESHAs, and nearby aquatic habitats from further migration and invasion throughout the entire 12-acres. If replanting will occur, Caltrans will coordinate with permitting agencies on the details of the replanting palette.

Chapter 5. Success Criteria, Monitoring and Reporting

5.1 Performance and Success Criteria

Caltrans will be responsible for the first year of implementation of invasive plant removal and the following five years of maintenance and monitoring of the CCA wetland and other areas where Cal-IPC High rated invasive plants were mapped. The off-site mitigation activities will be evaluated annually using the performance and success criteria described below. For this HMMP, a "performance criterion" is a measure that indicates whether the restoration and mitigation goals are on a trajectory to being attained at a given point in time which will be used to guide site maintenance activities. A "success criterion" is a measure that indicates whether the restoration and mitigation goals have been achieved at the end of the monitoring period. The performance and success criteria for the off-site mitigation project at Saunder's Landing are listed below.

5.1.1 *Saunder's Landing Restoration Performance Criteria*

The following performance criteria are proposed and will assist Caltrans in determining if the mitigation activities are on a trajectory towards the success criteria at a given point in time which will be used to guide site maintenance activities:

Year 1: Implementation of invasive species plant removal. The first-year criterion is to reach less than 5% ground cover of target invasive plant species within the CCA wetland (iceplant) as well as mapped areas where Cal-IPC High rated invasive plants were found. To meet this criterion, Caltrans will conduct multiple invasive removal efforts and will summarize implementation activities. Assessment of invasive species coverage will be conducted after removal efforts are complete.

Years 2-6: The first year of monitoring will occur after the implementation year. For the first through fourth years of the monitoring and maintenance period, a yearly monitoring pre-assessment of the mitigation site will occur to evaluate target invasive plant species re-growth to determine if there is less than 5% cover of live invasive species in targeted areas. In addition, an evaluation for native plant coverage within the CCA wetland will occur to assess the criterion goal of 80% ground cover of native species is on trajectory for the final year.

5.1.2 Saunder's Landing Restoration Success Criteria

Year 6: By the final (fifth) year of the monitoring and maintenance period, the criteria for target invasive plant species coverage will remain at less than 5% coverage in the CCA wetland (iceplant) as well as mapped areas where Cal-IPC High rated invasive plants were found. Additionally, restoration success criteria for the CCA wetland (iceplant) will include native plant ground coverage at 80% or greater.

5.2 Monitoring Methods

Caltrans will conduct annual monitoring of the 0.350-acre wetland restoration area as well as mapped areas where Cal-IPC High rated invasive plants were found to ensure the success criteria is met and to implement adaptive management if necessary. Annual monitoring will occur before each annual treatment and maintenance event.

Monitoring will characterize extant conditions in the field, and data collection will be reproducible and collected in a consistent manner. Monitoring will be conducted annually during the 5-year maintenance and monitoring period by a Caltrans Revegetation and/or Mitigation Specialist and/or other staff with appropriate field survey experience.

5.2.1 Saunder's Landing Restoration Monitoring Methods

Sampling: Cover will be recorded annually for each plant species in the CCA wetland restoration area as well as mapped areas where Cal-IPC High rated invasive plants were found to demonstrate that the areas are on trajectory to meet the success criteria.

Establishing reproducible photo points: Restoration implementation, maintenance and quality control will be documented through photo monitoring annually through Year 5 of the maintenance and monitoring period. Photo monitoring points will be shown on a map and accepted by permitting agencies. Additional or alternate photo points may need to be installed if the original photo points fail to capture enough visual data. If this is needed, the new locations would be communicated to and accepted by the permitting agencies.

5.3 Reporting

Caltrans will prepare and submit monitoring reports in Years 1, 3, and 5 beginning the first year after invasive species removal/replanting/reseeding of native vegetation (Table 20). Monitoring reports will describe mitigation activities in accordance with *USACE 2015*

Compensatory Mitigation and Monitoring Guidelines[7]. Reports will be prepared by a qualified Biologist or Mitigation Specialist and each report will document the condition of the invasive species removal areas and native plant revegetation progress, with photographs taken from the same fixed points in the same directions. A "performance evaluation" section will be included where monitoring results are used to evaluate the status of the invasive species removal efforts and revegetation in relation to the interim and final success criteria in this HMMP. Additionally, the report will include recommendations for work for the subsequent year needed to improve mitigation success. The final report will summarize prior reports, provide a timeline of the overall progress and success and include sufficient detail to evaluate comprehensive compliance with the specified goals, objectives, and success criteria set forth in this HMMP.

Each monitoring report will include the following information:

- A list of the names, titles, and companies of the people who prepared the content of the annual report or participated in monitoring activities that year.
- A reference of the resource agency permits and any subsequent letters of modification, as an Appendix.
- A summary of the project location and description.
- Maps of the general project location and mitigation areas.
- A performance evaluation section in which monitoring results are discussed to evaluate invasive species removal and revegetation efforts in relation to performance and success criteria.
- Photo documentation and maps of photo points of the mitigation site and reference site(s) at established, fixed points.
- Summary of prior reports.
- Timeline of the overall progress and success.
- Sufficient detail to evaluate comprehensive compliance with the MMP's goals, objectives, and success criteria.
- Adaptive management recommendations, including discussion of areas with inadequate performance and recommendations for remedial action.

[7] Final 2015 Regional Compensatory Mitigation and Monitoring Guidelines for South Pacific Division USACE.

- A discussion of proposed modifications to the monitoring methods that will require permitting agency approval.

5.4 Implementation, Monitoring, and Reporting Schedule

Table 20 below illustrates the proposed timeline to complete the initial treatment, maintenance and monitoring, and reporting tasks to meet compensatory mitigation requirements for the Roadway Projects. Adaptive management tasks have been included in case tasks are required following the conclusion of the maintenance and monitoring period. If required, Caltrans will submit a revised HMMP within 90 days of the submittal of the final monitoring report that will include details on how to remediate the failed mitigation efforts.

Table 20. Implementation, Monitoring, and Reporting Schedule.

Task	Years (Year 1 = Implementation)									
	1	2	3	4	5	6	7	8	9	10
Pre-Implementation Period										
Mapping of invasive species on eastern parcel	X									
Identification of fixed restoration photo points	X									
Implementation Period (Year 1)										
Initial treatment of target invasive plant species	X									
Monitoring and Maintenance Period (Years 2-6)										
Annual maintenance and monitoring		X	X	X	X	X				
Report submittal (Interim Reports in Years 2 & 4; Final Report in Year 6)		X		X		X				
*Adaptive Management (**if necessary**)**										
Submittal of revised HMMP (within 90 days of final report)						X				
Implementation of adaptive management measures						X	X	X	X	X
Adaptive management reporting							X		X	

*If required, timeline for adaptive management activities to be negotiated following submittal of revised HMMP.

5.5 Remedial Actions and Adaptive Management

Adaptive management requires observing long-term trends and responses to management activities. For the purposes of this HMMP, adaptive management is a learning and decision process employed in response to observed significant changes that have detrimental effects on the mitigation goals and objectives. Adaptive management does not represent an end, but rather a means to more effective management decisions and enhanced benefits to the resources. Its true measure is in how well it helps meet environmental goals, increases scientific knowledge, and reduces tensions among stakeholders.

The adaptive management strategy for Saunder's Landing will be used to evaluate and work within the constraints of the normal, dynamic environmental conditions (e.g., high coastal winds, pests, pathogens) and natural processes of the mitigation site. Mitigation will be allowed to conform to this dynamic environment as it responds to the normal conditions and natural processes. Adaptive management actions will avoid creating situations that require recurring intervention to redirect or compete with the site's normal conditions and natural processes.

5.5.1 Changing Habitat Conditions

Changed habitat conditions that may warrant adaptive management include, but are not limited to, the following:

Invasive Species, Pests, and/or Pathogens: New invasive pathogens, plants or animals that invade the mitigation lands may need to be managed adaptively. Target invasive plant management activities could increase the opportunity for new invasive species to become established which may also trigger adaptive management.

***Reference sites*:** Reference site(s) may be chosen by Caltrans to use as a tool for determining whether adaptive management is needed at Saunder's Landing. Before reference sites are finalized, Caltrans will seek approval from CCC for use of the location(s) and the site(s) will be monitored in the spring using an appropriate sampling as described in Section 5.2.1. Additional reference site monitoring may be conducted as needed if the site is showing signs of not reaching success criteria or if the site requires an adaptive management strategy. Reference site monitoring would help Caltrans to determine if changes are taking place around the Mendocino Coast region that may explain why the site may not be performing as expected (i.e. drought, pathogens, pests, etc.).

5.5.2 Failure to Meet Success Criteria

If the final monitoring report indicates that the habitat enhancement activities have been unsuccessful, in part or in whole, based on the approved success criteria, Caltrans will submit within 90 days a revised or supplemental HMMP for the review and approval by the agencies to compensate for those portions of the original mitigation efforts which did not meet the approved success criteria. The revised or supplemental HMMP will be prepared by a qualified restoration specialist and will specify measures to remediate those portions of the original approved HMMP that have failed or have not been implemented in conformance with the original approved HMMP. The revised plan shall be processed as an amendment to the corresponding Roadways Projects' permit(s), unless determined it is not legally required by the permitting agencies. Caltrans will coordinate with MLT and the regulatory agencies to review and gain approval for the remedial or adaptive management activities. Caltrans will be responsible for implementing the adaptive management strategy. All remedial or adaptive management measures will be documented in follow up monitoring reports. If necessary, Table 20 outlines the tasks and timelines to implement required adaptive management measures.

Chapter 6. Long-Term Management

6.1 Purpose

The purpose of the long-term management of Saunder's Landing is to ensure protection of the parcels in perpetuity from future development or degradation and to ensure continued restoration and preservation of the existing sensitive habitats at the site. MLT has expressed interest in assuming ownership of Saunder's Landing as it will offer the opportunity to preserve sensitive coastal resources, provide public access to nearby coastal areas (e.g., Hearn Gulch beach, Saunders Reef SMCA MPA and ASBS State Water Quality Protection Area) and connect the CCT from RCLC lands immediately south of Saunder's Landing through other publicly owned lands approximately one mile north. MLT will implement long term management per the endowment requirements.

6.2 Responsible Parties

Following approval of the mitigation proposal by the regulatory agencies, Caltrans will provide funding to acquire the parcel for MLT. Caltrans is responsible for the HMMP mitigation and monitoring activities until the criteria are achieved and approved by the agencies. Once Caltrans and the resource agencies have agreed the mitigation criteria has met the performance standards per the off-site HMMP, MLT will be responsible for the long-term management of the restored 0.350-acre wetland area on Saunder's Landing. Upon acquisition of the property, MLT will develop a long-term management plan for the parcels and immediately complete tasks as outlined in the endowment. MLT will use endowment funding to monitor and map target invasive plant species, evaluate and manage existing bishop pine stands, install exclusionary fencing, and maintain a trail to avoid and protect sensitive natural resources present.

6.2.1 Property Owner and Land Manager

The property is currently under private ownership. The owner, Mr. Kenneth LaBoube, passed away in March of 2022; however, before his passing, RCLC obtained a Letter of Mutual Interest from Mr. Laboube to sell the subject properties. MLT and RCLC have since obtained a second Letter of Mutual Interest from the landowner's heirs to document their continued intent to sell the property (Appendix B). Caltrans will provide funding to purchase the property for MLT who will manage the land and execute activities required within the endowment. The endowment's purpose is to fund MLT's long-term maintenance and

management of the parcels. Part of the maintenance activities funded by the endowment include, but are not limited to:

- Installing a new fence and signage on the western parcel and ensuring that fencing and signage are maintained.
- Coordinating trash removal.
- Ensuring long-term maintenance of target invasive plant species after Caltrans has achieved mitigation success criteria. MLT will conduct invasive plant mapping and removal efforts when necessary.
- Evaluating Northern bishop pine stand health every 5 years and conducting management actions as necessary.
- Coordinating general inspections of the mitigation properties per year as required by this HMMP.
- Submitting yearly general inspection reports regarding the compliance and maintenance status of the mitigation.
- Arranging for any corrective action necessary to drive the performance of the habitat, as required by this HMMP.
- Working with the resource agencies when necessary to carry out the long-term management.

6.2.2 Qualified Personnel/Monitoring Biologist

MLT will utilize qualified staff or contractors to implement maintenance and monitoring activities. MLT staff and/or contractors will be familiar with California flora and fauna and will have knowledge regarding the various special status species and their ecology. MLT staff and other Qualified Personnel/Monitoring Biologist responsibilities may include, but are not limited to:

- Identifying and mapping the extent of target invasive plant species.
- Evaluating the presence of newly introduced invasive plant species and recommending management, if needed.

- Evaluating Northern bishop pine health on the eastern parcel and recommending management actions, if needed.
- Evaluating site conditions and recommending remedial action.
- Assisting in reviewing or planning restoration activities, use of the mitigation properties for education, and other tasks such as grant proposals.

6.2.3 Site Protection and Endowment Holder

To provide long-term site protection of the mitigation parcel, mitigation lands will be encumbered via an Open Space Deed Restriction that will be placed over the mitigation site. Saunder's Landing will be protected by MLT to include the limited activities such as protection and restoration of wetland habitat and, to the extent not inconsistent with these purposes, for open space, passive recreational public access, and environmental education and research. Any public or scientific use of Saunder's Landing would be at the discretion of MLT. The Open Space Deed Restriction will restrict the mitigation parcels in perpetuity, include allowed uses and prohibition of development as defined in section 30106 of the Coastal Act, be free of liens or other encumbrances, and include formal legal descriptions. The Deed Restriction will run with the land in favor of the People of the State of California, binding successors and assigns of the landowner in perpetuity

Caltrans will provide the long-term endowment and adaptive management funds to be held by the NFWF. MLT will utilize a detailed long-term management cost estimate included in Appendix D. The provided endowment is an estimate of potential long-term management costs and is subject to change per the details of the long-term management plan to be completed by MLT.

6.3 Management Approach

The general management approach to the long-term maintenance of the mitigation properties will be to maintain quality habitat for each mitigated resource through ongoing monitoring and maintenance of key environmental characteristics. More specifically, an adaptive management approach will be used (if needed) to incorporate changes to management practices. The overall adaptive management strategy will be to evaluate and work within the constraints of the normal conditions and natural processes of the mitigation site. These normal conditions and natural processes create a dynamic environment to which the landscape will be allowed to conform. Adaptive management actions will avoid creating situations that require recurring intervention to redirect or compete with normal conditions

and natural processes. Natural recruitment and succession and type changes in natural resource habitats will be accepted as part of this approach.

Caltrans, with the assistance of the MLT, has developed a PAR with appropriate endowment activities/actions that are required to ensure resources present on Saunder's Landing are protected in perpetuity. Funding will include both a non-wasting and wasting endowment due to required activities/actions needed to be completed prior to endowment maturation (~3 years). The PAR identified four categories wherein main tasks associated with the long-term management of the mitigation parcels will be completed. These categories include Habitat Maintenance, Property Management and Maintenance, Reporting, and Administration. Habitat maintenance funds will be used for a variety of purposes including mapping, monitoring, and removal of invasive plant species, bishop pine stand health evaluation and management, and volunteer coordination. Property management and maintenance funds will be used to install and maintain infrastructure proposed to be established at the site following acquisition. Reporting funds will be provided by Caltrans to be used to develop and submit the annual general inspection report to the agencies. Administration funds will be used to develop the long-term management plan, establish the endowment, and generate annual management and fiscal reports. Tasks pertaining to each category are detailed in the following sections.

6.3.1 Invasive Species Control

Caltrans is responsible for the success of meeting the mitigation criteria within Chapter 5 of thise HMMP. After success criteria are achieved and agency approval is obtained, long-term management will be overseen and implemented by MLT or a qualified contractor overseen by MLT. MLT will utilize the endowment funds to maintain the removal of target invasive plant species on Saunder's Landing. The endowment will also provide funding to MLT to conduct invasive plant surveys and mapping every year for the entire 12-acre property. Invasive plant surveys and removal treatment will occur annually or as needed to control the spread of highly invasive plants. If all iceplant and Cal-IPC High rated invasive plant species have been treated, MLT may use endowment funds to treat other invasive plant species (e.g., Moderate or Limited) as consistent with the long-term management plan.

6.3.2 Northern Bishop Pine Management

Potential evidence of disease and natural recruitment of bishop pine was observed on the eastern parcel. Caltrans, CDFW and MLT agree that the best approach for the management of the bishop pine community at Saunder's Landing will be the development of a site-

specific long-term management plan based on best available science. This plan will allow for re-evaluation and adaptive management practices as more information becomes available on the species-specific needs, environmental factors, and its associated disease pathogens. Caltrans is coordinating with MLT to provide additional funding in the endowment to routinely assess the health of the bishop pine on the eastern parcel and remove or treat, as appropriate, any diseased or dead material as part of the long-term management for Saunder's Landing. The details of the health assessment protocol will be included in the site's long term management plan.

6.3.3 Infrastructure Installation and Maintenance

Infrastructure to be installed at the Saunder's Landing parcels will include an exclusionary fence and signage to protect sensitive resources present on the parcels. The exclusionary fence to be installed will be low impact, natural, and wildlife/viewshed friendly. Additionally, MLT will develop general and educational signage that will detail the environmental importance of the habitats present at Saunder's Landing and to direct the public to avoid these sensitive areas by staying on the designated trail. Specifics and plans regarding the details and location of the fence and signage proposed to be installed will be made available upon submittal of a separate CDP for the construction of an extension of the CCT by MLT.

6.3.4 Property Management

In addition to infrastructure installation and maintenance, Caltrans will provide funding to MLT to protect resources from solid waste threats and trampling from unauthorized access by the public. Specifically, Caltrans will provide funding for collection and disposal of solid waste and maintenance of a designated trail through the western parcel. On the western parcel, RCLC has informed Caltrans that unauthorized access by the general public to either walk around the property or to access the Hearn Gulch State Beach continues to occur on Saunder's Landing. This illegal access by the general public, who may not be aware of the sensitive resources present onsite, can create adverse modifications to these habitats over time via continued trampling. Additionally, sensitive botanical resources noted at the site have been illegally harvested for sale by poachers. Without adequate site protection measures, overseen by a dedicated land manager, sensitive habitats are under threat from modification or destruction. MLT will manage the preserved land, protecting sensitive resources and directing/educating the public on the importance of the species and habitats present.

6.3.5 Reporting

Reporting funds will be provided to MLT to create general inspection reports. General inspections of the Saunder's Landing parcels will be completed every year by MLT personnel with a general inspection report to be completed and submitted to the agencies. Information pertaining to the general inspections can be found in Section 6.4.2 below with reporting requirements outlined in Section 6.4.4.

6.3.6 Administration

Caltrans will provide endowment funds to complete administrative tasks including the development of a Long-term Management Plan by MLT/RCLC, ongoing mitigation site project oversight, and establishment of an endowment account with NFWF. MLT has agreed to develop a long-term management plan that would include, but may not be limited to, recreation, education, and public access in addition to preservation and continued restoration of sensitive resources at the site. This plan will be created following acquisition of the parcel and deposit of endowment funds for MLT. Mitigation site project management will include, but may not be limited to, reconciliation of the endowment budget, tracking monthly expenses for required fiscal reporting, coordination with contractors for specialized tasks and/or annual maintenance work, and development of management plans. Lastly, Caltrans will provide funds for a one-time establishment fee to NFWF for the Saunder's Landing endowment.

6.3.7 Education and Public Access

The mitigation property may represent an opportunity for scientific research or for public education. Individuals or groups wishing to use the mitigation properties for educational purposes will obtain the consent of and coordinate with MLT. If the education activities are passive in nature, such as a discussion of plants and animals, the consent of MLT may be sufficient. If active use other than restoration activities of the mitigation parcel is envisioned, MLT will review for approval. MLT has the right to refuse a request to use the mitigation properties if it is determined the use may have a negative impact on any habitats or wildlife on the mitigation properties.

6.3.8 Permitted/Prohibited Uses and Activities

It is understood that the following activities are prohibited, except as needed to accomplish the management and maintenance activities in this HMMP. In addition, if any of these

activities must be undertaken because of special circumstances, they may be reviewed and approved by the resource agencies on a case-by-case basis.

Access to the Mitigation Area: The intent of the long-term management plan is to maintain the sensitive habitats present on Saunder's Landing while providing access to the general public, via a designated trail, for recreation, education, or open space reasons. Off-trail pedestrian access to the mitigation area will be discouraged through signage, fencing, and the creation of a designated trail (extension of the CCT). Limited access to habitats/locations on the Saunder's Landing parcels may be allowed on a case-by-case basis, subject to the approval of MLT.

Removal of Native Vegetation: No killing, removal, or alteration of any existing native vegetation will be allowed in the mitigation area except as described in this HMMP and/or as reasonably necessary for MLT to conduct the land management activities.

Burning and Dumping: No burning will be allowed in the mitigation area. This prohibition does not include controlled burning to achieve mitigation goals, as a method to manage nonnative and invasive species (including invasive debris removal) and/or diseased vegetation (e.g., Northern bishop pine). No dumping of rubbish, garbage, or any other wastes or fill materials will be allowed in the mitigation area. This prohibition excludes fill material such as clean dirt that may be necessary to carry out the land management of the property according to this HMMP. No dumping of any material in jurisdictional waters shall be allowed without appropriate resource agency authorization.

Irrigation: Irrigation may be used as a maintenance measure during the long-term management period as a tool for habitat intervention (e.g. invasive spp. management) but will not be used for forage production or to sustain wetlands in perpetuity.

Disking: The plowing, disking, cultivation, ripping, planting, sowing, irrigation, or any other conversion or disturbance of the mitigation area is prohibited, except for activities to rehabilitate or preserve the mitigation.

New/Changes to Trails: To establish a new connection for the CCT, a new trail will be allowed in the mitigation area as permitted by the resource agencies. Trails that are not designed and permitted by the resource agencies, and that may have a negative impact on the mitigation area, are prohibited.

Equipment or Fuel Storage: The storage or disassembly of inoperable automobiles, machinery, equipment, trucks, and similar items for purposes of storage, sale, or rental of

space for any such purpose is prohibited. The use, dumping, storage, or other disposal of non-compostable refuse, trash, sewer sludge, or unsightly or toxic or hazardous materials or agrichemicals is prohibited.

Use of Pesticides and Chemical Agents: Use of any pesticides, herbicides, fungicides, insecticides, or any other chemical agents used to kill or suppress plants, animals, or fungi in the mitigation area is highly discouraged though uses shall only be approved in very specific circumstance and in close coordination with the resource agencies.

Use of Motor Vehicles: No motorized vehicles will be ridden, used, or permitted on any portion of the mitigation area with the following exception: motorized vehicle use will be restricted to that required for mitigation area maintenance purposes such as habitat management and monitoring and emergency or law enforcement situations requiring access by medical, fire, or law enforcement vehicles.

Construction Activities: No construction will be allowed in the mitigation area except for any activities mentioned in this HMMP.

Introduction of Nonnative Species: No seeding, planting, or introduction of nonnative grasses, clovers, or any other plant species is permitted. Intentional or reckless introduction of exotic plant or animal species that may threaten to impair the mitigation is prohibited.

Grazing: In the event that Caltrans, MLT, or other subsequent landowner(s) intend to use Saunder's Landing for grazing activities, Caltrans, MLT, or subsequent landowners shall submit a Grazing Management Plan prior to the undertaking of any grazing for the review and approval of the agencies. The Grazing Management Plan shall be prepared by a qualified expert(s) in grazing management and restoration ecology, and shall consider the habitat enhancement, restoration, and management goals of this HMMP in recommending a grazing regime that is compatible with those goals.

6.4 Inspection, Monitoring and Reporting

6.4.1 Schedule

Long-term management of Saunder's Landing by MLT will begin with the development of the long-term management plan immediately following acquisition of the parcels. Long-term management of Saunder's Landing will occur when the agencies have agreed that Caltrans has met the HMMP performance standards at the end of the five-year maintenance and

monitoring period (Year 6). The following schedule outlines the long-term management tasks to be completed following parcel acquisition and deposit of endowment funds:

- MLT will complete a Long-Term Management Plan immediately following acquisition of the Saunder's Landing parcels and deposit of wasting endowment funds.
- MLT will seek a separate CDP for the installation of an extension of the CCT. CDP will include the installation of exclusionary fencing and signage to protect sensitive resources onsite and provide education for the general public. Funding to install and maintain infrastructure to protect the parcels will be provided by Caltrans in the endowment for Saunder's Landing.
- MLT will conduct annual health assessments of the 1.100 acres Bishop pine stand every 5 years and treat or remove dead or diseased Bishop pine vegetation from the property as necessary following assessments.
- Follow-up inspections of the mitigation properties will occur as often as needed to protect the mitigation.
- MLT will conduct one general inspection each year of the 12-acre Saunder's Landing property.
- Complete annual general inspection reports and submit to agencies. MLT will coordinate site photographs of the wetland restoration mitigation and any other areas treated for invasives removal at Saunder's Landing. The intent of the photographs will be to 1) capture the extent of invasive species for comparison with photographs taken in future monitoring years and 2) document continuing preservation of aquatic and sensitive biological resources.
- Following approval by CCC for Caltrans achieving success criteria, MLT will conduct yearly target invasive plant species surveys and quarterly removal efforts and provide data and information in general inspection reports. If all iceplant and Cal-IPC High rated invasive plant species have been treated, MLT may use endowment funds to treat other invasive plant species (e.g., Moderate or Limited) as consistent with the long-term management plan.

Table 21 below outlines the proposed Saunder's Landing mitigation inspection, monitoring, and reporting schedule.

Table 21. Proposed Mitigation Inspection, Monitoring, and Reporting Schedule for Caltrans and MLT.

Task	Years (Year 1 = Implementation)										
	1	2	3	4	5	6	7	8	9	10	11+
Caltrans (Initial Treatment and Maintenance/Monitoring Period)											
Initial Target Invasive Plant Species Treatment	X										
Target Invasive Plant Species Maintenance and Monitoring		X	X	X	X	X					
Interim (Years 2 & 4) and Final Report (Year 6) Submittals		X		X		X					
Mendocino Land Trust (Long-term Management Period)											
Develop Long-Term Management Plan	X										
Installation of Mitigation Area Fencing/Signage (dependent on CDP for CCT extension)			X								
General Inspections	X	X	X	X	X	X	X	X	X	X	X
Bishop Pine Stand Health Evaluation	X					X					X
Bishop Pine Stand Management (if necessary)	X					X					X
Mapping, Monitoring and Maintenance of Target Invasive Plant Species (following Caltrans 5-year Maintenance and Monitoring Period)							X	X	X	X	X
General Inspection Report	X	X	X	X	X	X	X	X	X	X	X

6.4.2 General Inspections

General inspections will be conducted every year by qualified MLT personnel. MLT mitigation parcel inspections will concentrate on an evaluation of the following: erosion, trash accumulation, invasive species, evidence of unauthorized use of the site, and/or vandalism that jeopardizes the property. The entire perimeter of the property will be covered, as well as meandering transects through its interior.

Photo documentation will also occur at identified locations throughout the mitigation site. Permanent photo points for taking photographs will be established, and a site map showing the photo point(s) will be prepared for the mitigation project file. Representative photographs will be taken once per year during the same season. If any problems are identified, follow-up inspections will be done to closely track the problem as well as to track that any employed remedial actions are effective. MLT will notify all permitting agencies if anything problematic is identified on the property during the annual general inspections or otherwise.

6.4.3 Biological Monitoring

Biological monitoring for Saunder's Landing under this HMMP will include annual invasive species surveys and Bishop pine stand health assessments every five years. MLT staff or contractors will conduct ocular surveys to assess target invasive plant species coverage throughout the 12-acre property. The surveys will estimate the percent coverage of invasive plants and this information will be summarized in the annual monitoring report (see Section 6.4.4). MLT will coordinate surveys, with photographs, in Year 1 of the long-term maintenance period to establish baseline conditions for future surveys. Success criteria for long-term maintenance of target invasive plant species mapped on Saunder's Landing will be less than 5% cover. Bishop pine management activities and mapping of target invasive plant species, with a description of treatments and follow up surveys, will be provided to the regulatory agencies within the annual general inspection report.

6.4.4 Reporting and Administration

MLT will submit an annual written report to the interested agencies (by December 30th) which will summarize all long-term maintenance efforts, along with any potential land management changes.

The general inspection report will include:

- A map of Saunder's Landing with identified restoration areas (e.g., invasive species treatments) and preservation areas (e.g., Waters of the U.S./State, SNC/ESHA).
- Representative photos documenting the status of the Saunder's Landing parcels.
- Observations from the annual general inspections (e.g., vandalism, erosion, etc.).
- Documentation of maintenance activities accomplished.
- Mapping of invasive species treatment areas, including description of treatment and follow-up survey results.
- Mapping of newly discovered target invasive plant species on Saunder's Landing.
- Bishop pine stand health evaluations and management activities.
- Endowment accounting.
- Recommendations for altered management practices as needed.

6.5 Transfer of Responsibilities and Plan Modifications

6.5.1 Transfer of Management Responsibilities

Any subsequent transfer of management responsibilities under this long-term management plan to a different land manager will be requested in writing by MLT. The request will be made to the regulatory agencies and Caltrans, which will issue written approval that will be incorporated as an amendment into this long-term management plan. Any subsequent land manager assumes responsibilities described in this long-term management plan unless otherwise amended in writing by the resource agencies.

6.5.2 Amendments to the Management Plan

MLT may request to coordinate with Caltrans to amend or revise the long-term management plan to better meet management objectives and preserve the habitat on the mitigation parcel. Any proposed changes to the long-term management plan will be discussed with the regulatory agencies. Any proposed changes will be designed with input from all parties. Amendments to the long-term management plan will be approved by the regulatory agencies in writing, will require Caltrans' management consensus, and will be implemented by MLT.

Chapter 7. References

Baldwin, B. G., D. H. Goldman, D. J. Keil, R. Patterson, T. J. Rosatti, D. H. Wilken (eds). 2012. *The Jepson Manual: Vascular Plants of California, Second Edition*. Berkeley, CA: University of California Press, Berkeley.

California Department of Fish and Wildlife (CDFW). 2022. Saunders Reef State Marine Conservation Area. Accessed March 10, 2022 at: https://wildlife.ca.gov/Conservation/Marine/MPAs/Network/North-Central-California#27289573-saunders-reef-state-marine-conservation-area

California Department of Transportation (Caltrans). 2020. *Initial Study (IS) with Mitigated Negative Declaration for the Cleone Shoulder Widening Project.*

_____. 2021a. *Initial Study (IS) with Proposed Mitigated Negative Declaration for the Jack Peters Creek Bridge Project.*

_____. 2021b. *Initial Study (IS) with Mitigated Negative Declaration/Environmental Assessment with Finding of No Significant Impact (FONSI) for the Elk Creek Bridge Replacement Project.*

_____. 2021c. *On-site Revegetation Plan for the MEN 1 Widen Shoulders Project.*

California Invasive Plant Council (Cal-IPC). 2021. *Cal-IPC Inventory.* Accessed on November 29, 2021, at https://www.cal-ipc.org/plants/inventory/

California Native Plant Society (CNPS). 2015. A Manual of California Vegetation. Sacramento. California.

Cowardin, L. M., 1979. *Classification of Wetlands and Deepwater Habitats in the United States.* U. S. Department of the Interior, Fish and Wildlife Service.

DiTomaso, J. M., G. B. Kyser et al., 2013. *Weed Control in Natural Areas in the Western United States.* Weed Research and Information Center, University of California. 544 pp.

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual.* (Technical Report Y-87-1.) Vicksburg, MS: U.S. Army Waterways Experiment Station.

Federal Geographic Data Committee (FGDC). 2013. *Classification of wetland and deepwater habitats of the United States*. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington DC.

Ford, L. D. and G.F. Hayes. 2007. Northern Coastal Scrub and Coastal Prairie. Pages 180-207 in Terrestrial Vegetation of California, 3rd Ed. University of California Press, Berkeley.

Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. State of California, The Resource Agency. California Department of Fish and Game. Sacramento, CA. 156 pp.

Lichvar, R. W., D. L. Banks, W. N. Kirchner, and N. C. Melvin. 2016. *The National Wetland Plant List: 2016 wetland ratings.* Phytoneuron 2016-30: 1–17.

Spade Natural Resources Consulting. 2020a. *Hearn Extension Resource Information Report*. Prepared for RCLC.

Spade Natural Resources Consulting. 2020b. *Non-native and Invasive Summary Report for LaBoube Parcel APN 142-010-53*. Prepared for RCLC.

State Water Resources Control Board (SWRCB). 1974. Areas of Special Biological Significance. California's Marine State Water Quality Protection Areas. State Water Resources Control Board. Sacramento, CA.

_____2022. *California's Areas of Special Biological Significance.* Accessed on March 10, 2022, at: https://www.waterboards.ca.gov/water_issues/programs/ocean/asbs_map.shtml

U.S. Army Corps of Engineers (USACE). *2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), ed.* J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-3.

_____. 2012. *National Wetlands Plant List Indicator Rating Definitions.*

_____. 2015. *Final 2015 Regional Compensatory Mitigation and Monitoring Guidelines for South Pacific Division USACE*.

_____. 2016. *Wetland Plant List for the Western Mountains, Valleys and Coast.*

U.S. Department of Agriculture – Natural Resource Conservation Service (USDA-NRCS). 1999. *Soil Survey of Mendocino County, California, Western Part*. C.A. Rittiman, Jr. and T.Thorson.

_____. 2018. Field Indicators of Hydric Soils in the United States, Version 8.2. L.M. Vasilas, G. W. Hurt, and J. F. Berkowitz (eds.). USDA, NRCS in cooperation with the National Technical Committee for Hydric Soils.

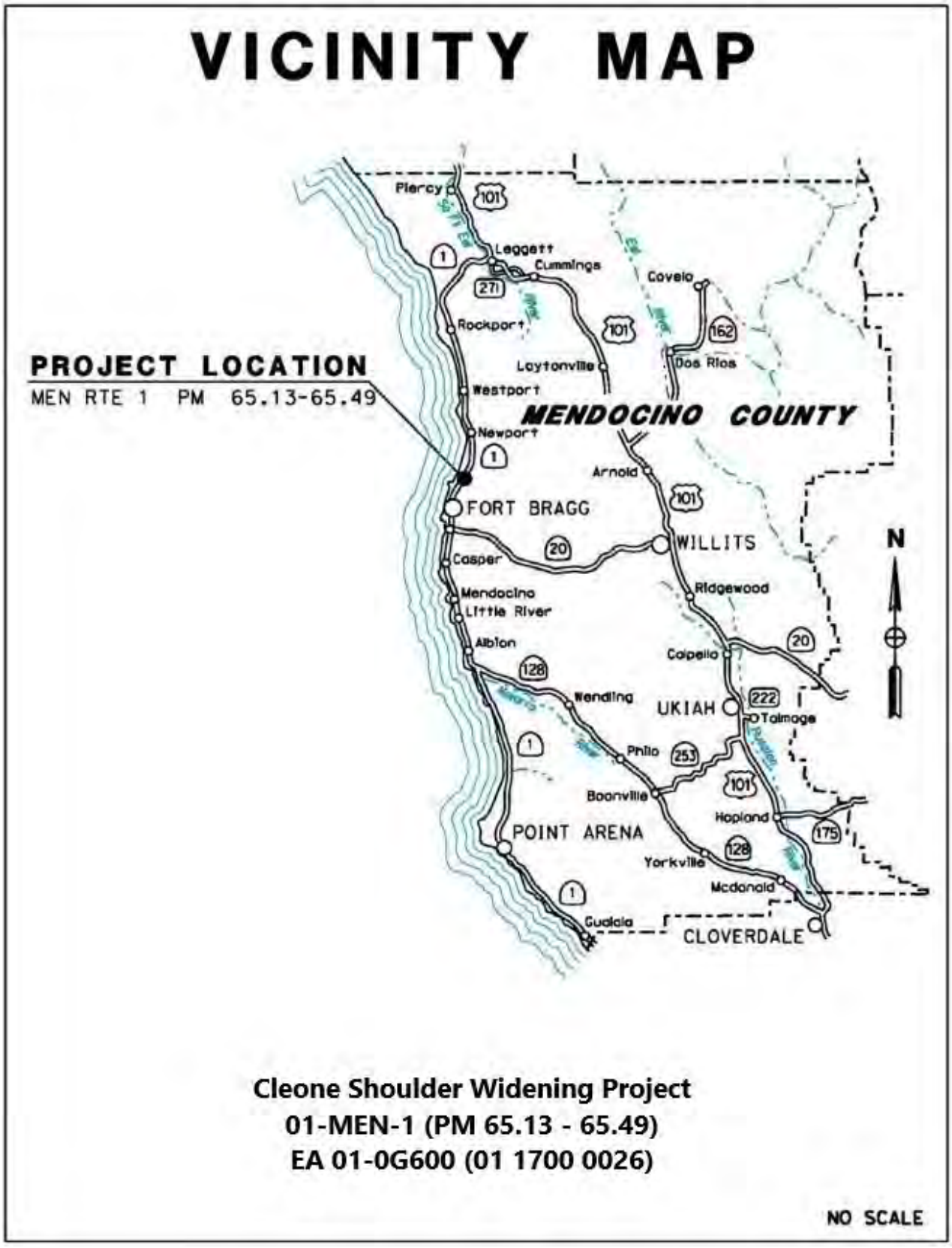
_____. 2021. *Web Soil Survey.* Available: http://www.soils.usda.gov/survey. Accessed: December 1, 2021

Watershed Assessment, Tracking & Environmental Results System (WATERS). 2021. Environmental Protection Agency. Available here: https://www.epa.gov/waterdata/waters-watershed-assessment-tracking-environmental-results-system. Accessed: December 1, 2021.

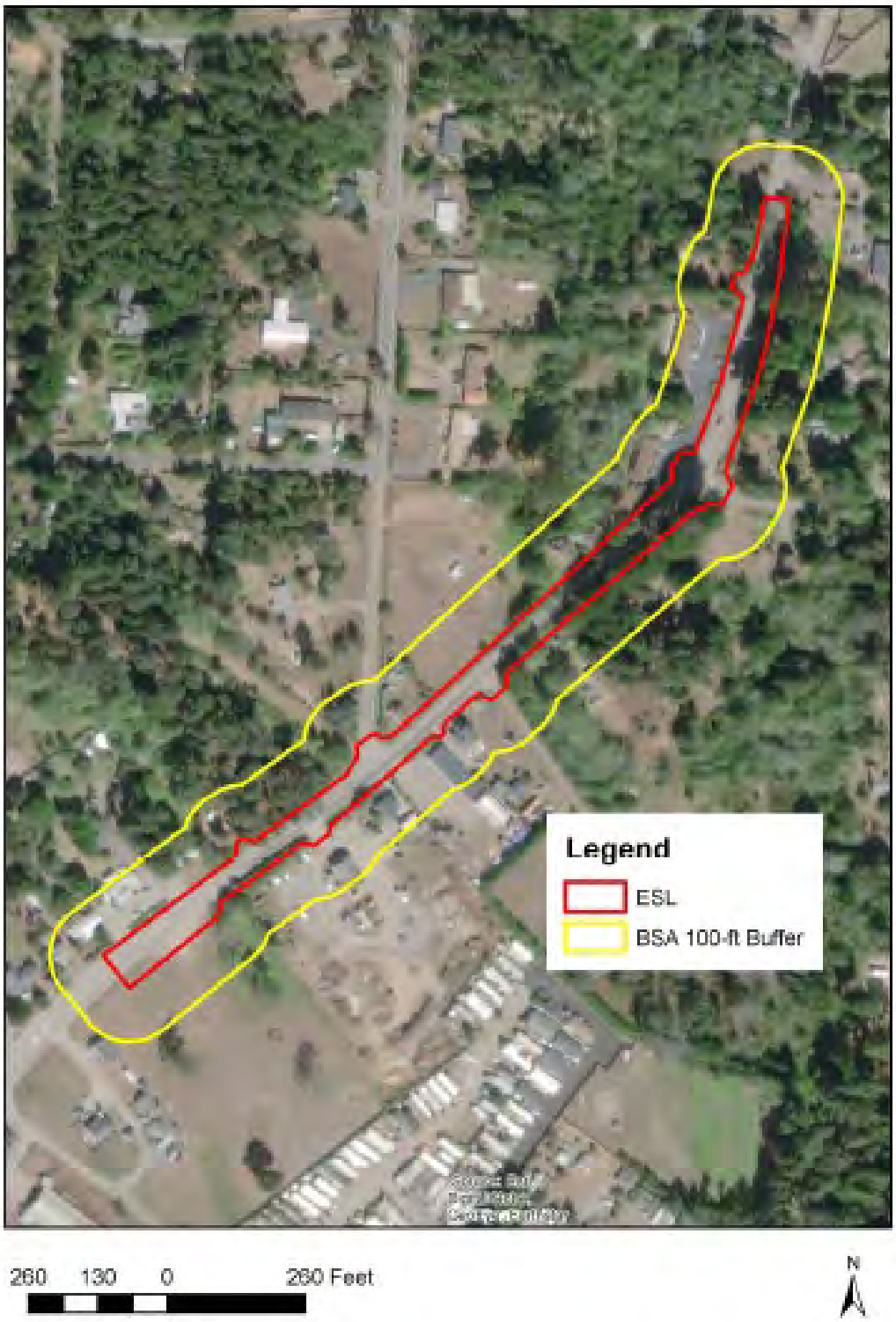
Western Regional Climate Center (WRCC). 2020. Web Soil Survey. Retrieved November, 29, 2021 from https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca2147.

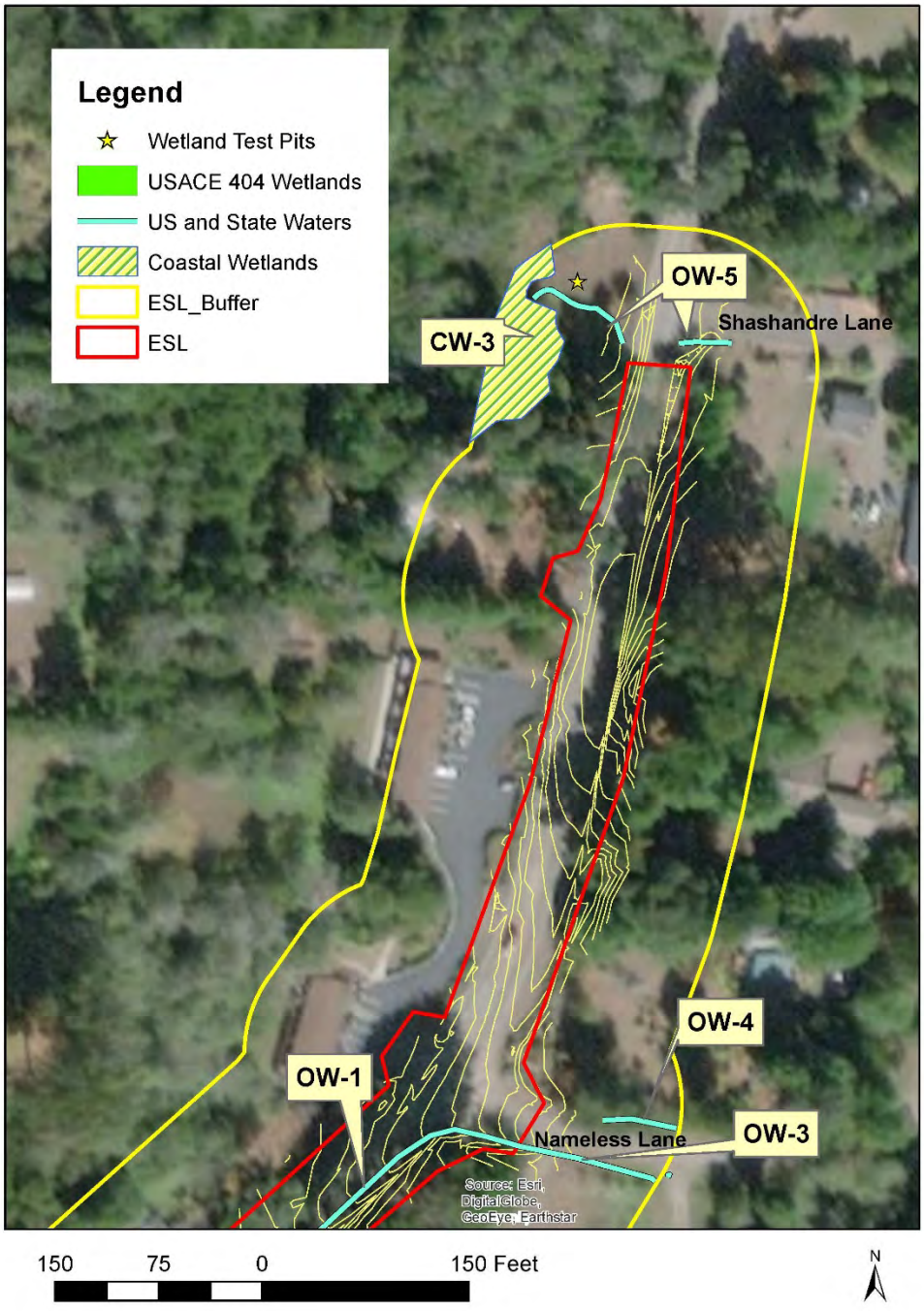
Appendix A. **Project Maps**

Cleone Shoulder Widening Project - Vicinity Map

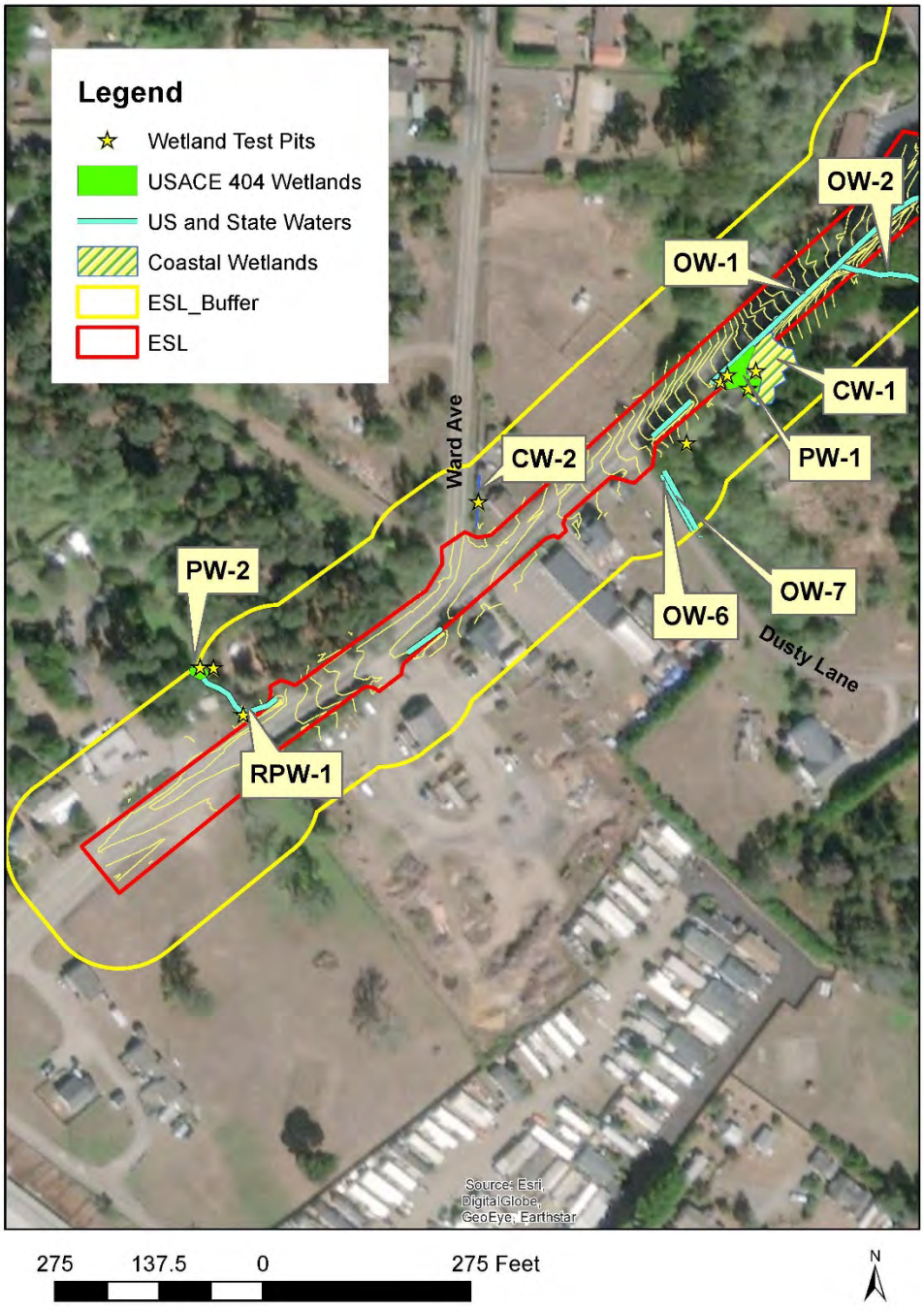


Cleone Shoulder Widening Project - Site Map





Potentially Jurisdictional Water Features within the Project ESL and BSA - North of Nameless Lane

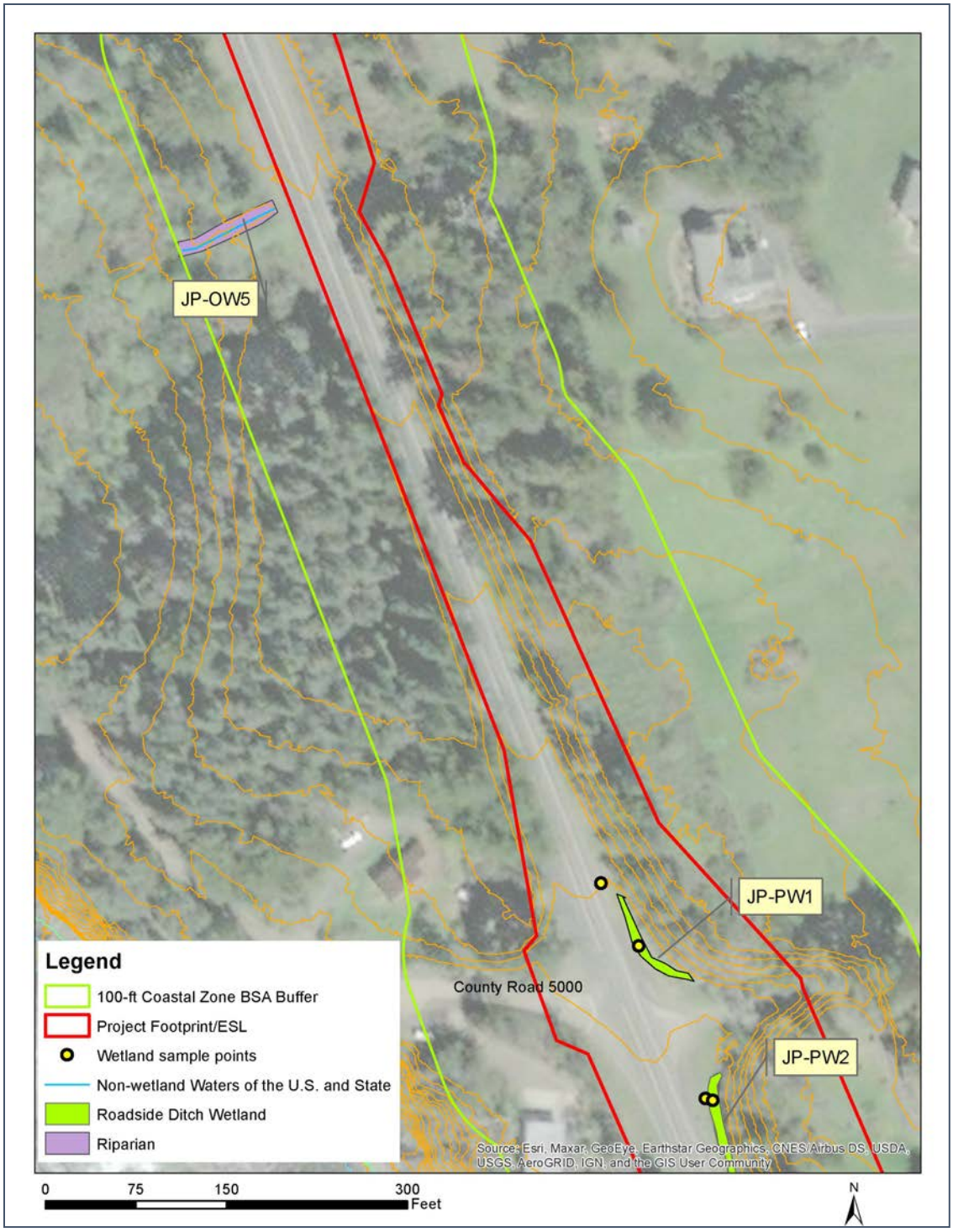


Potentially Jurisdictional Water Features within the Project ESL and BSA - South of Nameless Lane

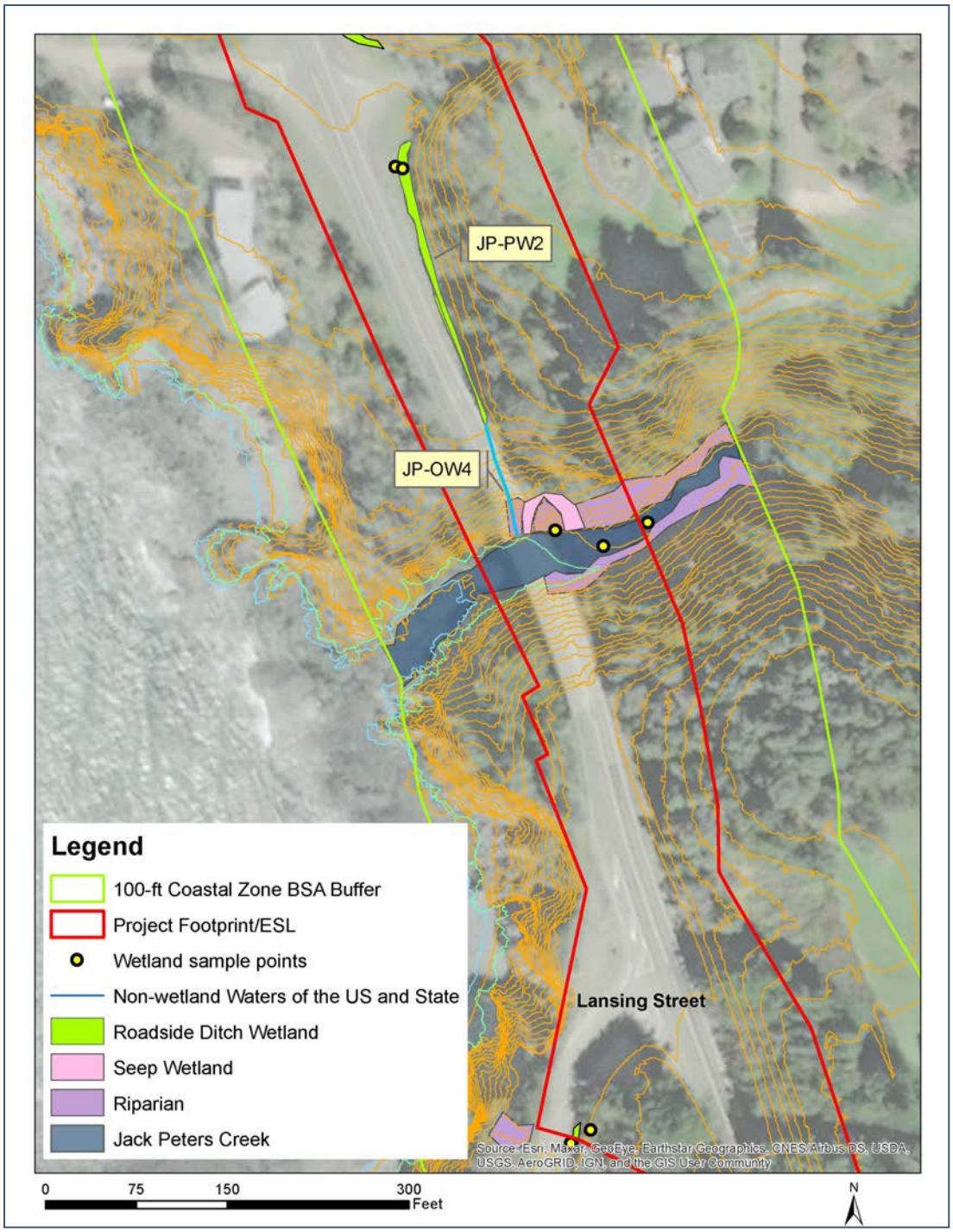
Jack Peters Bridge Widening Project - Vicinity Map

Jack Peters Bridge Widening Project - Site Maps

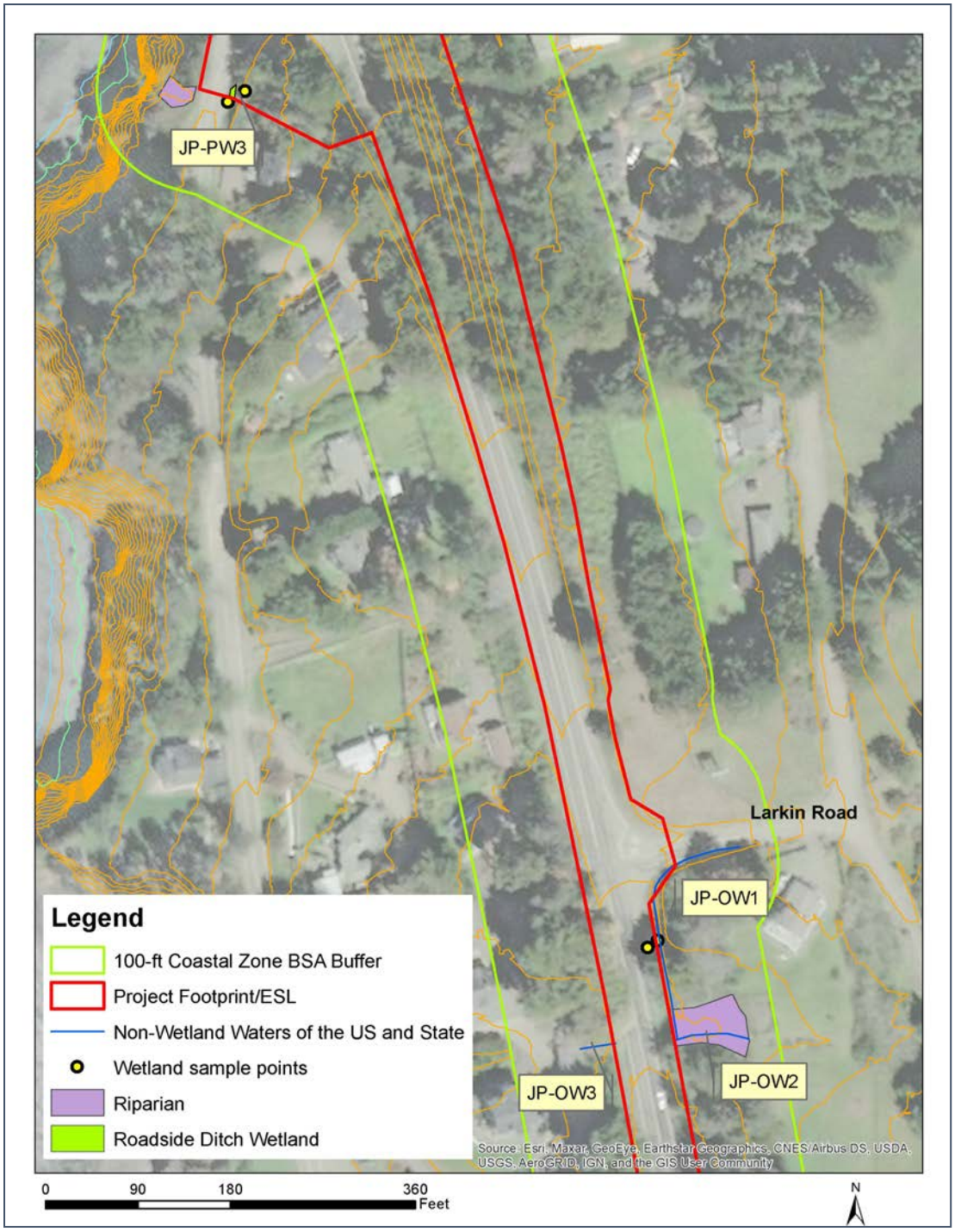

Legend
ESL
100-ft Coastal Zone BSA Buffer
State Route 1
Lansing Street
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
0
75
150
300
450
600
Feet
N



Potentially Jurisdictional Wetlands and Waters and Associated Riparian Habitat within the BSA - North of County Road 5000

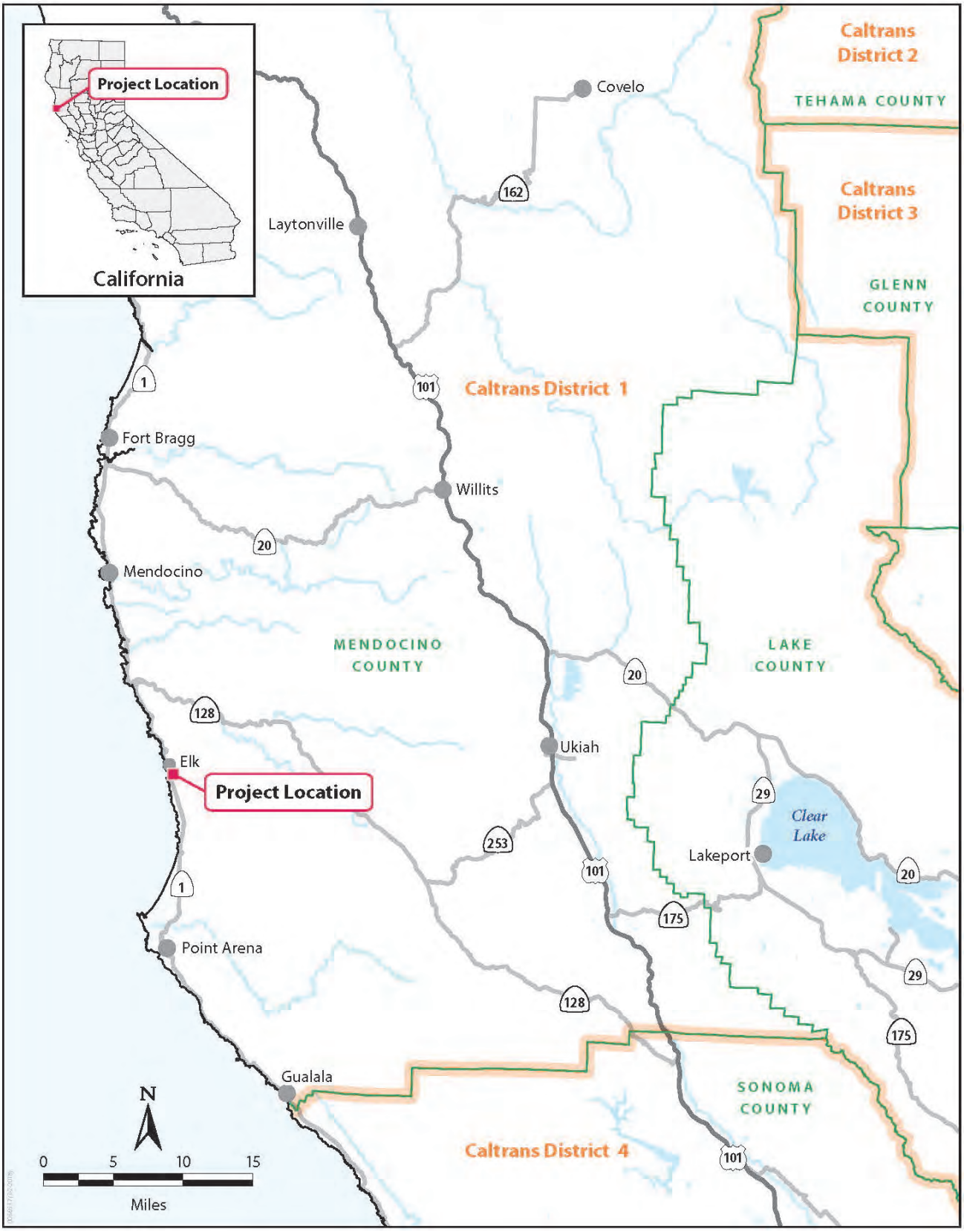


Potentially Jurisdictional Wetlands and Waters and Associated Riparian Habitat within the BSA - North of Lansing Street



Potentially Jurisdictional Wetlands and Waters and Associated Riparian Habitat within the BSA - South of Lansing Street

Elk Creek Bridge Replacement Project - Vicinity Map



Elk Creek Bridge Replacement Project - Site Map

Elk Creek Bridge Replacement
Project (0E110)
November 2020

Standard Environmental Study Areas

N

Environmental
Study Limits
(5.76 ac.)

Biological
Study Area
(12.90 ac.)

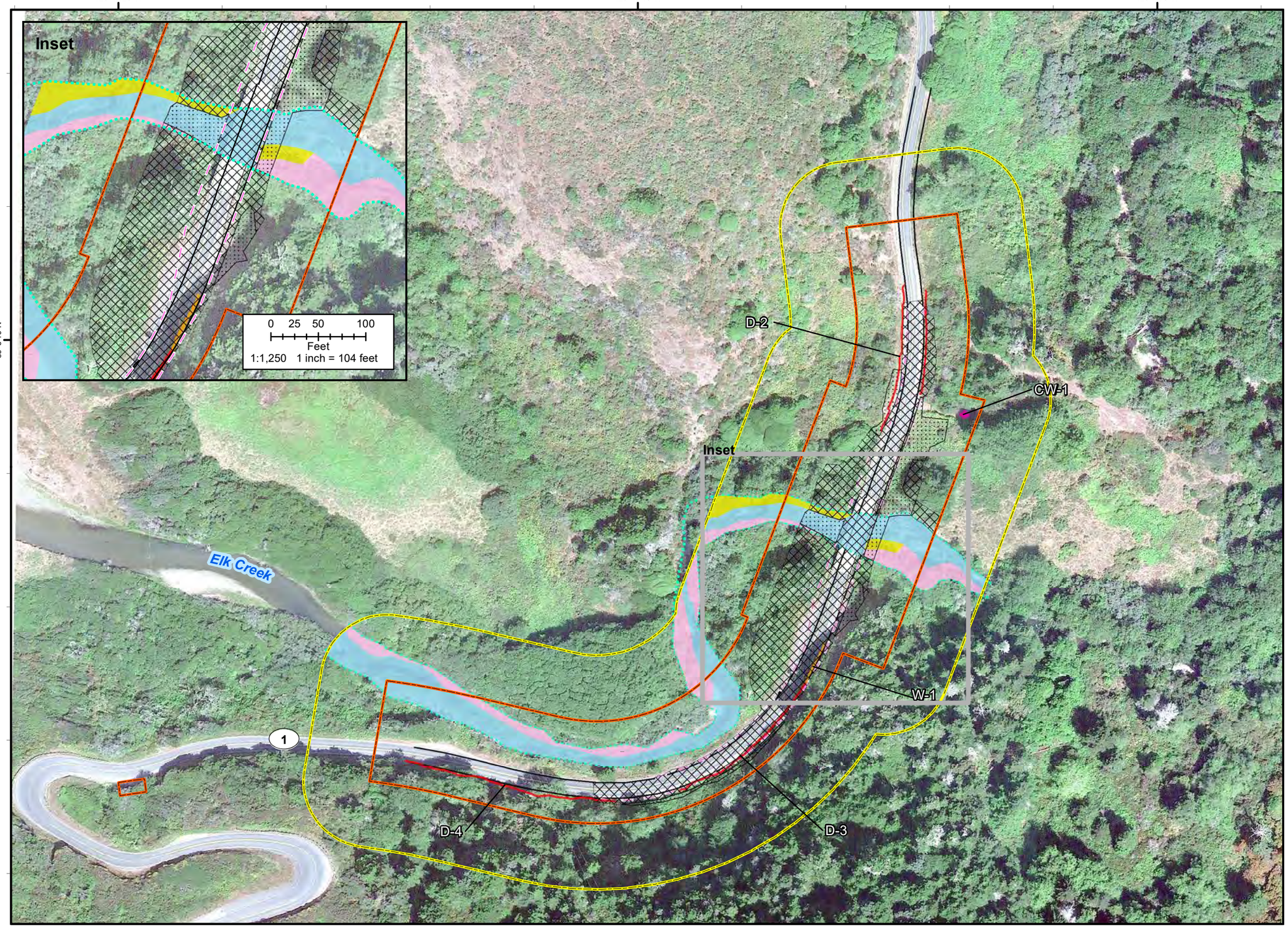
Caltrans

0 65 130 260
Feet

Elk Creek Bridge Project - Waters of the U.S./State Maps

123°42'20"W | 123°42'10"W | 123°42'0"W

39°6'10"N



Elk Creek Bridge Replacement Project (01-0E110) June 2021

- Biological Study Area (12.90 ac.)
- Environmental Study Limits (5.76 ac.)
- Proposed Edge of Pavement
- Existing Edge of Pavement
- OHWM
- Temporary Impacts
- Temporal Impacts*

Potentially Jurisdictional Waters

U.S. Army Corps of Engineers (USACE)

- Ditch (D2, D3, D4)
- Perennial Stream
- Red Alder Forest Wetland
- Sitka Willow Thicket Wetland
- Wetland Ditch (W1)

California Coastal Commission (CCC)

- Seasonal Wetland (CW1)

N

* For this analysis, most impacts to forested wetlands are considered "Temporal" because replacement trees in the temporarily affected areas would require more than 1 year to regrow. True permanent impacts are too small to accurately show at this scale

CCC = coastal wetland, regulated by California Coastal Commission
USACE = water of the United States, regulated by U.S. Army Corps of Engineers

0 75 150 300
Feet
1 inch = 150 feet

Path: W:\0Graydon\01-0E110_ElkCrBridgeProject_GIS\GIS_ICF\NES_GIS\Elk_updated map_Dg_4.23.2021.mxd; Author: ICF; Date: 4/23/2021

Impacts on Potentially Jurisdictional Waters of the United States and Waters of the State

123°42'10"W

123°42'0"W

39°6'10"N

D-2

CW-1

Elk Creek

1

W-1

D-4

D-3

Elk Creek Bridge Replacement Project (01-0E110) June 2021

Biological Study Area (12.90 ac.)

Environmental Study Limits (5.76 ac.)

Proposed Edge of Pavement

OHWM

Potentially Jurisdictional Waters

U.S. Army Corps of Engineers (ACE)

Ditch (D2, D3, D4, Other Waters)

Perennial Stream

Red Alder Forest Wetland

Sitka Willow Thicket Wetland

Wetland Ditch (W-1)

California Coastal Commission (CCC)

Seasonal Wetland (CW-1)

N

* For this analysis, most impacts to forested wetlands are considered "Temporal" because replacement trees in the temporarily affected areas would require more than 1 year to regrow. True permanent impacts are too small to accurately show at this scale

0 75 150 300

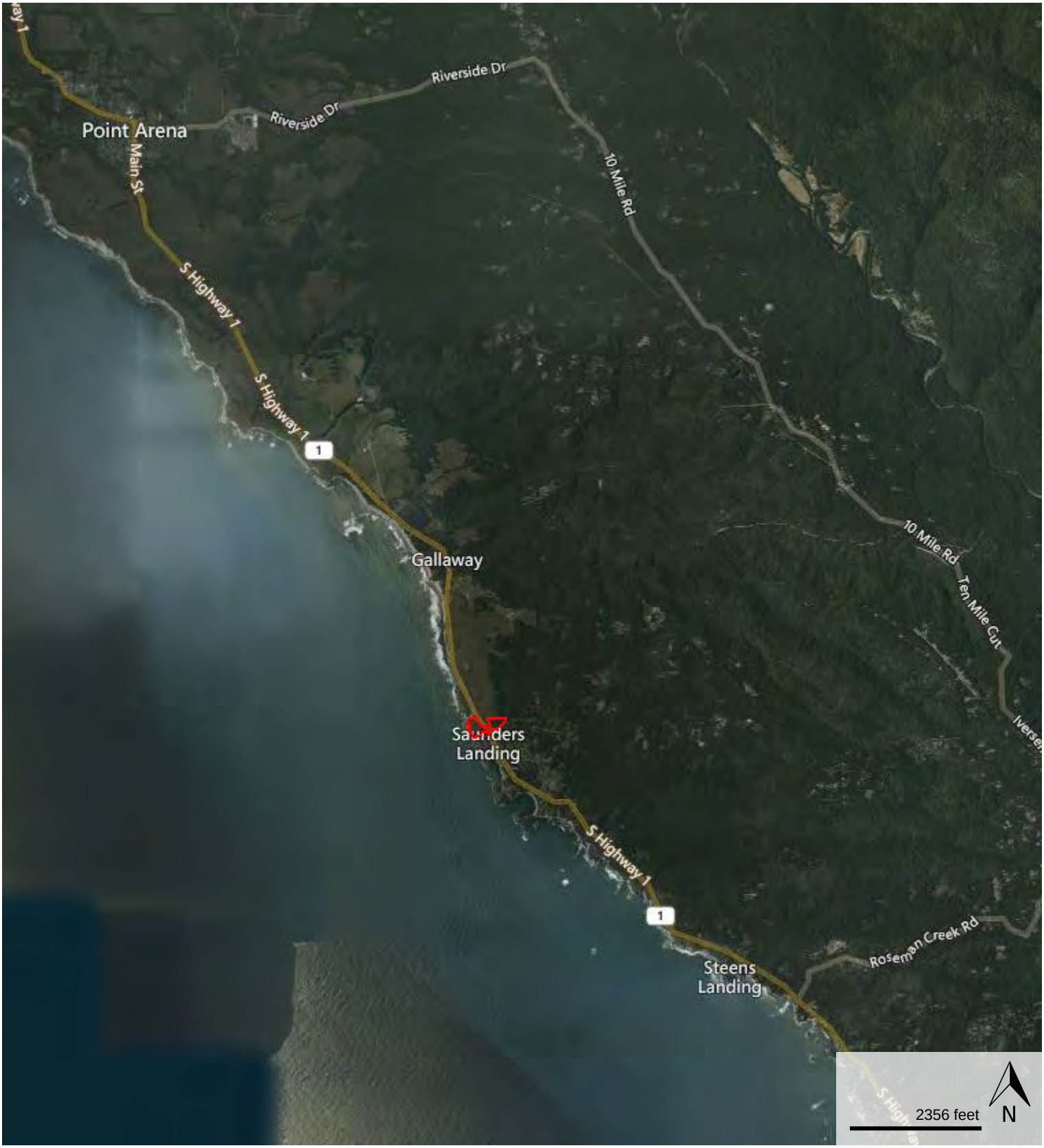
Feet

1 inch = 137.5 feet

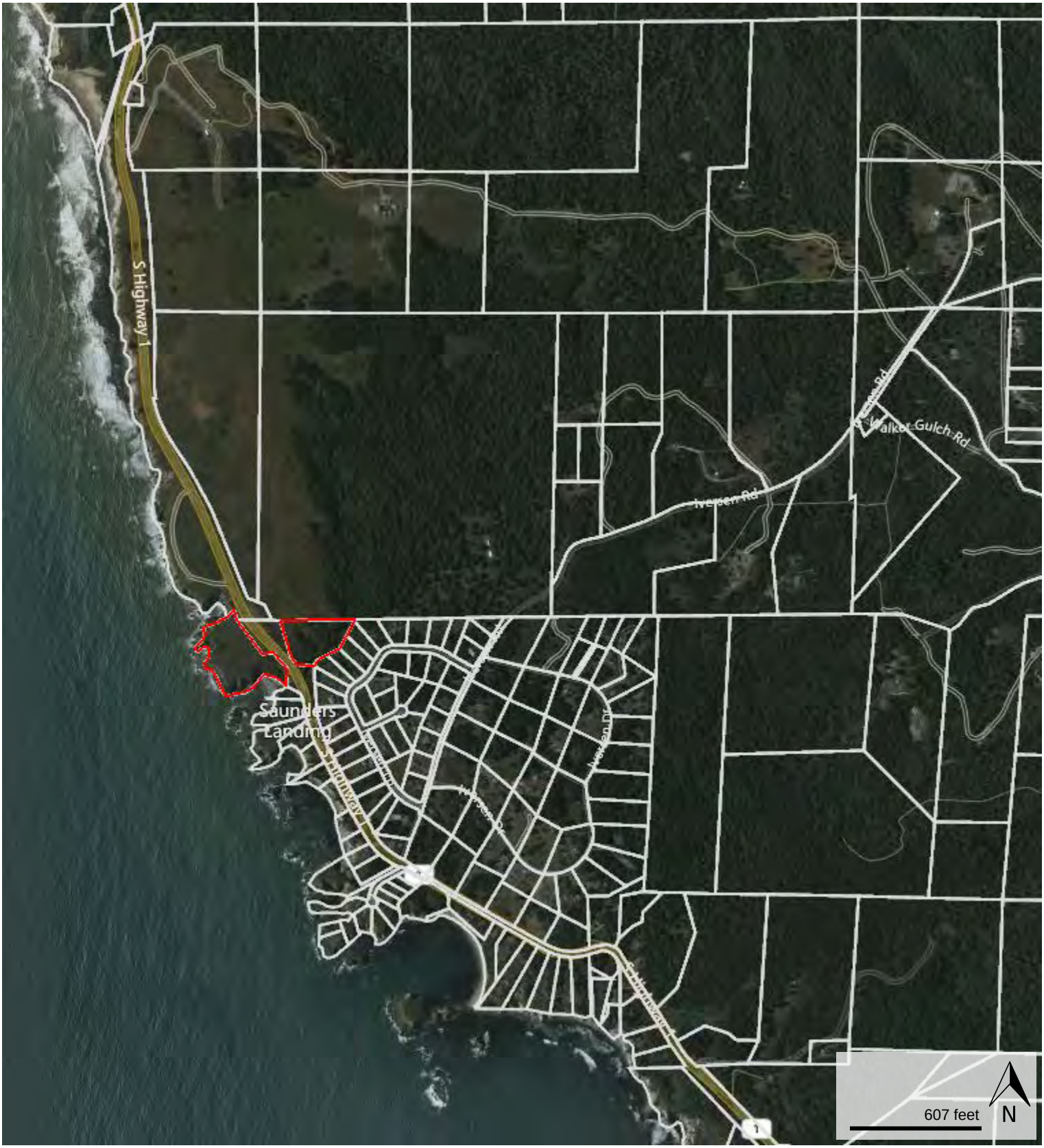
Path: W:\0Graydon\01-0E110_ElkCrBridge\Project_GIS\GIS_ICF\NES_GIS\ElK_SNC map_May2021.mxd; Author: ICF; Date: 12/6/2021

Potentially Jurisdictional Waters of the U.S. and Waters of the State

LaBoube Mitigation Parcels - Vicinity Map



LaBoube Mitigation Parcels - Site Map



Appendix B. Letters of Mutual Interest - Laboube Family

We envision a protected and restored Mendonoma coast conserved for public enjoyment and appreciation of its natural beauty, abundant diversity of wildlife, and rich cultural history.

June 7, 2019

Letter of Mutual Interest

This Letter will confirm the mutual interest of the Redwood Coast Land Conservancy (RCLC) and Mr. Kenneth LaBoube in the eventual purchase of Mr. LaBoube's Mendocino County real property APN 142-010-53 and APN 142-010-54, which together constitute one legal parcel as determined by the Mendocino County Certificate of Compliance recorded May 21, 1982.

The basis for this mutual interest is as follows:

1. The purchase price will be determined by an independent market appraisal of the property by Chris Bell, MAI, a qualified appraiser pre-approved by the State Coastal Conservancy (SCC). The cost of this appraisal ($6,500) will be paid for as follows: half ($3,250) by RCLC from funds obtained from the SCC and half ($3,250) by seller, Kenneth LaBoube. A copy of the appraisal will be promptly furnished to Mr. LaBoube.

2. It is understood that initiation of the aforementioned appraisal will occur only after RCLC has received a commitment from SCC of funds to pay half of the estimated costs thereof.

3. RCLC will, within a reasonable time following the purchase of the property, process and complete a Coastal Development Use Permit with the County of Mendocino to construct a public foot trail from the State of California property that abuts the northern boundary of the subject property down to the Hearn Gulch beach. It is the understanding of RCLC that such a public trail will satisfy the County of Mendocino Local Coastal Plan's Public Access Policy 4.11-20, which has been placed into the public record as a public accommodation in the event a campground or any other designated Visitor Accommodation is developed on APN 027-511-33, property currently owned by Mr. LaBoube. Any visitor to such a Visitor Accommodation would be able to use this trail to access the beach from the existing Caltrans paved overlook area just to the north of the subject property.

4. Both parties have a mutual interest in working together to make any eventual purchase agreement escrow period as short as possible, with the understanding that the State Coastal Conservancy's protocol for completing such an escrow must be recognized and adhered to.

5. It is further understood by both parties that, while this Letter is not legally binding upon either party, it is an expression of mutual interest to continue to work together toward the eventual sale and purchase of the subject property as outlined herein, to the mutual benefit of each party.

Laurie Mueller 6/7/2019

Laurie Mueller, President Date
Redwood Coast Land Conservancy

Kenneth LaBoube 6/22/2019

Kenneth LaBoube Date

1 Letter of Mutual Interest

5/11/22

This letter will confirm the mutual interest of the Mendocino Land Trust (MLT), Redwood Coast Land Conservancy (RCLC), Ms. Stine LaBoube and Ms. Kivi Simone LaBoube, the daughters of Mr. Kenneth LaBoube (heirs to the estate of Mr. Kenneth LaBoube, deceased) in the eventual purchase of Mr. LaBoube's Mendocino County real property identified by APN 142-010-53 and APN 142-010-54, which together constitute one legal parcel as determined by the Mendocino County Certificate of Compliance recorded May 21, 1982.

The basis for this mutual interest is as follows:

1. The purchase price will be determined by an update (March 31, 2022) of the original independent market appraisal of the property (September 13, 2019, effective August 14, 2019) by Chris Bell, MAI, a qualified appraiser pre-approved by the State Coastal Conservancy (SCC). The cost of the appraisal update was borne by the SCC. Copies of the appraisal update and original appraisal have been furnished to Ms. Stine LaBoube and Ms. Kivi Simone LaBoube.
2. MLT and RCLC are preparing a proposal to the SCC for a grant to fund design, environmental impact assessment, Coastal Development Use Permit and other applicable regulatory permitting, and construction bid documents to build a public foot path to extend the California Coastal Trail from the Hearn Gulch beach through the subject property, through the State of California property that abuts the northern boundary of the subject property, and continuing north to Schooner Gulch State Beach.
3. Caltrans is developing a Cooperative Agreement with the SCC to provide funds to purchase the subject property for a variety of habitat restoration actions intended to satisfy Caltrans permittee-responsible obligations under Coastal Development Use Permits approved by the County of Mendocino and California Coastal Commission for three highway repair and improvement projects in Mendocino County. All funds to purchase the subject property will be provided by Caltrans and furnished by SCC to purchase escrow by June 30, 2023. The subject property would be conveyed in fee to MLT with covenants recorded to restrict use of the property to habitat restoration, highway impact mitigation maintenance, public trail access, and appurtenant open space.
4. Caltrans will provide all funds, develop, and establish habitat restoration intended to satisfy permittee-responsible mitigation of the three highway repair and improvement projects. Caltrans will also provide all funds for perpetual monitoring and maintenance of the mitigation actions to MLT.
5. Caltrans funding of purchase and mitigation development, establishment, monitoring, and maintenance, and MLT design, construction, and maintenance of the California Coastal Trail will not create any residual obligations for Ms. Stine LaBoube and Ms. Kivi Simone LaBoube.
6. The four parties have a mutual interest in working together to make any eventual purchase agreement escrow period as short as possible, with the understanding that the SCC protocol for completing such an escrow must be recognized and adhered to.
7. It is further understood by all parties that, while this letter is not legally binding upon the parties, it is an expression of mutual interest to continue to work together toward the eventual sale and purchase of the subject property as outlined herein, to the mutual benefit of each party.

Letter of Mutual Interest

5-17-2022

Conrad Kramer, Executive Director — Date

Mendocino Land Trust

John Walton, President — Date

Redwood Coast Land Conservancy Board of Directors

DocuSigned by:

5/15/2022

91A514101977440...

Stine LaBoube — Date

Co-Heir to estate of Kenneth LaBoube

DocuSigned by:

Kivi Simone LaBoube

5/16/2022

11CAF3B38A9B451...

Kivi Simone LaBoube — Date

Co-Heir to estate of Kenneth LaBoube

Letter of Mutual Interest

Conrad Kramer, Executive Director — Date

Mendocino Land Trust

John Walton, President — 5/16/22 Date

Redwood Coast Land Conservancy Board of Directors

DocuSigned by: 91A51410197744D... — 5/15/2022 Date

Stine LaBoube

Co-Heir to estate of Kenneth LaBoube

DocuSigned by: Kivi Simone LaBoube 11CAF3B38A9B451... — 5/16/2022 Date

Kivi Simone LaBoube

Co-Heir to estate of Kenneth LaBoube

Appendix C. Transfer of Funds Mitigation Agreement for Saunder's Landing Acquisition

Appendix D. Property Analysis Record (PAR) for Saunder's Landing

Mitigation Feature	Activity/ Action	Responsible Party	Description	Frequency	Actions Required	Unit	Number of Units	Cost/ Unit	Annual Cost (single occurrence cost)	Divide Years	Total Cost (annual set-aside)	Assumption #
Non-Wasting Endowment												
Habitat Maintenance												
Annual Monitoring for Security and Biological Resources	Target Invasive Plant Species Mapping and Monitoring	MLT	Map and monitor target invasive plant species within 12 acre parcels	Annually	Monitor property annually, record observations	Labor hours	24	$60	$1,440	1	$1,440	1
	Target Invasive Plant Species Removal	MLT	Remove target invasive plant species within 12 acre parcels; MLT may consider removal of other invasive species as consistent with long-term management plan	Quarterly	Removal of iceplant	Labor hours	24	$60	$1,440	0.25	$5,760	1
	Greenwaste Disposal	MLT	Dispose of invasive species at approved green waste facility	Quarterly	Disposal of green waste	Item	1	$30	$30	0.25	$120	2
	Volunteer Coordination	MLT	Coordinate volunteers to remove invasives	Quarterly	Invasive plant treatment	Labor hours	4	$60	$240	0.25	$960	3
	Bishop Pine Stand Health Evaluation	MLT	Bishop pine stand evaluation over 1.1 acres	Every 5 years	Complete health assessment of Bishop pine community	Labor hours	8	$90	$720	5	$144	4
	Bishop Pine Stand Management	MLT	Manage 1.1 acres of bishop pine forest	Every 5 years	Treatment or removal of dead and diseased Bishop pine vegetation	Labor hours	32	$60	$1,920	5	$384	5
	Mileage	MLT	Vehicle miles roundtrip from Fort Bragg	Monthly	100 miles roundtrip from Fort Bragg (50 miles one way)	Item	100	$0.60	$60	0.08	$720	6
	Equipment and Supplies	MLT	Invasive species removal supplies (gloves, trash bags, tools, landscape materials, etc)	Annually	Supplies to remove and dispose of invasive species	Item	1	$100	$100	1	$100	7
		MLT	Cost to replace equipment and subscription costs	Annually	Equipment and subscription costs	Item	1	$175	$175	1	$175	7
									Sub-Total Habitat Maintenance Cost		**$9,803**	
Property Management and Maintenance												
Property Management and Maintenance	Trash disposal	MLT	Dispose of trash found on 12 acre parcels	1 hour monthly	Pick up trash and if necessary, take to dump	Labor hours	1	$60	$60	0.08	$720	8
				Quarterly	Disposal fee	Item	1	$30	$30	0.25	$120	8
	Signage	MLT	Ongoing maintenance cost to replace damaged or vandalized signs	Every 2 years	Replace damaged or vandalized management signs, trail signs, sensitive habitat signs	Item	4	$250	$1,000	2	$500	9
	Trail Infrastructure Maintenance	MLT	Ongoing infrastructure maintenance of Saunders Landing trail to protect sensitive habitats on mitigation parcels	Quarterly	Repairs to trail, signs, and infrastructure	Labor hours	2	$60	$120	0.25	$480	10
				Annually	Material needed for infrastructure repair (wood, rebar, etc)	Item	1	$400	$400	1	$400	11
	Trail Landscape Maintenance Contractor	MLT	Ongoing landscaping maintenance of Saunders Landing trail to protect sensitive habitats on mitigation parcels	6x/year	Mow public trail, weed and remove invasives as needed	Labor hours	2	$60	$120	0.17	$720	12
	Fence Infrastructure Maintenance	MLT	Replace fence after projected lifespan of 10 years	Every 10 years	10 years after first initial installation, fence will need to be replaced	Item	1	$40,000	$40,000	10	$4,000	13
			Ongoing maintenance supply cost to repair damaged or vandalized fencing	Annually	Tools and equipment repair and replacement	Item	1	$200	$200	1	$200	14
			Ongoing maintenance labor cost to repair damaged or vandalized fencing	Annually	Replace damaged or vandalized fencing infrastructure	Labor Hours	4	$60	$240	1	$240	15
									Sub-Total Property Management and Maintenance Cost		**$7,380**	

Mitigation Feature	Activity/ Action	Responsible Party	Description	Frequency	Actions Required	Unit	Number of Units	Cost/ Unit	Annual Cost (single occurrence cost)	Divide Years	Total Cost (annual set-aside)	Assumption #
Reporting												
Reporting to Resource Agency	General Inspections	MLT	General Inspections	Annually	Conduct general inspections that will concentrate on an evaluation of the following: erosion, trash accumulation, invasive species, evidence of unauthorized use of the site, and/or vandalism that jeopardizes the property. The entire perimeter of the property will be covered, as well as meandering transects through its interior. Photo documentation also will be collected. Permanent photo points for taking photographs will be established, and a site map showing the photo point(s) will be prepared for the mitigation project file. Representative photographs will be taken once per year during the same season.	Labor Hours	16	$60	$960	1	$960	16
	General Inspection Report	MLT	General Inspection Report	Annually	Report includes a reconciliation of endowment funds expended to date, record of observations, map of mitigation area, photo documentation, maintenance or management actions, and any recommendations for altered management practices. Prepare and submit reports to agencies.	Labor Hours	24	$70	$1,680	1	$1,680	16
									Sub-Total Reporting Costs		**$2,640**	
Administration												
Administration	Project Coordination and Budget Management	MLT	Supervise planning and management of mitigation land	Annually	Coordinate all aspects of mitigation project management, including reconciliation of budget, tracking monthly expenses, annual maintenance work, etc.; Conduct annual general inspections	Labor hours	80	$70	$5,600	1	$5,600	17
	Misc. Office	MLT	Misc. office expenses	Annually	Supplies such as paper, pens, staples, contribute to computer, printer, software purchases, etc.	Item	1	$100	$100	1	$100	18
									Sub-Total Administration Cost		**$5,700**	
Financial Summary - Long Term Costs												
Financial Summary	Ongoing Annual Costs				Sub-Total Habitat Maintenance Costs + Sub-Total Property Management and Maintenance Costs + Sub-Total Administration Costs						$25,523	
	Contingency Expense		10% contingency = Ongoing Annual Costs x 10%.		Fund is to cover unanticipated expenses, adaptive management	Item	1	$2,552	$2,552	1	$2,552	
									Sub-Total Ongoing Annual & Contingency Cost		**$28,075**	
	Endowment Capitalization											
	Funding Endowment	Caltrans	Establish endowment based on 3.5 % return	Lump Sum = Sub-Total Annual Ongoing Cost x 3.5%	Receive endowment funds	Lump Sum	$802,151				$802,151	
									Non-Wasting Endowment to Provide Annual Income =	**$28,075**	**$802,151**	
Wasting Endowment (Operating Costs for 3 years while non-wasting endowment matures)												
Habitat Maintenance												
Annual Monitoring for Biological Resources	Bishop Pine Stand Health Evaluation	MLT	Bishop pine stand evaluation over 1.1 acres	8 hours/year every 5 years	Complete health assessment of Bishop pine community	Labor hours	8	$90	$720	1	$720	4
	Bishop Pine Stand Management	MLT	Manage 1.1 acres of bishop pine forest	32 hours/year every 5 years	Treatment or removal of dead and diseased Bishop pine vegetation	Labor hours	32	$60	$1,920	1	$1,920	5
	Mileage	MLT	Vehicle miles roundtrip from Fort Bragg	Monthly for 3 years	100 miles roundtrip from Fort Bragg (50 miles one way)	Item	3600	$0.60	$2,160	1	$2,160	6
	Equipment and Supplies	MLT	Maintenance supplies (gloves, trash bags, tools, landscape materials, etc)	Annually for 3 years	Supplies to remove and dispose of invasive species	Item	3	$100	$300	1	$300	7
									Sub-Total Habitat Maintenance Cost		**$5,100**	

Mitigation Feature	Activity/ Action	Responsible Party	Description	Frequency	Actions Required	Unit	Number of Units	Cost/ Unit	Annual Cost (single occurrence cost)	Divide Years	Total Cost (annual set-aside)	Assumption #
Property Management and Maintenance												
Property Management and Maintenance	Trash disposal	MLT	Dispose of trash found on 12 acre parcels	1 hour monthly for 3 years	Pick up trash and if necessary, take to dump	Labor hours	36	$60	$2,160	1	$2,160	8
				Quarterly for 3 years	Disposal fee	Item	12	$30	$360	1	$360	8
										Sub-Total Property Management and Maintenance Cost	**$2,520**	
Reporting												
Reporting to Resource Agency	General Inspections	MLT	General Inspections	16 hrs/year for 3 years	Conduct general inspections that will concentrate on an evaluation of the following: erosion, trash accumulation, invasive species, evidence of unauthorized use of the site, and/or vandalism that jeopardizes the property. The entire perimeter of the property will be covered, as well as meandering transects through its interior. Photo documentation also will be collected. Permanent photo points for taking photographs will be established, and a site map showing the photo point(s) will be prepared for the mitigation project file. Representative photographs will be taken once per year during the same season.	Labor Hours	48	$60	$2,880	1	$2,880	16
	General Inspection Report	MLT	General Inspection Report	24 hours/year for Years 1-3	Report includes a reconciliation of endowment funds expended to date, record of observations, map of mitigation area, photo documentation, maintenance or management actions, and any recommendations for altered management practices. Prepare and submit reports to agencies.	Labor Hours	72	$70	$5,040	1	$5,040	16
										Sub-Total Reporting Costs	**$7,920**	
Administration												
Administration	Development of Long-Term Management Plan	MLT	Create Long-Term Management Plan	Once (Hours to Develop Long-Term Management Plan)	Write long-term management plan for Saunder's Landing that would include, but may not be limited to, recreation, education, and public access in addition to preservation and continued restoration of sensitive resources at the site	Labor hours	80	$70	$5,600	1	$5,600	19
	Project Coordination and Budget Management	MLT	Supervise planning and management of mitigation land	80 hours/year for 3 years	Coordinate all aspects of mitigation project management, including reconciliation of budget, tracking monthly expenses, annual maintenance work, etc.; Conduct annual general inspections	Labor hours	240	$70	$16,800	1	$16,800	17
	One-Time Endowment Account Establishment	NFWF	Establish endowment	Once	Establishment of endowment account	Lump Sum	1	$3,400	$3,400	1	$3,400	20
	Misc. Office	MLT	Misc. office expenses	$100/year for 3 years	Supplies such as paper, pens, staples, contribute to computer, printer, software purchases, etc.	Item	3	$100	$300	1	$300	18
										Sub-Total Administration Cost	**$26,100**	
Financial Summary												
Financial Summary	Wasting Endowment Costs				Sub-Total Habitat Maintenance Costs + Sub-Total Property Management and Maintenance Costs + Sub-Total Administration Costs						$41,640	
	Contingency Expense		10% contingency = Wasting Endowment Costs x 10%		Fund is to cover unanticipated expenses, adaptive management	Item	1	$4,164	$4,164	1	$4,164	
										Wasting Endowment Total	**$45,804**	

Non-Wasting Endowment Total	***$802,151***
Wasting Endowment Total	***$45,804***
Saunder's Landing Total Endowment Funds	**$847,955**

Saunders Landing: Draft PAR Analysis for Long-term Management		
Mitigation Feature/Category	**Assump #**	**Assumptions**
General Assumptions*	1	Mendocino Land Trust (MLT) labor forces at $60/hr for invasive species monitoring/mapping and removal
	2	Casper Transfer Station charges minimum fees for solid waste disposal ($18/cubic yard); Assuming that large amount of invasive species will need to be removed for first two years; Budgeting on the high end ($30/month)
	3	MLT labor forces at $60/hour for 4 hours/quarter to coordinate volunteers
	4	8 hours in Year 1 and then every 5 years thereafter
	5	32 hours (16 hours/2 people) in Year and then every 5 years thereafter
	6	Assume 100 miles roundrip from Fort Bragg to Saunders Landing at 0.60/mile reimbursement
	7	Assuming that supplies will costs $100/year; $175/year for field equipment and software subscription (e.g., ESRI GIS)
	8	Casper Transfer Station charges minimum fees for solid waste disposal ($38.75/cubic yard for trash; $18/cubic yard for hazardous treated wood and metal); Assuming that very limited amount of solid waste will occur on parcels; Budgeting on the high end ($30/month) in case of rare instance that a large amount of solid waste needed to be disposed of; Using Mendocino Land Trust labor forces at $60/hr for solid waste management
	9	Quote from sign company that MLT regularly uses
	10	MLT labor forces at $60/hr for 2 hours/quarter
	11	Assuming that materials needed to repair trail infrastructure (wood, rebar, supplies, etc) will cost ~$400/year
	12	Costs for landscape contractor that MLT regularly uses
	13	Need 1000' of fencing to be installed on western parcel as part of long-term management plan; Average cost/linear foot for wood fence installation is ~$20; 1000' x $20/linear foot = $20,000; Initial fence installation cost would be covered under wasting endowment; Eastern parcel currently has a wire fence in place and will not be replaced until a later date; Amount of fencing on eastern parcel is ~1000' as well; Costs to replace fence in future will be covered under non-wasting endowment; 2000' total of fencing x $20/linear foot = $40,000
	14	Assuming that materials needed to repair fencing (fence posts, boards, supplies, etc) will cost ~$200/year
	15	MLT will need to direct 4 hours/year for fence maintenance work
	16	MLT will need to direct 16 hours/year for 2 staff members to conduct yearly general inspections in order to complete the General Inspection Report to the agencies; MLT will need to direct 24 hours/year to complete General Inspection Report
	17	MLT will need to direct 80 hours/year for Project Management and Coordination
	18	Assuming miscellaneous office supplies (paper, ink, etc) will cost ~$100/year
	19	MLT will need to direct 80 hours to develop a Long-term Management Plan for Saunder's Landing
	20	One-time fee to establish endowment account with NFWF

Appendix E. CCC Mitigation Worksheets

Summary of Estimated Impacts and Proposed Mitigation Associated with Cleone Shoulder Widening (01-0G600)

							Mitigation Required (on and off site) - acres						Mitigation Proposed (on and off site) - acres						
							in-kind CWA/CCA wetland & other waters			in-kind ESHA			in-kind CWA/CCA wetland & other waters			in-kind ESHA			
Jurisdictional Feature	**Habitat Type**	**Impacts**			**Total "temporal +permanent" (wetland)**	**Total "temporal +permanent" (ESHA)**	**Creation (4:1)**	**Enhancement (8:1)**	**Preservation (12:1)**	**Creation (3:1)**	**Enhancement (6:1)**	**Preservation (9:1)**	**Creation**	**Enhancement**	**Preservation**	**Creation**	**Enhancement**	**Preservation**	**Notes**
		Temporary	**Temporal**	**Permanent**															
CCA Wetland	Slough Sedge (*Carex obnupta*) – single-parameter coastal wetland	-	-	0.008	0.008		0.032	0.064	0.096				-	0.317	-				Offsite Mitigation Mitigation proposed is restoration of 0.317-acre CCA wetland invaded by iceplant
CCA Wetland Totals		***0.000***	***0.000***	***0.008***	***0.008***		***0.032***	***0.064***	***0.096***				***0.000***	***0.317***	***0.000***				
CWA Wetland (Federal/State)	Slough Sedge – Palustrine-Emergent Wetland (PEM1C)	-	-	0.014	0.014		0.056	0.112	0.144				-	-	0.441				Offsite Mitigation Mitigation proposed is preservation of 0.144-acre of Waters of the U.S./State (wetlands) at the LaBoube Parcels Caltrans also proposes additional 0.297-acre Waters of the U.S./State (wetlands) mitigation to cover mitigation need for non-wetland waters impacts (see below)
Non-Wetland Waters (Federal/State)	Intermittent Drainages (R4UB4)	-	-	0.038	0.038		0.152	0.304	0.391				-	-	0.094				Offsite Mitigation Mitigation proposed is preservation of 0.094-acre of Waters of the U.S./State (non-wetland waters) at the LaBoube Parcels; Total non-wetland waters (Hearn Gulch) at LaBoube Parcels = 0.130-acre. In combination with 0.036-acre being used for Jack Peters Creek Bridge Project, 0.094-acre preservation mitigation to be applied for Cleone Shoulder Widening Project Remaining 0.297-acre mitigation required; Caltrans proposes additional 0.297-acre mitigation need to be met via the preservation of Waters of the U.S./State (wetlands) to cover mitigation need for non-wetalnd waters impacts (see above)
Waters of the U.S./State Totals		***0.000***	***0.000***	***0.052***	***0.052***		***0.208***	***0.416***	***0.535***				***0.000***	***0.000***	***0.535***				
Project 1: Cleone Shoulder Widening Project Impact Totals		**0.000**	**0.000**	**0.060**	**0.060**		**0.240**	**0.480**	**0.631**				**0.000**	**0.317**	**0.535**				

Summary of Estimated Impacts and Proposed Mitigation Associated with Jack Peters Creek Bridge (01-43484)

							Mitigation Required (on and off site) - acres						Mitigation Proposed (on and off site) - acres									
							in-kind CWA/CCA wetland & other waters			in-kind ESHA			in-kind CWA/CCA wetland & other waters			in-kind ESHA			out-of-kind ESHA			
Jurisdictional Feature	Habitat Type	Impacts			Total "temporal +permanent" (wetland)	Total "temporal +permanent" (ESHA)	Creation (4:1)	Enhancement (8:1)	Preservation (12:1)	Creation (3:1)	Enhancement (6:1)	Preservation (9:1)	Creation	Enhancement	Preservation	Creation	Enhancement	Preservation	Creation	Enhancement	Preservation	Notes
		Temporary	Temporal	Permanent																		
SNC/ESHA	Grand Fir Forest (*Abies grandis*)	-	0.210	0.088		0.298				0.894	1.788	2.682				0.894	-	-	-	-	-	Onsite Mitigation 3:1 in-kind creation mitigation = 0.894-acre; Caltrans proposes to restore grand fir SNC/ESHA onsite at a 3:1 ratio
	Bishop Pine Forest (*Pinus muricata*)	-	0.714	0.078		0.792				2.376	4.752	7.128				-	1.640	-	2.220	-	-	Onsite Mitigation Caltrans proposes SNC/ESHA enhancement activities that include removal of non-native, invasive species (Monterey cypress) within planned restoration areas on-site. 6:1 SNC/ESHA enhancement mitigation = 4.752 acres; Caltrans proposes 1.640 acres onsite which is equivalent to 35% of Project impacts (0.273 of 0.792 acre); 0.519 acre of impacts require additional mitigation In addition to 1.640-acres of SNC/ESHA enhancement activities, Caltrans proposes to plant 2.220 acres of other native tree SNC/ESHA species (grand fir). 2.220 acres of remaining 0.519 acre of Project impacts results in a mitigation ratio of 4.28:1
SNC/ESHA Totals		***0.000***	***0.924***	***0.166***		***1.090***				***3.27***	***6.54***	***9.81***				***0.894***	***1.640***	***0.000***	***2.220***	***0.000***	***0.000***	
Riparian	Red Alder Forest Alliance (*Alnus rubra*)	-	0.067	0.005		0.072				0.216	0.432	0.648				0.216	-	-	-	-	-	Onsite Mitigation 3:1 in-kind riparian creation mitigation = 0.216-acre; Caltrans proposes to restore riparian habitats onsite at a 3:1 ratio
Riparian Totals		***0.000***	***0.067***	***0.005***		***0.072***				***0.216***	***0.432***	***0.648***				***0.216***	***0.000***	***0.000***	***0.000***	***0.000***	***0.000***	
CWA Wetland (Federal/State)	Palustrine Emergent Wetland Ditch (PEM) and Palustrine Scrub-shrub Seep Wetland (PSS1)	-	-	0.063	0.063		0.252	0.504	0.756				0.063	-	0.564							Onsite Mitigation 4:1 in-kind wetland creation mitigation = 0.252 acre; Caltrans proposes to restore 0.063-acre onsite which is equivalent to 1:1 or 25% of Project impacts (0.016 of 0.063 acre); 0.047 acre of impacts require additional mitigation to be satisfied offsite at LaBoube Parcel (see below) Offsite Mitigation 12:1 waters of the U.S./State preservation mitigation required for remaining 0.047 acre of Project impacts; Caltrans proposes to mitigate offsite at the LaBoube Parcels via preservation of waters of the U.S./State; 0.047 acre @ 12:1 = 0.564-acre
Non-Wetland Waters (Federal/State)	Intermittent Tributary to Jack Peters Creek (R4SB1)	-	-	0.004	0.004		0.016	0.032	0.048				0.004	-	0.036							Onsite Mitigation 4:1 in-kind waters creation mitigation = 0.016 acre; Caltrans proposes to restore 0.004-acre onsite which is equivalent to 1:1 or 25% of Project impacts (0.001 of 0.004 acre); 0.003 acre of impacts require additional mitigation to be satisfied offsite at LaBoube Parcel (see below) Offsite Mitigation 12:1 waters of the U.S./State preservation mitigation required for remaining 0.003 acre of Project impacts; Caltrans proposes to mitigate offsite at the LaBoube Parcels via preservation of waters of the U.S./State; 0.003 acre @ 12:1 = 0.036-acre
Waters of the U.S./State Totals		***0.000***	***0.000***	***0.067***	***0.067***		***0.268***	***0.536***	***0.804***				***0.067***	***0.000***	***0.600***							
Project 2: Jack Peters Creek Bridge Project Impact Totals		**0.000**	**0.991**	**0.238**	**0.067**	**1.162**	**0.268**	**0.536**	**0.804**	**3.486**	**6.972**	**10.458**	**0.067**	**0.000**	**0.600**	**1.110**	**1.640**	**0.000**	**2.220**	**0.000**	**0.000**	

Summary of Estimated Impacts and Proposed Mitigation Associated with Elk Creek Bridge Replacement (01-0E110)

							Mitigation Required (on and off site) - acres						Mitigation Proposed (on and off site) - acres									
							in-kind CWA/CCA wetland & other waters			in-kind ESHA			in-kind CWA/CCA wetland & other waters			in-kind ESHA			out-of-kind ESHA			
Jurisdictional Feature	**Habitat Type**	**Impacts**			**Total "temporal +permanent" (wetland)**	**Total "temporal +permanent" (ESHA)**	**Creation (4:1)**	**Enhancement (8:1)**	**Preservation (12:1)**	**Creation (3:1)**	**Enhancement (6:1)**	**Preservation (9:1)**	**Creation**	**Enhancement**	**Preservation**	**Creation**	**Enhancement**	**Preservation**	**Creation**	**Enhancement**	**Preservation**	**Notes**
		Temporary	**Temporal**	**Permanent**																		
SNC/ESHA	Shrubland Alliance – Coastal Brambles (*Rubus parviflorus, R. spectabilis, R. ursinus*)	-	0.137	0.057		0.194				0.582	1.164	1.746				0.130	-	Proposed out-of-kind mitigation for Other Sensitive Biological Habitats preservation: 1.356-acres **Total out-of-kind Other Sensitive Biological Habitats Proposed to be Preserved (in combination w/ riparian impacts below): 6.146-acres** 6.146-acres of SNC/ESHA Habitats at LaBoube Parcels include: 1.330 Northern Coastal Scrub 1.100 acres Bishop Pine Forest 0.455 acre Coastal Bluff Scrub 3.261 acres Coastal Terrace Prairie				Onsite Mitigation 3:1 in-kind SNC/ESHA creation mitigation = 0.582 acres; Caltrans proposes to restore 0.130-acre onsite which is equivalent to 0.67:1 or 22% of Project impacts (0.043 of 0.194 acre); 0.151 acre of impacts require additional mitigation to be satisfied at LaBoube Parcel (see below) Offsite Mitigation Caltrans proposes SNC/ESHA mitigation via preservation of non-riparian SNC/ESHA present at the LaBoube Parcels; These SNC/ESHAs include Northern Coastal Scrub, Bishop Pine Forest, Coastal Terrace Prairie, and Coastal Bluff Scrub Caltrans proposes 9:1 SNC/ESHA preservation mitigation ratio for remaining 0.151 acre of Project impacts; 0.151-acre Project impacts @ 9:1 = 1.356 acres
	SNC/ESHA Totals	***0.000***	***0.137***	***0.057***		***0.194***				***0.582***	***1.164***	***1.746***				***0.130***	***0.000***	***1.356***				
Riparian	Red Alder Forest Alliance	-	0.500	0.048		0.548				1.643	3.287	4.930				0.907	-	1.129	-	-	Proposed out-of-kind mitigation for Other Sensitive Biological Habitats preservation: 4.790-acres **Total out-of-kind Other Sensitive Biological Habitats Proposed to be Preserved (in combination w/ non-riparian SNC impacts above): 6.146-acres** 6.146-acres of SNC/ESHA Habitats at LaBoube Parcels include: 1.330 Northern Coastal Scrub 1.100 acres Bishop Pine Forest 0.455 acre Coastal Bluff Scrub 3.261 acres Coastal Terrace Prairie	Onsite Mitigation 3:1 in-kind riparian creation mitigation for 0.907-acre of impacts = 2.721-acres; Caltrans proposes to restore 0.907-acre onsite which is equivalent to 1:1 or 33% of Project impacts (0.302 of 0.907 acre); 0.605-acre of impacts require additional mitigation to be satisfied at LaBoube Parcel (see below) Offsite Mitigation 9:1 riparian preservation mitigation required for remaining 0.605-acre of Project impacts; Caltrans proposes in-kind mitigation at the LaBoube Parcels via preservation of riparian habitats; 0.605-acre @ 9:1 = 5.442-acres; Available riparian acreage for preservation at LaBoube Parcels = 1.129-acres; Approximately 0.479-acre of Project impacts require additional mitigation. In addition to in-kind riparian mitigation, Caltrans proposes out-of-kind mitigation via preservation of other SNC/ESHA present at the LaBoube Parcels; These SNC/ESHAs include Northern Coastal Scrub, Bishop Pine Forest, Coastal Terrace Prairie, and Coastal Bluff Scrub Caltrans proposes 10:1 out-of-kind SNC/ESHA preservation mitigation ratio for remaining 0.479-acre of Project impacts; Out-of-kind mitigation at the LaBoube Parcels via preservation of other SNC/ESHA habitats for 0.479 acre impacts @ 10:1 = 4.790-acres; Available SNC/ESHA acreage for preservation at LaBoube Parcels = 4.790-acres In addition to onsite offsets at 1:1 ratio and preservation of 1.129-acres of riparian and 6.146-acres of SNC/ESHA, Caltrans will remove all invasive plant species rated as "High" according to the Cal-IPC at Saunder's Landing as out-of-kind mitigation for riparian impacts. Seasonally appropriate botanical surveys will be completed in Spring 2023 (prior to Roadways Projects construction in Summer 2023) which will show approximate acreages of invasive treatments.
	Sitka Willow Thicket (*Salix sitchensis*)	-	0.133	0.036		0.169				0.506	1.013	1.519										
	Shrubland Alliance – Coastal Brambles (*Rubus parviflorus, R. spectabilis, R. ursinus*)	-	0.104	0.053		0.157				0.471	0.942	1.413										
	Red Alder Forest Wetland (below OHWM)	-	0.004	-		0.004				0.012	0.024	0.036										
	Sitka Willow Thicket Wetland (below OHWM)	-	0.029	0.001		0.03				0.09	0.18	0.27										
	Riparian Totals	***0.000***	***0.771***	***0.137***		***0.907***				***2.621***	***5.242***	***7.862***				***0.907***	***0.000***	***1.129***	***0.000***	***0.000***	***4.790***	

Summary of Estimated Impacts and Proposed Mitigation Associated with Elk Creek Bridge Replacement (01-0E110)

							Mitigation Required (on and off site) - acres						Mitigation Proposed (on and off site) - acres									
							in-kind CWA/CCA wetland & other waters			in-kind ESHA			in-kind CWA/CCA wetland & other waters			in-kind ESHA			out-of-kind ESHA			
Jurisdictional Feature	**Habitat Type**	**Impacts**			**Total "temporal +permanent" (wetland)**	**Total "temporal +permanent" (ESHA)**	**Creation (4:1)**	**Enhancement (8:1)**	**Preservation (12:1)**	**Creation (3:1)**	**Enhancement (6:1)**	**Preservation (9:1)**	**Creation**	**Enhancement**	**Preservation**	**Creation**	**Enhancement**	**Preservation**	**Creation**	**Enhancement**	**Preservation**	**Notes**
		Temporary	**Temporal**	**Permanent**																		
Wetland (Federal/State)	3-parameter State/Federal Wetland Ditch (*Juncus patens*) Prov. Herbaceous Alliance	-	-	0.002	0.002		0.008	0.016	0.024				0.002		0.018							Onsite Mitigation 4:1 in-kind wetland creation mitigation = 0.008 acre; Caltrans proposes to restore 0.002-acre onsite which is equivalent to 1:1 or 25% of Project impacts (0.0005 of 0.002 acre); 0.0015 acre of impacts require additional mitigation to be satisfied offsite at LaBoube Parcel (see below) Offsite Mitigation 12:1 waters of the U.S./State preservation mitigation required for remaining 0.0015 acre of Project impacts; Caltrans proposes to mitigate offsite at the LaBoube Parcels via preservation of waters of the U.S./State (wetlands); 0.0015 acre @ 12:1 = 0.018 acre
Non-Wetland Waters (Federal/State)	Perennial Stream (Elk Creek); Riverine, Freshwater Tidal Water (R1UBV)	0.190	-	-	0.000		0.000	0.000	0.000				-	-	-							All temporary impacts to be mitigated on-site
Waters of the U.S./State Totals		***0.190***	***0.000***	***0.002***	***0.002***		***0.008***	***0.016***	***0.024***				***0.002***	***0.000***	***0.018***							
Project 3: Elk Creek Bridge Replacement Project Impact Totals		**0.190**	**0.908**	**0.196**	**0.002**	**1.101**	**0.008**	**0.016**	**0.024**	**3.203**	**6.406**	**9.608**	**0.002**	**0.000**	**0.018**	**1.037**	**0.000**	**2.485**	**0.000**	**0.000**	**4.790**	

Appendix F. CDFW Concurrence for On-Site Northern Bishop Pine Mitigation at Jack Peters Creek Bridge

From: Olson, Jennifer@Wildlife <Jennifer.Olson@wildlife.ca.gov>
Sent: Monday, November 8, 2021 2:50 PM
To: Walker, Tracy@DOT <Tracy.Walker@dot.ca.gov>
Subject: RE: Jack Peters Creek - Grand Fir and Bishop Pine on-site replanting

Hi Tracy, I am fine with using Grand Fir in the ROW restoration areas. Let me know if you have additional questions.
Best,
Jen

From: Walker, Tracy@DOT <Tracy.Walker@dot.ca.gov>
Sent: Tuesday, November 2, 2021 3:17 PM
To: Olson, Jennifer@Wildlife <Jennifer.Olson@wildlife.ca.gov>
Subject: Jack Peters Creek - Grand Fir and Bishop Pine on-site replanting

Hi Jen,

Just checking in on this question regarding conifer planting restrictions and options at Jack Peters. If you need more time to review the topic, let me know.

Thanks,
Tracy

From: Walker, Tracy@DOT
Sent: Wednesday, October 20, 2021 4:32 PM
To: Olson, Jennifer@Wildlife <Jennifer.Olson@wildlife.ca.gov>
Cc: Walker, Liza M@DOT <liza.walker@dot.ca.gov>; Frederickson, Stephanie@DOT <Stephanie.Frederickson@dot.ca.gov>; Wagner, Christina@DOT <christina.wagner@dot.ca.gov>
Subject: Jack Peters Creek - Grand Fir and Bishop Pine on-site replanting

Hi Jen,

Another internal limitation for revegetation of bishop pine forest was recently disclosed. Caltrans has a policy that limits us from planting certain tree species in specific counties to limit spread of diseases. Mendocino County is considered a High Risk location for Bishop pine, which means we are not allowed to plant them in our ROW.
https://design.onramp.dot.ca.gov/landscape-architecture-program/policy-memos

I checked with our district landscape architect and she said that grand fir and/or Douglas fir would be allowed. My question for you is do you foresee any issues with planting the restoration areas with grand fir (which is the codominant tree in most of the bishop pine stands on site), or would it be ok to move forward with that approach? I cc'd our revegetation specialist Christy Wagner in the email if you have

any specific questions about the revegetation strategy. Also, Dawn Graydon and Liza Walker shared that this topic had come up, I think, at Gualala Rumbles, and that you were open to the suggestion for planting grand fir in place of bishop pine because the success rate was higher for grand fir.

Please let me know if you have any questions,
Tracy

Tracy Walker
District Biologist
North Region Environmental
1656 Union Street
Eureka, CA 95501
Cell: (707) 815-6503

From: Walker, Tracy@DOT
Sent: Tuesday, September 7, 2021 2:52 PM
To: Olson, Jennifer@Wildlife <Jennifer.Olson@wildlife.ca.gov>
Subject: FW: Jack Peters Creek - Grand Fir and Bishop Pine on-site replanting

Here is the email I was referring to earlier today.

From: Walker, Tracy@DOT
Sent: Monday, August 23, 2021 3:01 PM
To: Olson, Jennifer@Wildlife <Jennifer.Olson@wildlife.ca.gov>
Cc: Walker, Liza M@DOT <liza.walker@dot.ca.gov>; Wagner, Christina@DOT <christina.wagner@dot.ca.gov>; Eldridge, Kellie@DOT <Kellie.Eldridge@dot.ca.gov>; Frederickson, Stephanie@DOT <Stephanie.Frederickson@dot.ca.gov>
Subject: RE: Jack Peters Creek - Grand Fir and Bishop Pine on-site replanting

Hi Jen,

Here are notes (see attached) from last Thursday's meeting to make sure I understood the guidelines/CDFW's position and have a record of our meeting.

Also, I forgot to ask this during our meeting and I'm hoping you can clarify for us. I did have a lingering question about whether or not we count scattered trees within the project footprint but NOT within the SNC. Right now the total includes all GF and BP individual trees removed, whether or not they are within the SNC. Is that necessary or is it reasonable to limit the number of trees impacted to the ones within the SNC? I asked Steph and her take is that if they aren't part of the contiguous stand of the SNC to not include them.

Thanks,
Tracy

Tracy Walker

District Biologist
North Region Environmental
1656 Union Street
Eureka, CA 95501
Cell: (707) 815-6503

Appendix G. Biological Resource Inventory and Invasive Species Summary for Saunder's Landing

HEARN EXTENSION
RESOURCE INFORMATIONAL REPORT

FOR

HEARN GULCH
(APNS 142-010-53, 142-010-54, 142-010-03,
142-010-04, 142-010-05, 142-010-06,
AND PORTIONS OF 142-010-RW)
MENDOCINO, CA
MENDOCINO COUNTY

prepared for:
Redwood Coast Land Conservancy
PO Box 1511
Gualala, CA 95445

prepared by:
Spade Natural Resources Consulting
Teresa R Spade, AICP
611 Albion Street
PO Box 1503
Mendocino, CA 95460
(707) 397-1802
spadenrc@gmail.com

May 31, 2020

Table of Contents

Figures

Background: Site visits occurred on May 15 and May 25, 2020. A total of 14 hours of surveying occurred, which consisted of observing plant and plant community species, and where evident, noting special status wildlife species habitat. The survey included searches for potential wetlands, and for areas where bishop pine forest restoration would be appropriate. Three wetland pits were dug to support this effort, and data was collected following the Army Corps Wetland Delineation protocols. The properties surveyed include the LeBoube properties (APNs 142-010-53 [LaBoube 8.2a], and 142-010-54 [LaBoube 3.8a]), the RCLC property directly to the south (142-010-03 [RCLC 0.462a], 142-010-04 [RCLC 1.63], 142-010-05 [RCLC 1.8a], and 142-010-06 [RCLC 1.065a]), and portions of the state Right of Way in the vicinity of these properties.

Investigator: Teresa R Spade, AICP (B.S. Natural Resources Planning and Interpretation, Humboldt State)

Project Area: The ~21 acre project area is located within the California Coastal Zone, at Hearn Gulch, on the east and west sides of Highway One. The property is just north of the Iversen Subdivision and approximately 6 miles south of the City of Point Arena. Areas on the west side of the highway include relatively flat coastal terrace prairie, sloping steeply downward towards Hearn Gulch in the center of the project area. On the east side the project area is a sloping hillside that is a mix of non-native grassland, tanoak forest, bishop pine forest, and riparian area in the gulch.

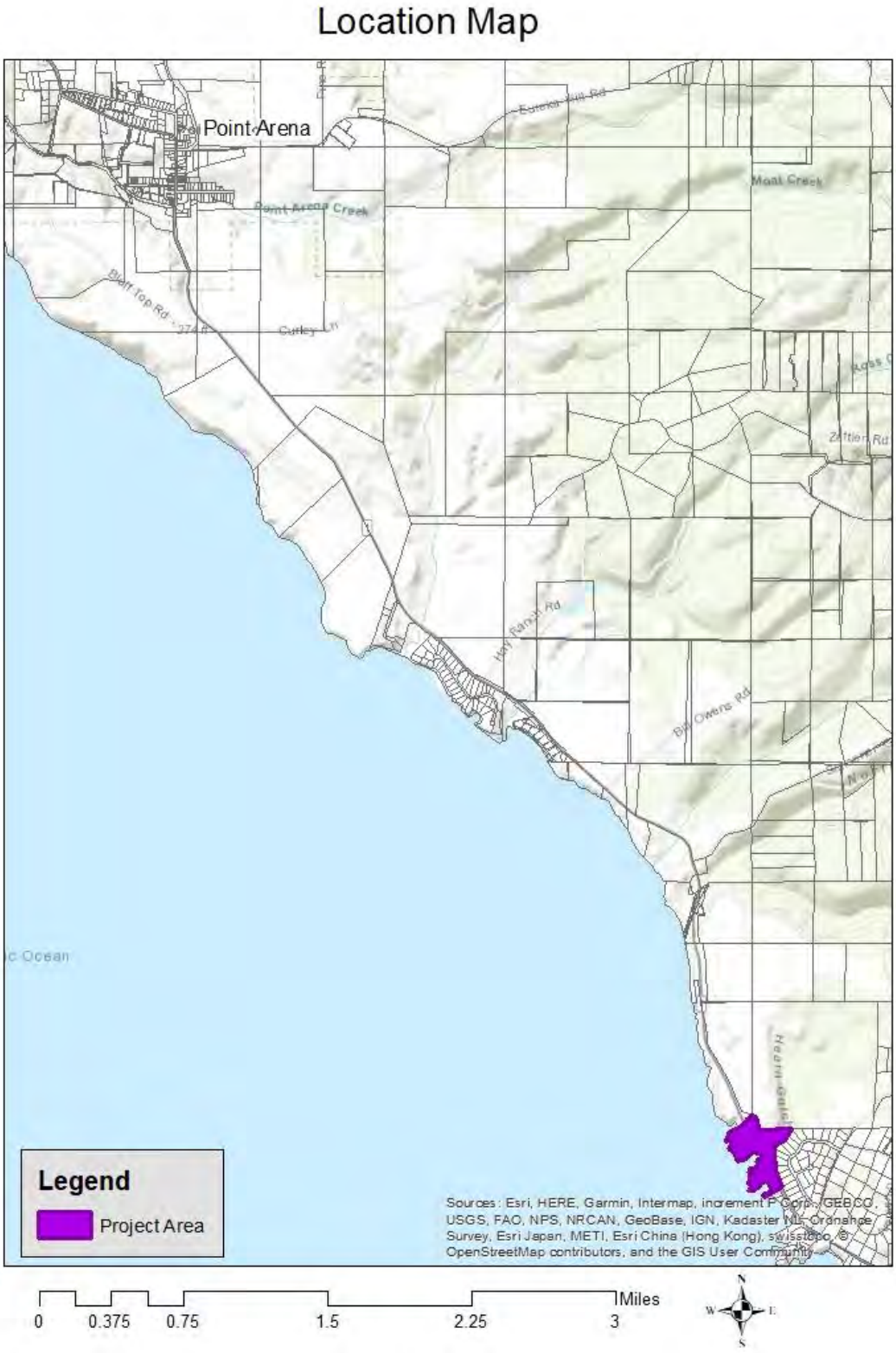


Figure 1. Project location map.

1. Habitat Present

Overall, the habitat quality is high for these properties. The project area is abundant in special status plants and rare vegetation alliances. Evidence of special status wildlife was also noted. This summary will focus on observations on the LeBoube east and west parcels as information should already be available on habitat present for the RCLC property.

1.1. Vegetation Alliances

West: The west side of the LeBoube property is a coastal terrace that is relatively flat. The property slopes steeply downward to the ocean and to Hearn Gulch. Vegetation alliances present are described as follows:

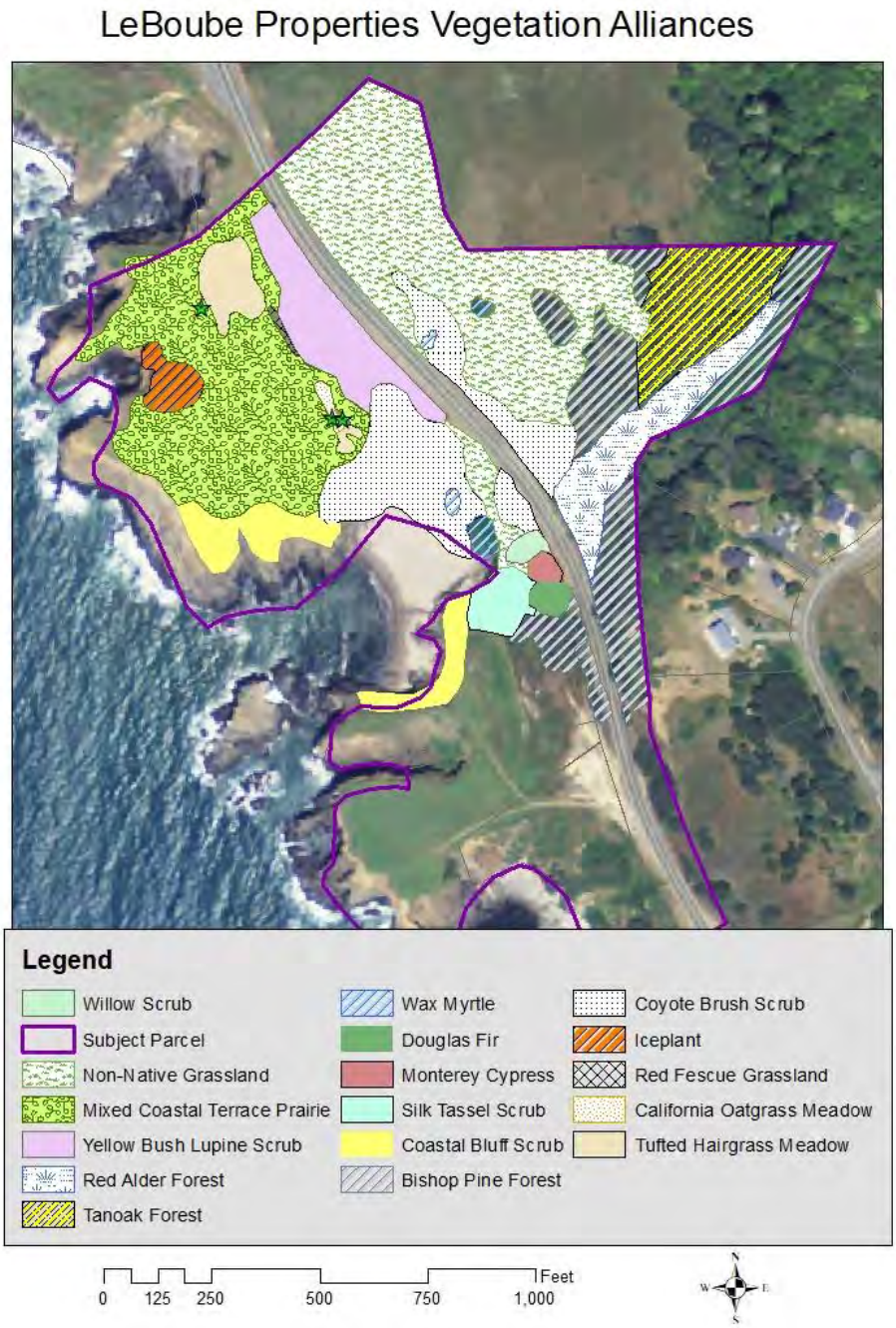


Figure 2. Vegetation alliances map.

Mixed Coastal Terrace Prairie – The areas mapped as mixed coastal terrace prairie contain a significant native plant cover, approximately 80% native cover. Native species present include maritime brome (*Bromus maritimus*), rigid hedge nettle (*Stachys rigida*), yarrow (*Achillea millefolium*), Henderson's angelica (*Angelica hendersonii*), beach strawberry (*Fragaria chiloensis*), gumweed (*Grindelia stricta*), California blackberry (*Rubus ursinus*). There are patches of areas dominated by non-native rattlesnake grass, and other non-natives present such as narrow leaved plantain (*Plantago lanceolata*), Canada bluegrass (*Poa compressa),* and yellow vetch (*Vicia lutea*).

Figure 3. Mixed coastal prairie with Mendocino coast paintbrush.

Yellow Bush Lupine Scrub – this area is closer to the highway and contains clusters of yellow bush lupine (*Lupinus arboreus*), with ripgut brome (*Bromus hordaceous*), field mustard (*Brassica rapa*), rattlesnake grass, California blackberry, slender oat (*Avena barbata*), coyote brush (*Baccharis pilularis*), burclover (*Medicago polymorpha*), and bristly ox tongue (*Helminthotheca echioides*).

Figure 4. Yellow bush lupine scrub.

Tufted Hairgrass Meadow – This area is dominated by tufted hairgrass (*Deschampsia cespitosa*), and also present are beach strawberry, gumweed, purple stemmed checkerbloom (*Sidalcea malviflora purpurea*), blue-eyed grass (*Sisyrinchium bellum*), hairy cat's ear (*Hypochaeris radicata*), and self-heal (*Prunus vulgaris*).

Figure 5. Tufted hairgrass meadow.

California Oatgrass Meadow – This area was noted as having a dominance of California oatgrass (*Danthonia californica*). Other species present are similar to those found in the adjacent tufted hairgrass meadow.

Figure 6. California oatgrass meadow.

Red Fescue Grassland – This area was noted as having a dominance of red fescue (*Festuca rubra*). Other species present are similar to those found in the adjacent mixed coastal terrace prairie.

Figure 7. Red fescue grassland.

Iceplant – this patch is dominated by iceplant (*Carpobrotus chilensis*). Also present are seaside daisy (*Erigeron glaucus*), lizard tail (*Eriophyllum staechadifolium*), and maritime brome.

Figure 8. Iceplant.

Coyote Brush Scrub – Coyote brush dominates, with poison oak (*Toxicodendron diversilobum*), yellow bush lupine, field mustard, rigid hedge nettle, California beeplant (*Scrophularia californica*), wild cucumber (*Marah oreganus*), maple-leaved checkerbloom (*Sidalcea malachroides*), Italian thistle (*Carduus pycnocephalus*), milk thistle (*Silybum marianum*), and cow parsnip (*Heracleum maximum*).

Figure 9. Coyote brush scrub.

Coastal Bluff Scrub – species present include coast buckwheat (*Eriogonum latifolium*), gumweed, California phacelia (*Phacelia californica*), north coast dudleya (*Dudleya farinosa*), lizardtail, iceplant, and wild carrot (*Daucus carota*).

Figure 10. Coastal bluff scrub.

East: The east side of the LeBoube property is a gentle sloping hillside that is covered by non-native grassland and coyote brush scrub, with bishop pine and tanoak forest. The gulch on the east side is a lush riparian area. Vegetation alliances present are described as follows:

Red Alder Forest – The gulch contains red alder (*Alnus rubra*), willow (*Salix* sp.), coffeeberry (*Frangula californica*), sword fern (*Polystichum munitum*), lady fern (*Athyrium filix-femina var. cyclosorum*), red elderberry (*Sambucus racemosa*), wild ginger (*Asarum caudatum*), thimbleberry (*Rubus parviflorus*), wild cucumber, California blackberry, cow parsnip, giant horsetail (*Equisetum telmateia*), bee plant (*Scrophularia californica*), and honeysuckle (*Lonicera hispidula*).

Figure 11. Red alder forest.

Non-Native Grassland – rattlesnake grass and sweet vernal grass were dominant in the grassland on the east side of the highway. Also significantly present were purple velvet grass (*Holcus lanatus*), spring vetch (*Vicia sativa*), sow thistle, Douglas iris (*Iris douglasiana),* blue eyed grass, California poppy (*Eschscholzia californica*), sheep sorrel (*Rumex acetosella*), tufted hairgrass, and coyote brush.

Figure 12. Non-native grassland.

Tanoak Forest – Leaf litter was present under the oaks, inhibiting vegetative growth. Species present include tanoak, honeysuckle, bracken, redwood sorrel (*Oxalis oregana*), black huckleberry (*Vaccinium ovatum*), manzanita (*Arctostaphylos* sp.), and madrone (*Arbutus menziesii*).

Figure 13. Tanoak forest.

Bishop Pine Forest – These areas are dominated by bishop pine (*Pinus muricata*). The understory generally has a moderate layer of pine needles which inhibits vegetative growth. Species observed in and around bishop pines include California blackberry, bedstraw (*Galium* sp.), poison oak, bracken (*Pteridium aquilinum*), honeysuckle, and rush (*Juncus effusus* and *Juncus patens*).

Figure 14. Bishop pine forest.

1.2. Special Status Plants

Special status plants observed on the LeBoube property include:

Mendocino Coast Paintbrush (*Castilleja mendocinensis*).

Figure 15. Mendocino coast paintbrush.

Purple stemmed checkerbloom (*Sidalcea malviflora* ssp. *purpurea*).

Figure 16. Purple stemmed checkerbloom.

1.3. Special Status Wildlife

Shoulderband Snails – Shoulderband snails are present in the vicinity of the iceplant and the adjacent areas that are dominated by seaside daisy.

Cormorant Nests – Cormorant nests were observed on the offshore rock, off of the beach, and on the RCLC property rocky bluff area where it faces these offshore rocks.

Sonoma Tree Vole – Evidence of Sonoma tree vole was observed under the bishop pine trees on the east side of the highway on the LeBoube property, just east of the bridge.

1.4. Wetlands

Wetlands include both presumed coastal act (one parameter) wetlands and Army Corps (three parameter wetlands), and are present in the coastal terrace as grasslands, and also include Hearn Gulch and its riparian area. Three wetland pits were dug and wetland data was recorded on Army Corps data sheets (Western Mountains, Valleys, and Coast Region). The data collected was limited to these three data collection locations, and additional wetlands may be present in the project area. Where wetland data pits were not dug, wetlands were presumed based on presence of hydrology or dominance of hydrophytic plant species. The wetland data sheets are included as Appendix A.

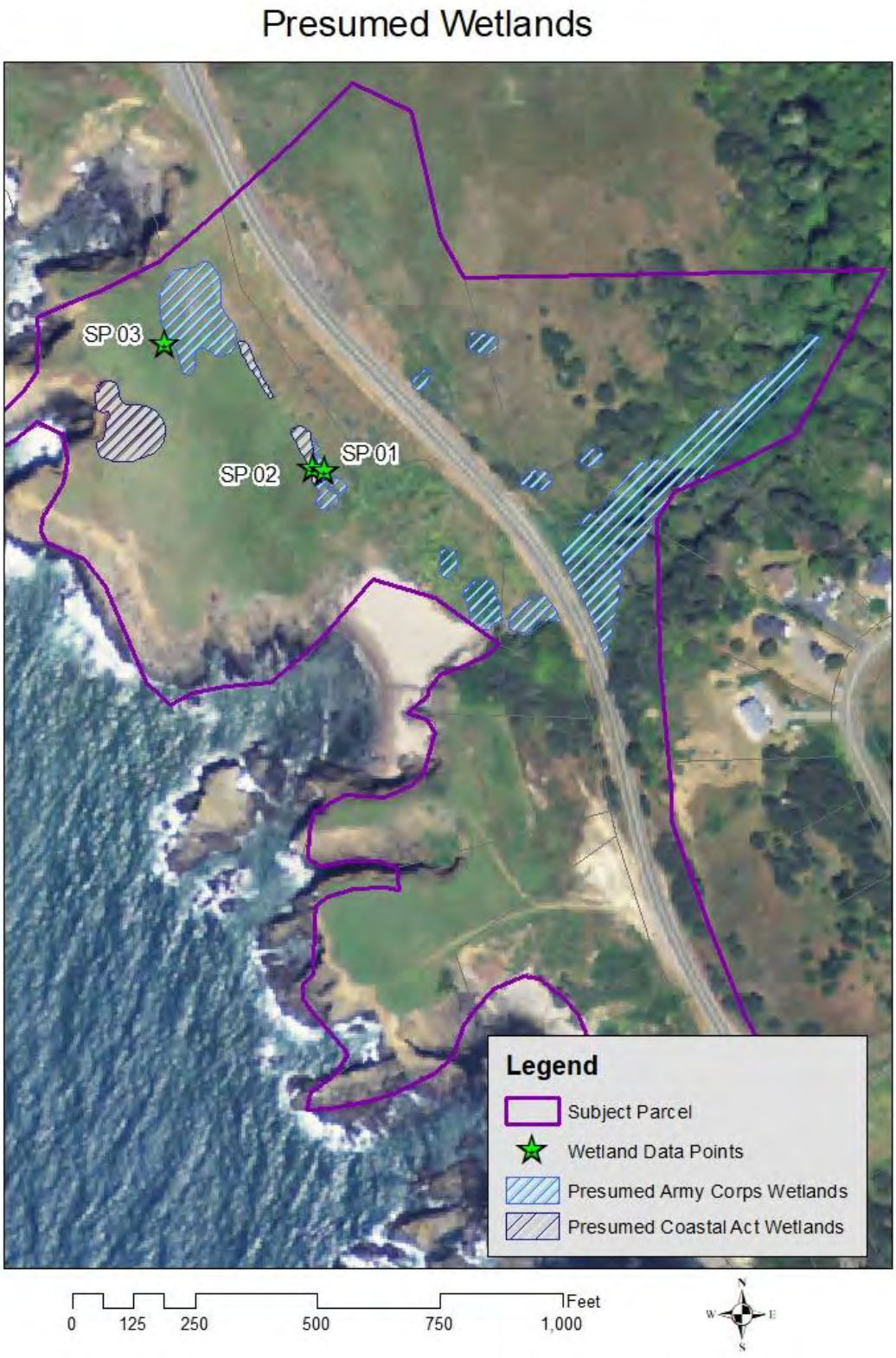


Figure 17. Presumed wetlands.

One parameter and presumed one parameter wetlands include areas where any one of the wetland parameters was found. Those parameters are hydrology, hydric soil, and hydrophytic vegetation. Presumed one parameter wetlands include areas where the following species are dominant:

- Iceplant (FAC)
- Red Fescue (FAC)
- California oatgrass (FAC)

Three parameter and presumed three parameter wetlands include areas where the following are present:

- Hearn Gulch (Stream)
- Tufted Hairgrass Meadows (FACW)
- Wax Myrtle (FACW)

2. Restoration Potential

2.1. Wetlands

The wetlands observed are generally considered high quality wetlands with the exception being the area of iceplant. The iceplant area is approximately 15,000 square feet in size. Iceplant is a facultative species, meaning that it is equally likely in and out of wetlands, so it is not a great wetland indicator, even though this area meets the definition of a coastal act wetland based on the dominance of a facultative wetland plant species. While it would be easy to remove the iceplant and attempt to restore the area, the hydrology may not be there to support more than a facultative species, and the area may not be large enough to justify pursuing wetland credit for restoration. It would be a good area for RCLC to experiment with iceplant removal and seeding with either red fescue or California oatgrass, if one parameter wetland creation is desired. Seaside daisy would also likely do well there.

2.2. Bishop Pine Forest

Three areas that would be appropriate for bishop pine forest restoration include those near existing bishop pine that are currently covered by non-native grassland. Approximately six acres of bishop pine restoration area are found on the easterly LaBoube property, ½ acre on the westerly LaBoube property, and about 1/3 acre on the RCLC property.

Rare plant surveys would need to occur prior to restoration efforts, and rare plants would need to be avoided. Ideally, if large enough areas are identified for this, a controlled burn, overseen by the local fire department, would best prepare the grassland for bishop pine restoration. Otherwise, vegetation would need to be removed to bare soil prior to seeding.

On the RCLC property the restoration area contains fill soil areas and asphalt. The asphalt would need to be removed, and areas where fill soil are may be served by a layer of ash or seed free topsoil prior to seeding.

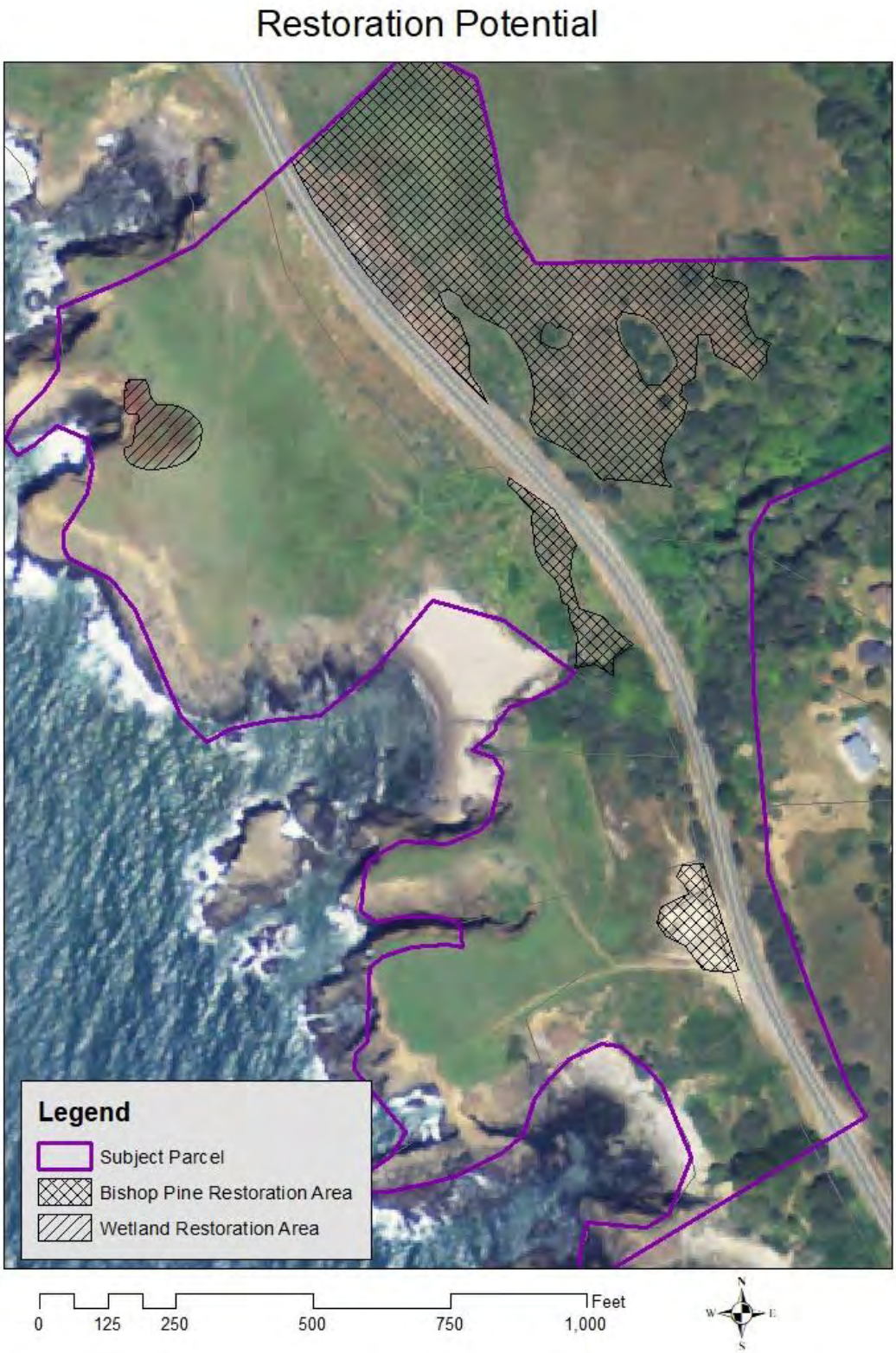


Figure 18. Potential restoration areas.

.

APPENDIX A
Wetland Data Sheets

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Hern Gulch City/County: Mendocino Sampling Date: 25MAY2020
Applicant/Owner: LaBoube State: CA Sampling Point: SP01
Investigator(s): Spade Section, Township, Range:
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): slight concave Slope (%): 11°
Subregion (LRR): A Lat: Long: Datum: NAD83
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No
Hydric Soil Present? Yes X No
Wetland Hydrology Present? Yes X No
Is the Sampled Area within a Wetland? Yes X No (Army Corps 3 Parameter)

Remarks: Within location dominated by native grasses and with some wetland indicator species such as coyote thistle and blue eyed grass

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30'r)			
1. None			
2.			
3.			
4.			
	—	= Total Cover	
Sapling/Shrub Stratum (Plot size: 20'r)			
1. None			
2.			
3.			
4.			
5.			
	—	= Total Cover	
Herb Stratum (Plot size: 10'r)			
1. Deschampsia cespitosa	30	Y	FACW
2. Dantronia californica	5	N	FAC
3. Sysirinchium bellum	1		FACW
4. Eryngium aramatum	5		FACW
5. Plantago lanceolata	3		FACU
6. Carex rossii	3		NI
7. Briza maxima	1		NI
8. Prunella vulgaris	3		FACU
9. Hypocaeris radicata	6		FACU
10. Lotus corniculata	1		FAC
11. Lysimachia arvensis	+	V	FAC
	58	= Total Cover	
	29/11.6		
Woody Vine Stratum (Plot size: 10'r)			
1. None			
2.			
	—	= Total Cover	

% Bare Ground in Herb Stratum 40%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ 5 - Wetland Non-Vascular Plants[1]
__ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No

Remarks: Only dominant sp. in this location is Deschampsia cespitosa = 1/Meets dominance test

SOIL Hern Gulch Sampling Point: SP01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR2.5/1	100	—	—	—	—	Loam	sand grains visible
4-8	7.5YR2.5/1	100	—	—	—	—	loam clay	higher clay content Sand visible
8-12+	7.5YR3/1	85	10YR2/1	5	—	M	Clay	
—	—	—	7.5YR4/6	10	C	M	—	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Clay

Depth (inches): 4

Hydric Soil Present? Yes X No ___

Remarks: Meets F6 Redox dark surface

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Relatively dry today. because clay soil starts at 4" deep and the area has a slight slope this area is likely wetter after rain but does not have much capacity to retain water. Surface soil cracks within nearby bare soil are present => meets (B6). High clay content may shrink + swell

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Hern Gulch City/County: Mendocino Sampling Date: 25 MAY 2020
Applicant/Owner: La Bonbe State: CA Sampling Point: SP02
Investigator(s): Spade Section, Township, Range:
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): None Slope (%): 10°
Subregion (LRR): A Lat: N 30°51.162 Long: W123°38.956 Datum: NAD83
Soil Map Unit Name: NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	Is the Sampled Area within a Wetland? Yes X No ____
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	

Coastal act one parameter wetland

Remarks: 212 feet west of SP01 + composition of grassland abruptly changes between the two locations

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30'r)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 20'r)			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10'r)			
1. Danthonia californica	60	Y	FAC
2. Plantago lanceolata	10	N	FACU
3. Grindelia stricta	10		FACW
4. Sysinirchium bellum	+		FACW
5. Hypochaeris radicata	2		FACU
6. Fragaria chiloensis	4		FACU
7. Prunella vulgaris	1		FACU
8. Stachys rigida	+		FACW
9. Briza maxima	+		NI
10. Festuca bromoides (Vulpia brom.)	3		FAC
11. Festuca perennis	+		NI
	92 = Total Cover		
	46/184		
Woody Vine Stratum (Plot size: 10'r)			
1. None			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 10%

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: Meets Dominance test due to prevalance of Danthonia californica, a FAC plant
Not a strong indicator as FAC plants occur ~ equally in wetlands + uplands
Danthonia californica is considered a FACU plant in adjacent subregions

SOIL Hern Gulch Sampling Point: SP02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-17	7.5YR2.5/2	100	—	—	—	—	loam	sand grains visible
17-19+	7.5YR2.5/1	100	—	—	—	—	loamy clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: clay

Depth (inches): 17

Hydric Soil Present? Yes ___ No X

Remarks: Clay content increases ~17 inches but no hydric soil indicators were observed

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators observed

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Horn Gulch City/County: Mendocino Sampling Date: 25 MAY 2020

Applicant/Owner: La Bouhe State: CA Sampling Point: SP03

Investigator(s): SPADE Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No _____	**Is the Sampled Area within a Wetland?** Yes _____ No _____
Hydric Soil Present?	Yes _____ No _____	
Wetland Hydrology Present?	Yes _____ No _____	

Remarks: Location chosen ~ 10ft outside and downhill of a Deschampsia cespitosa patch with shrink swell cracks in soil that is assumed to be wetland simular to that described by SP01

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30'r)			
1. None			
2.			
3.			
4.			
= Total Cover			
Sapling/Shrub Stratum (Plot size: 20'r)			
1. None			
2.			
3.			
4.			
5.			
= Total Cover			
Herb Stratum (Plot size: 10'r)			
1. Poa compressa	15	Y	FACU
2. Plantago lanceolata	20	Y	FACU
3. Grindelia stricta	15	Y	FACW
4. Achellia millefolium	2	N	FACU
5. Festuca bromoides (Vulpia)	10		FAC
6. Fragaria chiloensis	7		FACU
7. Hordeum brachyantherum	1		FACW
8. Rumex acetosella	+		FACU
9. Bromus hordaceous	7		FACW
10. Bromus Mantimus	2		NI
11. Deschampsia cespitosa	1		FACW
80 = Total Cover 40/16			
Woody Vine Stratum (Plot size: 10'r)			
1. None			
2.			
= Total Cover			

% Bare Ground in Herb Stratum 20

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

SOIL Hern Gulch Sampling Point: SP03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-21+	7.5YR2.5/1	100	—	—	—	—	loam	sand grains visible

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): None present to 21" dep

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

No hydric soil indicators observed

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland hydrology indicators observed.

Teresa R Spade, AICP
Spade Natural Resources Consulting
PO Box 1503
Mendocino, CA 95460
phone: 707-397-1802
spadenrc@gmail.com

To: Kathleen Chasey

Date: July 1, 2020

Dear Kathleen:

I visited the LaBoube property located at APN 142-010-53 on June 22, 2020 to collect data on invasive plants present on the property. My analysis includes plants listed as Limited, Moderate or High, according to the California Invasive Plant Council (Cal-IPC), as well as a few species that are non-native but not listed by Cal-IPC.

The data is summarized as follows, corresponding with the map also provided:

The total area surveyed that was substantially covered by invasive and/or non-native plants was 85,140 square feet in size. Of that area, 60,000 square feet is within the boundaries of the LaBoube property, and 25,064 sf is within the adjacent right of way. About 57, 140 square feet of that area is considered accessible, while around 28,000 sf may be too steep to access. Invasives present were generally identifiable during the time of survey, however some of the species present were not identifiable to specific epithet.

Polygons were created of areas with consistent coverage, and an estimation of coverage of each of the more invasive species was made. The results are as follows:

A 450 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
wild radish	*Raphinus sativus*	Limited	10	45	
bull thistle	*Cirsium vulgare*	Moderate	2	9	
rattlesnake grass	*Briza maxima*	Limited	5	22.5	
wild oat	*Avena barbata*	Moderate	2	9	
sow thistle	*Sonchus asper*	Non Native	2	9	

B 500 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
Italian thistle	*Carduus pycnocephalus*	Moderate	1	5	
bird's foot trefoil	*Lotus corniculatus*	Non-Native	1	5	

C 1000 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
star thistle	*Centaurea* sp.	Mod to High	1	10	
wild radish	*Raphinus sativus*	Limited	1	10	
Italian thistle	*Carduus pycnocephalus*	Moderate	3	30	
field mustard	*Brassica* sp.	Limited to Mod	5	50	

D 1000 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
bull thistle	*Cirsium vulgare*	Moderate	15	150	
field mustard	*Brassica sp.*	Limited to Mod	20	200	

E 3500					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
ripgut brome	*Bromus diandrus*	Moderate	3	105	
Italian thistle	*Carduus pycnocephalus*	Moderate	4	140	
sow thistle	*Sonchus asper*	Non Native	2	70	
rattlesnake grass	*Briza maxima*	Limited	40	1400	
bird's foot trefoil	*Lotus corniculatus*	Non-Native	2	70	

F 1200 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
rattlesnake grass	*Briza maxima*	Limited	40	480	
wild oat	*Avena barbata*	Moderate	2	24	
sow thistle	*Sonchus asper*	Non Native	1	12	
Italian thistle	*Carduus pycnocephalus*	Moderate	2	24	
bird's foot trefoil	*Lotus corniculatus*	Non-Native	4	48	
wild radish	*Raphinus sativus*	Limited	30	360	

G 1850 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
rattlesnake grass	*Briza maxima*	Limited	25	462.5	
bird's foot trefoil	*Lotus corniculatus*	Non-Native	5	92.5	
sow thistle	*Sonchus asper*	Non Native	4	74	
Italian thistle	*Carduus pycnocephalus*	Moderate	2	37	

H 350 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
ripgut brome	*Bromus diandrus*	Moderate	4	14	
field mustard	*Brassica sp.*	Limited to Mod	3	10.5	
sow thistle	*Sonchus asper*	Non Native	1	3.5	
wild oat	*Avena barbata*	Moderate	1	3.5	
rattlesnake grass	*Briza maxima*	Limited	7	24.5	
bird's foot trefoil	*Lotus corniculatus*	Non-Native	3	10.5	
Italian thistle	*Carduus pycnocephalus*	Moderate	3	10.5	

I 475 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
bird's foot trefoil	*Lotus corniculatus*	Non-Native	9	42.75	
rattlesnake grass	*Briza maxima*	Limited	1	4.75	
bull thistle	*Cirsium vulgare*	Moderate	1	4.75	
sow thistle	*Sonchus asper*	Non Native	1	4.75	

J 6,500 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
bird's foot trefoil	*Lotus corniculatus*	Non-Native	50	3,250	

K 8,500 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
sow thistle	*Sonchus asper*	Non Native	5	425	

L 2,000 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
field mustard	*Brassica* sp.	Limited to Mod	3	60	
Italian thistle	*Carduus pycnocephalus*	Moderate	7	140	

M 1,000 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
Italian thistle	*Carduus pycnocephalus*	Moderate	35	350	
sow thistle	*Sonchus asper*	Non Native	4	40	
field mustard	*Brassica* sp.	Limited to Mod	2	20	

N 5,750 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
Italian thistle	*Carduus pycnocephalus*	Moderate	5	287.5	
field mustard	*Brassica* sp.	Limited to Mod	40	2300	
bull thistle	*Cirsium vulgare*	Moderate	2	115	

O 28,000 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
field mustard	*Brassica* sp.	Limited to Mod	30	8,400	

P 4,000 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
field mustard	*Brassica* sp.	Limited to Mod	25	1,000	
Italian thistle	*Carduus pycnocephalus*	Moderate	5	200	
bull thistle	*Cirsium vulgare*	Moderate	2	80	
poison hemlock	*Conium maculatum*	Moderate	3	120	

Q 3,750 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
Italian thistle	*Carduus pycnocephalus*	Moderate	7	262.5	
purple velvet grass	Holcus lanatus	Moderate	1	37.5	
field mustard	*Brassica* sp.	Limited to Mod	3	112.5	

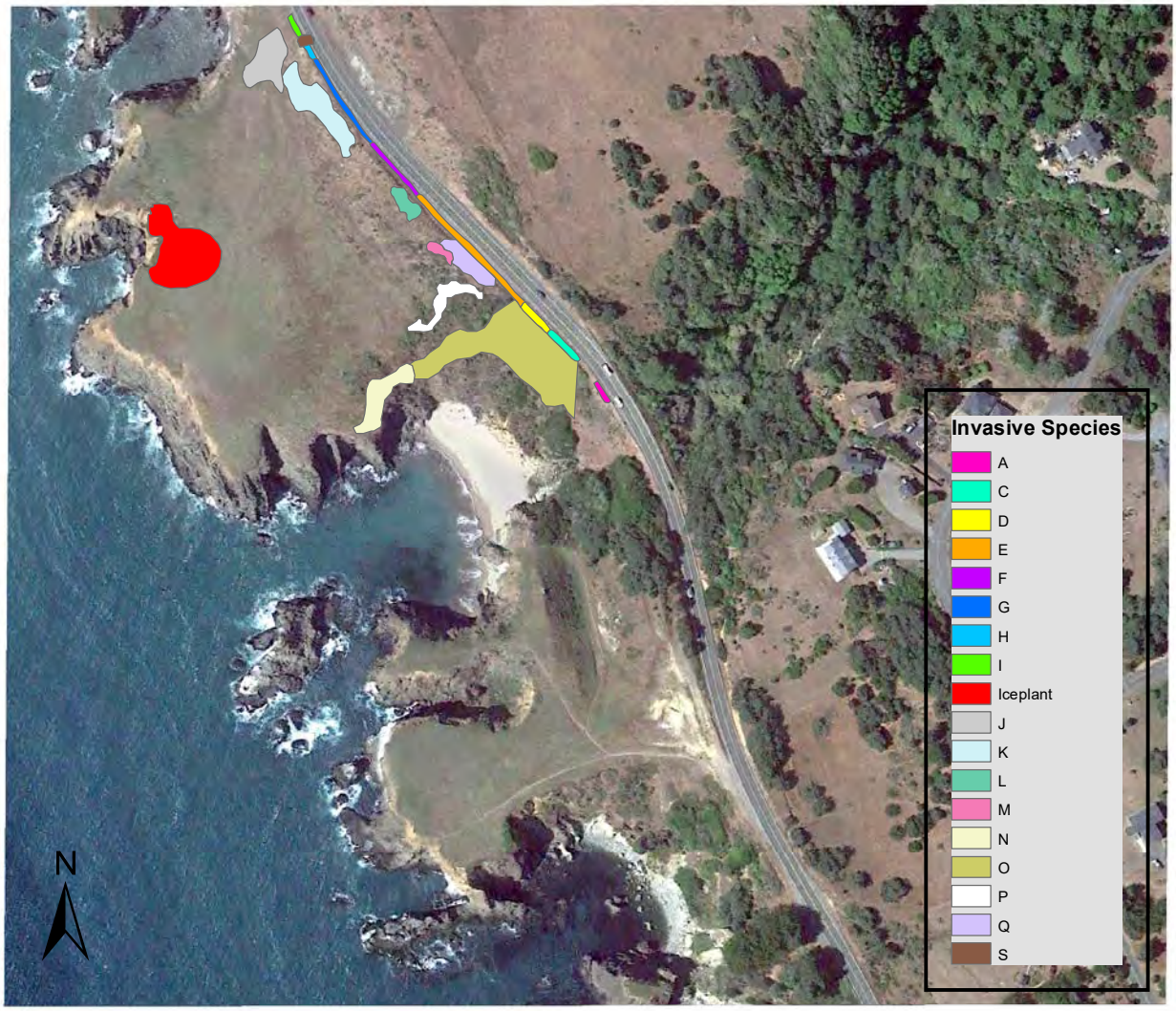
R 15,225 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
iceplant	*Carpobrotus chilensis*	Moderate	60	9,135	

S 90 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
Monterey cypress	*Hesperocyparis macrocarpa*	Non native	100	90	

Sincerely,

Teresa R Spade, AICP
Spade Natural Resources Consulting

LaBoube Parcels Invasive Species



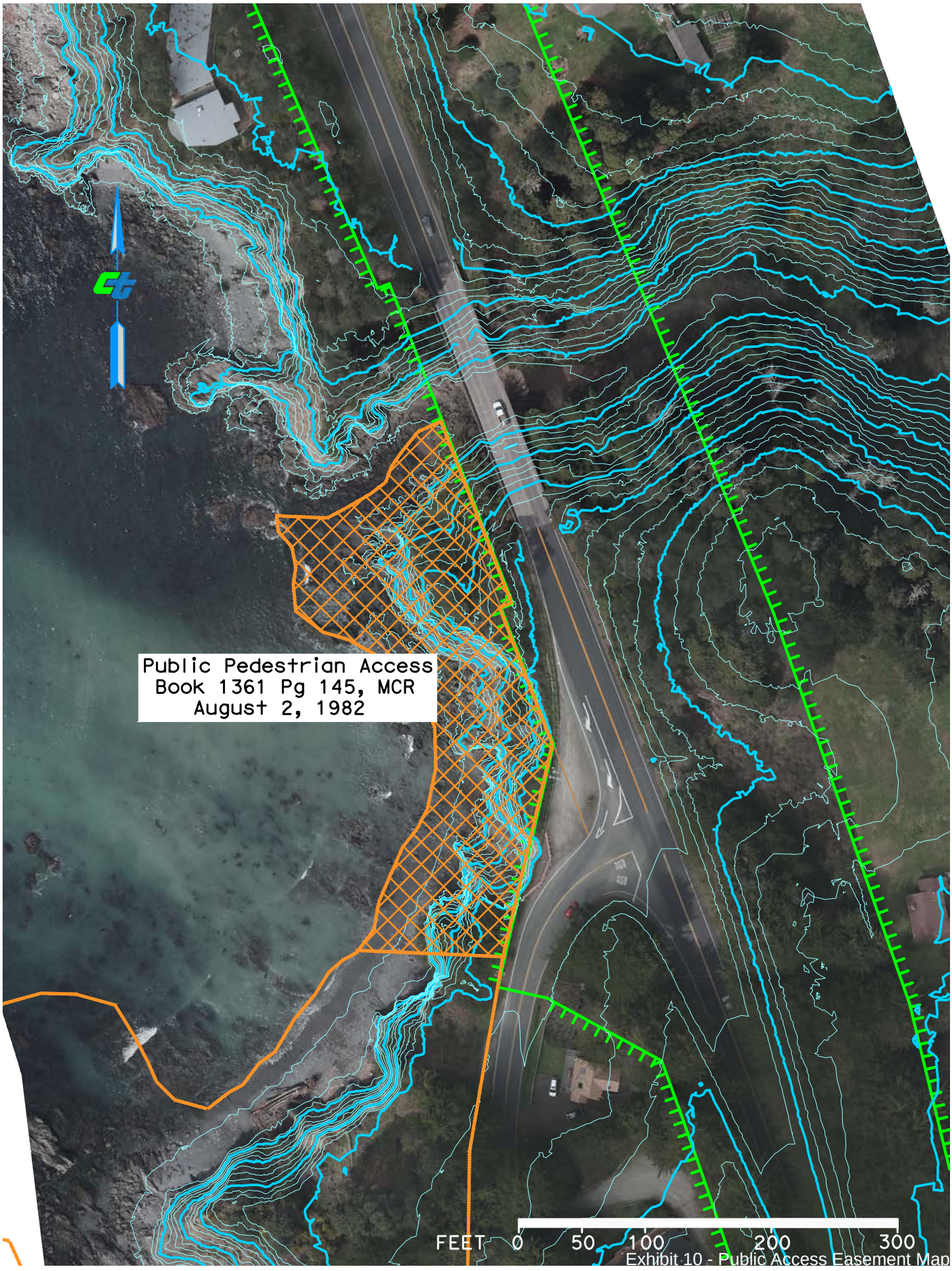


Exhibit 10 - Public Access Easement Map

\\sv01caddvnx1\SURV1\01\43484\RWE\PROJ_FLDR\SUPPORTING_INFORMATION\Public Ped Access\Exhibit\43484_Public_Access_Deed_recover.dwg, 8/2/2022 11:11:06 AM