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# **W14b**

**1-22-0446 (Caltrans)**

**August 10, 2022**

### **EXHIBITS**

**Exhibit 1 – Project Area Vicinity Map**

**Exhibit 2 – Project Location Map**

**Exhibit 3 – Existing and Proposed Conditions Visuals**

**Exhibit 4 – Project Description**

**Exhibit 5 – Proposed BMPs and AMMs**

**Exhibit 6 – Project Layout**

**Exhibit 7 – Habitat Map**

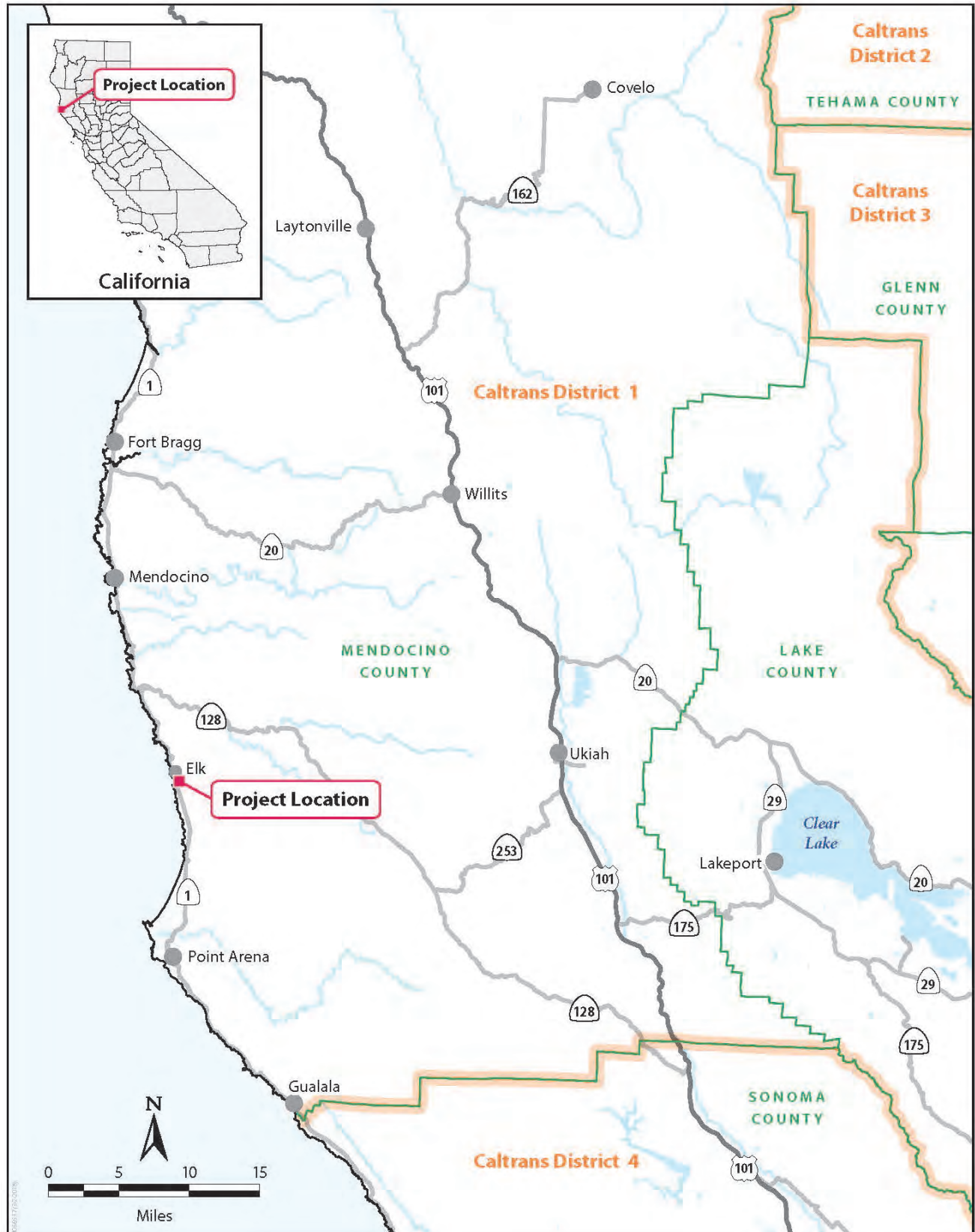
**Exhibit 8 – Root Wad Revetment Plans**

**Exhibit 9 – Onsite Revegetation Plan**

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**Exhibit 11 – Funding Assurance and Mutual Interest Letters for Mitigation Property Acquisition**

## Elk Creek Bridge Replacement Project - Vicinity Map





**Exhibit 02 – Project Location Map**  
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Elk Creek Bridge Replacement Project  
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## Elk Creek Bridge - View 1 looking South (existing bridge)

County of Mendocino

Prepared by DES / Structure Design Services - Bridge Architecture and Aesthetics S. Heath 3-15-2022

### Exhibit 03 – Existing and Proposed Conditions Visuals

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## Elk Creek Bridge - View 1 looking South (Proposed bridge)

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## Elk Creek Bridge - View 1 looking South (Temporary/Proposed bridge)

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## Elk Creek Bridge - View 2 looking South (existing bridge)

County of Mendocino

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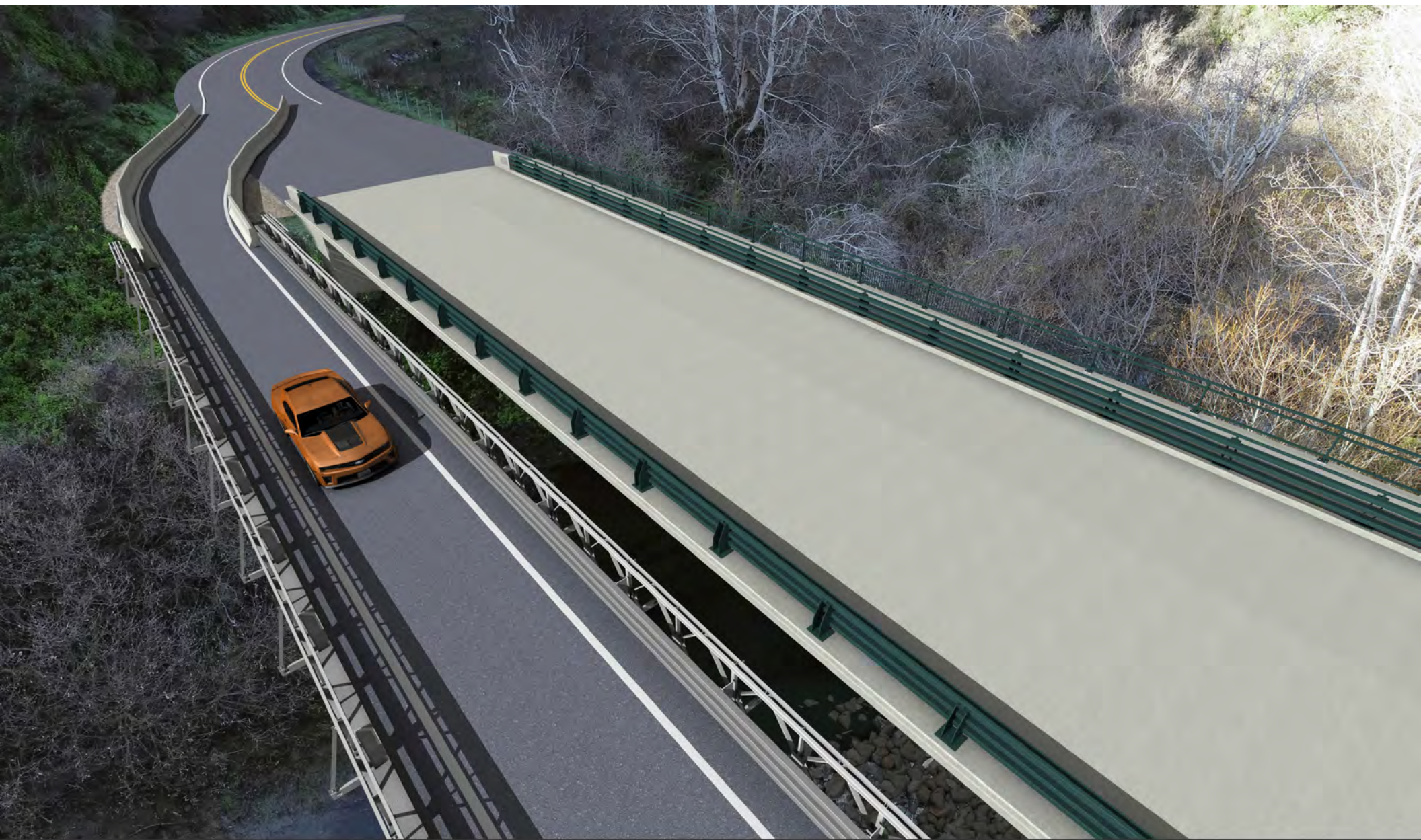
## Elk Creek Bridge - View 2 looking South (Proposed bridge)

County of Mendocino

Prepared by DES / Structure Design Services - Bridge Architecture and Aesthetics S. Heath 3-15-2022

NOTE: Since the proposed conditions visuals of Exhibit 3 were developed, the project description has been updated so that all unvegetated rock slope protection shown on the northern creek bank is now proposed to be removed and the proposed root wad revetment will be naturally vegetated.





## Elk Creek Bridge - View 2 looking South (Temporary/Proposed bridge)

County of Mendocino

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## Elk Creek Bridge - View 3 looking West (existing bridge)

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## Elk Creek Bridge - View 3 looking West (Proposed bridge)

County of Mendocino

Prepared by DES / Structure Design Services - Bridge Architecture and Aesthetics S. Heath 3-15-2022

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## Elk Creek Bridge - View 3 looking West (Temporary/Proposed bridge)

County of Mendocino

Prepared by DES / Structure Design Services - Bridge Architecture and Aesthetics S. Heath 3-15-2022

NOTE: Since the proposed conditions visuals of Exhibit 3 were developed, the project description has been updated so that all unvegetated rock slope protection shown on the northern creek bank is now proposed to be removed and the proposed root wad revetment will be naturally vegetated.





## Elk Creek Bridge - View 3 looking West (Temporary/Proposed bridge)

County of Mendocino

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## Elk Creek Bridge - View 4 looking North (existing bridge)

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## Elk Creek Bridge - View 4 looking North (Proposed bridge)

County of Mendocino

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NOTE: Since the proposed conditions visuals of Exhibit 3 were developed, the project description has been updated so that all unvegetated rock slope protection shown on the northern creek bank is now proposed to be removed and the proposed root wad revetment will be naturally vegetated.





## Elk Creek Bridge - View 4 looking North (Temporary/Proposed bridge)

County of Mendocino

Prepared by DES / Structure Design Services - Bridge Architecture and Aesthetics S. Heath 3-15-2022

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Exhibit 03 - Existing and Proposed Conditions Visuals  
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## Elk Creek Bridge - View 4 looking North (Temporary/Proposed bridge)

County of Mendocino

Prepared by DES / Structure Design Services - Bridge Architecture and Aesthetics S. Heath 3-15-2022



# Project Description for the Elk Creek Bridge Replacement Project

Mendocino County, California  
District 1- MEN-1 (PM 31.4)  
01-0E110 / 01-1300-0125



Prepared by the  
State of California, Department of Transportation





## **1.2. Project Description**

### **1.2.1. Purpose**

The purpose of the project is to improve the function and geometrics of the Elk Creek Bridge and approach roadway to ensure uninterrupted traffic movement in the event of a collision or emergency incident, seismic event, or other catastrophic failure and provide safe access for pedestrians and bicyclists across the bridge. The design of the proposed project would improve traffic flow with upgrades to the bridge approach by widening the shoulders and decreasing the curve radius, thus improving safety and reducing the potential for accidents and collisions on the bridge.

### **1.2.2. Need**

#### ***Roadway Deficiencies***

The bridge and approach roadway have geometric and structural deficiencies that could result in reduced safety to all users from interrupted traffic in the event of a collision, seismic event, or other catastrophic failure. These deficiencies include narrow shoulder widths that do not provide sufficient area for disabled vehicles or appropriate access for pedestrians and bicyclists crossing the bridge; existing bridge railing that does not meet current design standards; and raised concrete areas adjacent to the shoulders that are not compliant with the Americans with Disabilities Act (ADA).

#### ***Safety***

The existing bridge has been identified as scour critical.<sup>1</sup> A scour critical bridge is one with abutment or pier foundations that are rated as unstable due to: (1) observed scour at the bridge site, or (2) a scour potential as determined from a scour evaluation study. Caltrans performed a visual inspection at Elk Creek Bridge in March 2016 that revealed significant observed scour occurring on both sides of the channel at Piers 2 and 3 and failure of the concrete slope protection at Abutment 4. Subsequent storms exacerbated the scour issue resulting in emergency repairs on the adjacent slopes.

#### ***Independent Utility and Logical Termini***

Regulations from FHWA (23 Code of Federal Regulations [CFR] 771.111[f]) require the project evaluate:

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<sup>1</sup> Scour is the engineering term for the erosion of soil (caused by water) surrounding a bridge foundation (piers and abutments).



- If the proposed project has logical termini
- If the proposed project has independent utility
- If the proposed project does not restrict the consideration of alternatives for other transportation improvements

*Independent utility* is an FWHHA requirement that highway projects are usable and a reasonable expenditure even if no additional transportation improvements in the area are made. FHWA states that “as long as a project would serve a significant function by itself (i.e., it has independent utility), there is no requirement to include separate but related projects in the same analysis.” The proposed project has independent utility as the proposed bridge replacement is enough to ensure that no additional investment in the bridge or SR 1 corridor at this location would be required as a result of project completion.

*Logical termini* is defined by FHWA as rational end points for both a transportation improvement and a review of environmental impacts for the transportation improvement. The proposed project possesses logical termini because the project focuses on improvements to the existing Elk Creek Bridge, and the project boundaries are limited to the bridge and roadway approaches in order to reduce the environmental impacts of the project and focus the impact analysis. The proposed improvements would not restrict the consideration of alternatives for other reasonably foreseeable transportation improvements. Continuing coordination would avoid potential conflicts with alternatives for this project and other planned area transportation improvements.

### 1.3. Proposed Project

This section describes the proposed action developed to meet the purpose and need of the proposed project, while avoiding or minimizing potential environmental impacts.

The existing Elk Creek Bridge, located on State Route 1 at post mile 31.4, approximately 2 miles south of the community of Elk is a 122-foot-long structure with two 11-foot lanes and 2-foot shoulders. The bridge was constructed in 1938 and is a continuous three-span, cast-in-place (CIP) reinforced concrete bridge<sup>2</sup> with reinforced concrete pier walls<sup>3</sup> and reinforced

<sup>2</sup> Cast-in-place concrete slab type bridges have no beams under the decks, but instead utilize reinforcing steel embedded in the bottom of relatively thick concrete slabs to carry the loads.

<sup>3</sup> Piers provide support for the bridge superstructure at intermediate points, with a minimum obstruction to the flow of traffic or water.



concrete seat abutments.<sup>4</sup> The abutments are founded on driven timber piles and the piers on driven steel piles.

The proposed replacement alternative would consist of a 140-foot-long, single span, cast-in-place/pre-stressed (CIP/PS) concrete box girder bridge supported on abutments only, with 12-foot lanes, 6-foot shoulders, and a 6-foot separated pedestrian and bicycle walkway on the west side of the bridge. This would include construction of a temporary, single span, one-lane, 22.5-foot-wide, 140-foot-long bridge and temporary roadway approaches east of the current bridge to accommodate alternating, one-way traffic control throughout the two in-water construction seasons. The temporary bridge would not require any piers in the channel and would be supported by abutments only. There are no existing utilities at the Elk Creek Bridge location, and none would be added under the proposed project.

Construction is anticipated to span three calendar years and approximately 24 months, with two in-water construction seasons (Stage 1 and Stage 2) due to in-channel work restrictions limiting activities below the Ordinary High Water Mark (OHWM) from June 15<sup>th</sup> to October 15<sup>th</sup>. Work during the first year, preconstruction site prep, would be limited to the fall/winter and would entail initial clearing of shrubs and trees. The second year would be the first in-water work season (Stage 1) and would entail installation of the stream diversion and dewatering system, the temporary bridge, demolition of the existing structure, and initial construction of the new bridge structure. The third year of project construction, Stage 2, would entail a second stream diversion, completion of the new bridge, removal of the temporary bridge, and installation of a bio engineered rootwad bank revetment on the northern bank.

A bio engineered bank revetment consisting of root wads would be installed along the north bank of Elk Creek to provide salmonid habitat to mitigate for project impacts to threatened and endangered fish species and protect the northern abutment as described in Mitigation Measure BR-1. The temporary bridge would be removed in the middle of the second in-water construction season once the new permanent bridge is completed to allow room for the bio engineered bank revetment to be constructed on the north bank and to ensure activities in the channel are completed before Oct. 15th.

Acquisition of right of way (ROW) for the bridge replacement, revetment construction and maintenance, and temporary construction access for bridge access and temporary bridge placement during construction of the replacement bridge is required. Temporary construction easements (TCEs) or permanent in-fee acquisition would be required on either

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<sup>4</sup> Abutments provide support for the ends of the bridge superstructure and retain the approach embankment.



side of SR 1 to accommodate construction activities, including storing equipment and materials, and constructing the access roads.

Once construction is complete, the existing ROW fencing would be replaced on either side of the bridge, and the guard rail on both the north and south sides of the bridge would be extended, helping to reduce available parking and prevent trespassing on the neighboring private property. Erosion control Best Management Practices (BMPs) would be installed immediately following construction. Riparian restoration work as described in Mitigation Measure BR-2 in Section 1.6 and in the Revegetation Plan would begin in the same season as construction ends or in the first planting season following the end of construction. Riparian planting would occur on all areas impacted by construction – a 1:1 mitigation ratio is anticipated to be completed on site. Additional mitigation to reach a 3:1 final mitigation ratio would occur on-site as space and private land access allows, or off-site at the Saunder's Landing parcels. Mitigation at the Saunder's Landing parcels comprises both in-kind and out-of-kind mitigation, including habitat preservation and enhancement. Details are included in the Draft Saunder's Landing Off-site Habitat Mitigation and Monitoring Plan.

In summary, the proposed scope of work would include the following:

### *Preconstruction*

- Cut and clear trees and shrubs within the proposed construction footprint during fall/winter.

### *Stage 1*

- Place construction area signage and temporary signal.
- Implement water pollution control BMPs and begin vegetation clearing and grubbing.
- Construct temporary fills for temporary bridge approaches, work pads, and to allow temporary equipment access.
- Install temporary creek diversion; water bladders and cofferdams; conduct fish capture and relocation.
- Install debris containment and work platform or gravel pad platform system.
- Excavate approximately 5 feet for the temporary bridge abutments and install 16 driven steel H-piles (14-inch flanges, 89 lbs./ft) to approximately 49.6 feet in depth (8 piles/abutment) and construct abutments for the temporary bridge.



- Construct temporary road approaches and place temporary steel truss bridge, and redirect traffic with use of traffic signal for one-way reversing traffic control.
- Demolish the existing bridge, abutments, and pier walls via jackhammer and backhoe, hoe-ram or stripping boom<sup>5</sup>.
- Excavate approximately 12 feet for the new bridge abutments and install 50 total driven steel H-piles - 24 at abutment 1 and 26 at abutment 2 to an estimated depth of 68.5 feet.
- Bridge structure construction:
  - Form new north and south abutments.
  - Install falsework piles (10-inch steel H-piles) up to 25ft deep if necessary and build falsework.
  - Cast-in-Place bridge construction; prestressing.
- Release falsework and construct new railing.
- Begin downstream installation of rootwad bank revetment.
- Remove temporary stream diversion and install BMPs.

## *Stage 2*

- Install temporary stream diversion.
- Complete realigned roadway approaches and transitions.
- Install signing and striping.
- Shift traffic onto new bridge structure and remove temporary bridge.
- Complete installation of rootwad bank revetment along the northern bank.
- Remove temporary stream diversion.
- Create onsite wetland (grade, compress, and add soil).
- Install permanent erosion control BMPs, including contractor installed plantings, and implement onsite Revegetation Plan.

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<sup>5</sup> A stripping boom is an attachment on a crane or excavator that allows the operator to use the machine to lower portions of the bridge demolition or false work to the ground in a controlled fashion, rather than free falling to the ground.



## 1.4. Construction Scenario

### *Work Area*

The project work area consists of Caltrans' existing ROW, TCEs, and the new ROW to be acquired. Small turnouts, plots of land directly adjacent to the bridge, and portions of the existing roadway approaches outside of the temporary traffic detour would be used for staging areas. Temporary construction easements and new ROW would be acquired to construct an access road on the southwest and northwest sides of the bridge leading down to the banks of the creek channel. The construction of the temporary bridge would be accomplished from the top of bank at 15 feet above Mean Sea Level (MSL) or the top of the RSP along the north bank and will be removed after it is no longer needed. The removal of the existing bridge and construction of the new bridge would be accomplished from a stream diversion gravel pad/culvert system or a temporary work platform. Construction of the temporary bridge would include construction of temporary roadway approaches and temporary abutments supported on 16 driven steel H-piles to approximately 49.6 feet in depth (8 piles/abutment).

The installation of the first season's temporary clear water stream diversion and dry work area are expected to begin the stage 1 construction effort. Installation of the temporary bridge, removal of the existing bridge, and construction of the new bridge would require construction of a temporary clear water stream diversion, dry working platform, and debris catchment system below the bridge within the banks of Elk Creek. The temporary clear water stream diversion would be installed after June 15 to comply with seasonal in-water work restrictions. The stream diversion would start approximately 110 feet upstream of the existing bridge and continue downstream, under the bridge and temporary work platform or gravel pad system, for approximately 80 feet, totaling approximately 221 linear feet. The width of the creek up and downstream of the bridge averages between 32 and 42 feet, therefore the area of channel to be dewatered is conservatively estimated at a maximum of 8,177 ft<sup>2</sup> (0.19 acre). This total potential diversion length is unlikely to be needed all at one time; however, to make sure that Caltrans is covered for the possibility that the contractor does divert this entire area for two seasons, it is assumed that the stream may be temporarily diverted for the entire 221 linear feet for both in-stream work seasons.

Completion of the bio engineered revetment and in-stream fish habitat enhancement would require a second temporary clear water stream diversion during the second season of construction. The final diversion method for both seasons of work would be based on permit conditions from permitting agencies and site conditions during construction. Intermittent



natural closures of the creek mouth may cause fluctuating water levels in the creek between June and October.

The proposed project's designated work area would be cleared of any obstacles or debris prior to construction. Clearing, cutting, and trimming of vegetation would be minimized whenever possible.

### ***Construction Phasing***

Currently, construction is anticipated to span three calendar years and approximately 24 months, with two in-water construction seasons, stage 1 and stage 2. Preconstruction site preparation would begin in and be limited to the fall of the first calendar year and would entail initial clearing of shrubs and trees from within the project construction footprint. The first in-water work season would begin in the spring of the second calendar year and would entail installation of the temporary clear water stream diversion and dewatering, construction of the temporary bridge, work platform and debris containment, demolition of the existing structure, and construction of the new bridge. The second in-water work season would occur in the third calendar year and would entail a second temporary clear water stream diversion, completion of the new bridge (e.g. installing railings and finishing approaches), removal of the temporary bridge, installation of the rootwad bank revetment on the northern bank and initiation of riparian restoration. Instream work will last a total of 10 months over two consecutive calendar years. Night work is not planned at this time; however, both night and weekend work could potentially be necessary when construction activities are actively in progress, depending on unforeseen delays with construction.

A Transportation Management Plan (TMP) that includes the following actions would be implemented during construction:

- The closure of one lane is allowed within the project limits using a temporary traffic-actuated signal system with 12-inch flashing beacons installed on the three advance construction signs.
- Reversing traffic control with flaggers require the use of advance flaggers during daylight hours and full matrix Portable Changeable Message Sign boards.
- During installation of the temporary traffic signal, public traffic may be stopped in both directions of periods not to exceed 10 minutes.

After the installation of the stage 1 temporary clear water stream diversion and the dry work area, the temporary roadway approaches would be constructed followed by the temporary



22.5-foot-wide bridge on the east side of the existing bridge. The temporary bridge would be offset 5 feet from the existing bridge and approximately 4 feet from the new bridge.

The temporary bridge would be a prefabricated, modular, single span steel panel truss bridge approximately 140 feet in length supported by abutments at either end. No instream piers are required for the installation of the temporary bridge. Abutment 2, on the north side of the temporary bridge, would require temporary fill and temporary shoring to match the existing grade of Abutment 1. After the temporary fill/temporary shoring is in place, and roadway approaches have been constructed, the abutments would be constructed for the temporary bridge. The temporary bridge abutments will require pile driving, ground disturbance, and excavation. Excavation is anticipated to be 5 feet deep on the north and south banks of Elk creek above the OHWM, and pile depths for the temporary bridge abutments would be up to approximately 45 feet deep. Once the abutments are completed, the temporary bridge would be put in place, asphalt would be placed on the driving surface and the traffic control system would be installed. Highway traffic would then be shifted over to the temporary bridge using one-way signalize traffic control. The temporary bridge is anticipated to be in place for approximately 18 months.

### ***Bridge Demolition and Construction***

Once traffic is shifted to the temporary bridge, access roads would be constructed from the southwest and northwest corners of the existing bridge to the temporary clear water stream diversion, debris catchment system, and temporary work platform. The existing bridge would then be demolished using jackhammers, cranes, and excavators. To demolish the existing bridge, the existing bridge deck and girders would be removed, followed by removal of the concrete piers and abutments. Lastly, the existing bridge foundations would be removed and the existing piles cut off three feet below original ground surface or the finished grade, whichever is lower.

Dewatering may be required to remove the existing pier foundations. A cofferdam consisting of vibrated or driven sheet piles may be needed to adequately dewater the area around each of the existing pier foundations. The sheet piles would likely be placed between 5 to 10 feet outside the footprint of the existing foundation. Alternative to using a cofferdam, the contractor may elect to simply dig a hole to the necessary elevation below grade and dewater to work area using pumps. The water pumped from the excavation would likely be run through settlement tanks or ponds, or infiltrated into upland areas, before returning to Elk Creek.



After the existing bridge is demolished, construction of the new bridge would begin. Excavation at Abutments 1 and 2 for piles and pile driving would be required. Heavy equipment, such as excavators, backhoes, and other machinery, would be used to excavate for the proposed new abutments. A large crane with pile leads<sup>6</sup> and diesel hammer would be used to drive piles to the required depth. The piles will be steel H piles with 14 inch flanges and weigh 89 lbs/foot and will be driven to estimated depth of 68.5 feet. Falsework would be constructed to enable the construction of the new structure. There is a high likelihood that pile driving for falsework would be necessary depending on the contractor and soil conditions. Falsework bents may also be placed on timber spread footings on land or on the gravel pad/culvert stream diversion.

Once the piles are installed to the required depth, temporary forms for the foundations and abutments would be constructed using timber materials and steel reinforcement. Additional dewatering may be necessary to provide access to pour the foundation and abutment walls. Following these activities, the concrete abutments would be poured, cured, tested, and accepted, after which the wingwalls<sup>7</sup> would be formed. After the adjoining wingwalls have been constructed, the abutments would be backfilled with earth and compacted per engineered specifications with the proper structure drainage in place.

Following the construction of the abutment walls and temporary falsework piers, construction of the new bridge superstructure would begin, as follows:

- The falsework would be constructed across the creek. Falsework would be constructed on each side of the creek above the OHWM. Falsework materials would consist of timber materials and steel beams.
- Steel reinforcement would be installed for the deck, timber forms would be installed, and then concrete would be poured into the forms. The prestressing operation would occur after the superstructure concrete is cured.
- After the bridge is stressed, the falsework will be removed and the stream diversion will be removed from within the channel.
- Once the concrete deck is cured, timber forms and steel reinforcement would be installed, and concrete would be poured into the forms for the pedestrian safety barriers.

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<sup>6</sup> Pile Leads are a frame that supports and lifts the pile and hammer.

<sup>7</sup> The wingwalls are adjacent to the abutments and act as retaining walls.



- After the proposed bridge is constructed, roadway approaches would be widened and reconstructed to conform from the proposed bridge to the profile of the existing roadway. The approaches would be widened from the existing 11-foot lanes to 12-foot lanes, and their shoulders would be widened to vary from 2 to 6 feet to conform to proposed bridge shoulders and the 6-foot separated pedestrian and bicycle walkway on the bridge. Road improvements would include installation of Midwest Guardrail System with concrete vegetation control, crash cushions, roadside ditches, and cross culverts at the southern end of the bridge and southernly approach. Traffic would then be shifted over to the new bridge.
- The temporary bridge, temporary abutments, steel plates, K-rail, temporary fill, and fabric would then be removed.
- The bio-engineered bank revetment and rootwad installation would be completed on the north bank.
- The existing Right of Way fencing would be replaced and extended where necessary.

Throughout construction, Caltrans would implement temporary and permanent Standard Measures and BMPs. Anticipated equipment used to construct the proposed project would include:

- Front end loaders
- Backhoes
- Graders
- Dump trucks
- Concrete trucks and concrete pump trucks
- Excavators
- Asphalt compactor (roller)
- Crane
- Pile drivers (impact and vibratory)
- Fork lifts
- Trailer-mounted portable generators
- Pick-up trucks
- Light hand tools
- Pumps (for dewatering to pour the foundation and abutment walls)
- Hydraulic hoe ram



- Prestressing Jack and post-tensioning equipment

### ***Drainage Systems***

The majority of existing roadside ditches would be filled and then reconstructed onsite to maintain existing water collection from the vegetated hillside and recreate similar flow patterns. The existing bridge has scuppers, which currently allows the bridge to drain directly to the creek. In contrast, the new bridge will not have scuppers, and stormwater would be discharged to drainage systems on the southwest side of the bridge. An estimated 38% of stormwater runoff within the project area, conveyed through drainage systems (DS) 2 and 3, would discharge onto native riparian soils with low gradient slopes ( $< 2\%$ ); runoff from these two drainage systems would flow through the riparian zone for a distance of approximately 75 and 50 feet (respectively) before reaching the top of bank elevation. An additional estimated 29% of stormwater runoff would be conveyed through DS 4 at the northwest end of the bridge; runoff associated with this system would be directed over native soils of variable slope for a distance of approximately 75 feet to top of bank, and a total distance of  $>100$  feet before reaching OHWM of Elk Creek. All native soil areas would be de-compacted after construction and planted with native riparian vegetation as part of the proposed onsite Revegetation Plan; this would help to increase infiltration, decrease potential for erosion during large storm events, and help protect water quality in surface waters of Elk Creek.

The remaining stormwater would come from the southern portion of the project; this area is estimated to account for approximately 33% of stormwater runoff within the project area. In order to reduce the potential for direct discharge of stormwater to Elk Creek, several improvements over existing conditions would be implemented. Approximately 160 feet of existing roadside dike would be removed—this would allow 10% of the runoff from this southern section to sheet flow from the road surface onto the vegetated shoulder over a dispersed area rather than concentrating the runoff through DS 1, the proposed overside drain (OSD) located at approximately Station 13+94. DS 1 would consist of an infiltration ditch placed at the outlet of proposed OSD to allow the remaining 23% of stormwater to infiltrate into the road shoulder rather than discharge directly to Elk Creek. While the previous designs included stormwater treatment in the form of biostrips, they also included perpetuation of the existing conditions at DS-1 – an OSD and plastic downdrain that would have conveyed stormwater runoff directly into the creek. In contrast, the current proposed design of DS-1 would remove the downdrain and replace this with an infiltration drainage ditch, avoiding direct discharge to Elk Creek.



### ***Site Restoration***

When construction is completed, the project work area would be restored by removing any construction debris and grading to the original grade and contour. The beds and banks of the creek affected during construction would be seeded with an appropriate seed mix. The Erosion Control Plan and Revegetation Plan as outlined in Mitigation Measure BR-2 would be implemented following construction. The project would also include creation of a new wetland area on the southeast quadrant of the bridge to compensate for loss of a small wetland ditch; this wetland would be located at the base of the cliff and would receive rainwater runoff and seepage from the cliff base. The wetland would be created and planted following the end of construction in year two and would be maintained and monitored in accordance with permit requirements.

This project proposes to remove the current RSP east of the existing structure along the north bank of Elk Creek with a rootwad revetment (bank stabilization) to protect the roadway embankment and restore a more natural in-stream habitat. This permanent erosion control rootwad system would be constructed along approximately 160 ft of the north stream bank and will incorporate plantings of native riparian plant and tree species at the top of bank as detailed in the Revegetation Plan. This bio engineered revetment would provide instream salmonid habitat as described in Mitigation Measure BR-1, below in section 1.6.

These additional habitat restoration elements would be constructed along the north bank of the creek, east of the bridge as outlined in Mitigation Measure BR-1. Final designs for these elements are under development in cooperation with the California Department of Fish and Wildlife (CDFW) and would be submitted to CDFW, NMFS, and the California Coastal Commission for final review. To complete necessary habitat restoration to the construction site and RSP removal upstream of the bridge, a second season of instream work would be necessary. These impacts would be of lesser intensity and shorter duration than the construction effort itself. Standard measures and BMPs would be implemented as necessary and appropriate to avoid and minimize impacts from the required work. The restoration would be a beneficial effect and would not contribute to negative cumulative impacts. This installation would be the last piece of the construction effort.



## 1.5. Standard Measures/Best Management Practices (BMPs)

This project would incorporate standardized project measures and BMPs which are employed on most, if not all, Caltrans projects and were not developed in response to any specific environmental impact resulting from the proposed project.

Additional mitigation measures developed for the project are in Section 1.6, and measures recommended by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service as a result of Section 7 consultation have been included in Section 1.7.

### *Human/Physical Environment*

#### *Property Acquisition*

**COM-1:** Property acquisition would be conducted in compliance with Title VI of the Civil Rights Act (42 USC 2000d, et seq.), the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (as amended), and Title 49 CFR Part 24.

#### *Traffic and Transportation*

**TR-1:** A Transportation Management Plan (TMP) would be applied to the project.

#### *Aesthetics/Visual*

**AE-1:** Implement Section 7-1.04 of Caltrans' Standard Specifications, which requires that temporary illumination be installed in a manner that the illumination and the illumination equipment do not interfere with public safety. Where feasible, construction lighting would be limited to within the area of work.

**AE-2:** Comply with Caltrans' 2016 *Highway Design Manual*, which utilizes Context Sensitive Solutions consistent with the 2001 Director's Policy memorandum DP-22, including Design Standards 304.1, *Side Slope Standards*; 304.4, *Contour Grading and Slope Rounding*; and 902.1, *Design Considerations, Aesthetics*.

**AE-3:** 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.



### ***Cultural Resources***

- CR-1:** 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-2:** 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).

### ***Water Quality and Stormwater Runoff***

- WQ-1:** Projects that result in a land disturbance of one acre or more 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, and the Construction General Permit (Order 2009-0009-DWQ).

Before any ground-disturbing activities, the contractor would prepare a Storm Water Pollution Prevention Plan (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 Storm Water Pollution Prevention Plan 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 Storm Water Pollution Prevention Plan would be continuously updated to adapt to changing site conditions during the construction phase.

Construction may require one or more of, but is not limited to, following temporary construction site BMPs:

- 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 as applicable. 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.

**WQ-3:** The contractor would be required to prepare and submit a Temporary Creek Diversion System Plan to Caltrans for approval prior to any creek diversion (see WW-4 below for details).

**WQ-4:** The project would incorporate drainage improvements to reduce water quality impacts from stormwater runoff. These include:

- New bridge design does not include scuppers.
- Existing vegetated areas would be maintained to the maximum extent practicable. Clearing, grubbing, and excavations would be limited to specific locations where access is required for construction and where the highway, bridge, and road approaches are to be constructed.
- 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 terraces above ordinary high water, thus providing filtration of any potential pollutants.

### ***Geology and Soils***

**GE-1:** The proposed project would be designed according to Caltrans seismic standards.

### ***Paleontological Resources***

**PA-1:** Implement the provisions of Caltrans Standard Specifications Section 14-7 addressing the unanticipated discovery of paleontological resources.

### ***Hazardous Waste and Materials***

**HZ-1:** Implement Caltrans Standard Specifications Section 14-11.14 for Treated Wood Waste.

**HZ-2:** Implement Caltrans Standard Specification Section 14-9.02 Asbestos NESHAP Notification to the Mendocino County Air Quality Management District (MCAQMD).

- HZ-3:** Implement Caltrans Standard Specifications Sections 7-1.02K(6)(j) and 14-11.13 for lead.
- HZ-4:** Implement Caltrans Standard Specification 14-11.08 Regulated Materials Containing Aerially Deposited Lead.
- HZ-5:** Implement Caltrans Standard Specifications Section 14-11.09 Minimal Disturbance of Material Containing Regulated Concentrations of Aerially Deposited Lead.
- HZ-6:** Implement Caltrans Standard Specifications Section 36-4 Containing Lead from Paint and Thermoplastic.
- HZ-7:** Implement Caltrans Standard Specifications Section 84-9.03B Remove Traffic Stripes and Pavement Markings Containing Lead.

#### ***Air Quality***

- AQ-1:** Implement Caltrans Standard Specification Section 14-9.02, which includes specifications relating to air pollution control and requires that projects comply with air pollution control rules, regulations, ordinances, and statutes, including those provided in Government Code Section 11017 (Public Contract Code Section 10231).
- AQ-2:** Implement Caltrans Standard Specification Section 18 to control dust during construction.

#### ***Noise***

- NOI-1:** Implement Caltrans Standard Specifications Section 14-8.02 Noise Control to control the generation of construction-related noise.

#### ***Greenhouse Gas Emissions***

- GHG-1:** The construction contractor must comply with the 2018 Caltrans Standard Specifications in Section 14-9. Section 14-9.02 specifically 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 (CCR), which includes idling restrictions of construction vehicles and equipment to no more than 5 minutes.
- GHG-3:** Caltrans 2018 Standard Specification 7-1.02C “Emissions Reduction” ensures that construction activities adhere to the most recent emissions reduction regulations mandated by the California Air Resource Board.

## ***Biological Resources***

### ***General***

- GC-1:** Before any work within the project limits, including equipment staging, grading, and tree and/or vegetation removal (clear and grub), or as required by permit or consultation conditions, a Caltrans biologist or ECL would meet with construction personnel (contractors and subcontractors) 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, locations of ESAs, and how to identify and report regulated species within the project areas.
- GC-2:** Debris removal during construction would be conducted as often as feasible and practicable by the contractor.

### ***Natural Communities***

- NC-1:** After all construction materials are removed, the project area would be restored to a natural setting by grading, placing erosion control, and replanting.
- A Revegetation Plan would be submitted to permitting agencies for review prior to implementation and would include a species list, number of each species to be planted, planting locations, and maintenance requirements. The plan would be subject to a plant establishment period as defined by project approvals, which would require Caltrans to meet defined goals for success of restoration of streambank shade, community reestablishment, as well as methods (e.g. adequately water plants, replace unsuitable plants, and control invasive species). If possible, plantings would consist of cuttings taken from local plants or plants grown from local genetic material.
  - Bank stabilization techniques used would follow the guidelines outlined in the California Salmonid Stream Habitat Restoration Manual (Flosi et al., 2010).

- NC-2:** The contractor would be required to place temporary high-visibility fencing (THVF) or flagging along the boundaries of riparian, wetland, or other environmentally sensitive areas on land to avoid impacts to sensitive habitats that occur adjacent to the project footprint. The extent and location of THVF would be shown on the final construction plans for the proposed project. No work would occur within fenced/flagged areas.
- NC-3:** If possible, vegetation within proposed access roads would be cut back close to the ground with roots left undisturbed. Soils within temporarily disturbed areas would be protected from compaction and tilling of native soils would be avoided to the extent feasible.
- Any soil protection materials, barriers, or any additional road base would be completely removed upon completion of construction.
- NC-4:** All areas of fill would be amended with either locally sourced and relatively weed-free topsoil or with compost, as determined by Caltrans Landscape Architect specifications, to create conditions appropriate for planting and revegetation. Where feasible, existing topsoil would be removed, stockpiled, and replaced on new fill. Fill slopes may also be amended by incorporating compost into the top layer.
- No topsoil would be stockpiled or redistributed from soils where invasive plant species are abundant.

### ***Wetlands and Other Waters***

- WW-1:** Prior to the start of work, the contractor would be required to place temporary high-visibility fencing (THVF) or flagging along the boundaries of all riparian, wetland or other environmentally sensitive areas adjacent to the project footprint. No work would occur within fenced/flagged areas. Caltrans and/or the contractor (at the discretion of Caltrans) would ensure the fencing is maintained throughout the duration of the construction period. If the fencing is removed, damaged, or otherwise compromised during the construction period, construction activities would cease until the fencing is repaired or replaced.
- WW-2:** The project footprint would be minimized to the smallest possible extent.



- WW-3:** Wetland and riparian areas temporarily impacted by construction would be restored to pre-existing conditions (see NC-1 for details on restoration and revegetation).
- WW-4:** The Contractor would be required to prepare and submit a Temporary Creek Diversion System Plan to Caltrans for approval at least 30 days prior to any creek diversion or dewatering effort. The plan would require specifications for the relocation of sensitive aquatic species (see also Aquatic Species Relocation Plan in AS-4). Water generated from the diversion operations would be pumped and discharged according to the approved plan and applicable permits.
- WW-5:** The Contractor would retain a qualified biologist to conduct periodic site visits during construction activities that involve ground disturbance (e.g., vegetation removal, grading, excavation, temporary bridge construction) within or adjacent to wetlands and other waters.

### ***Animal Species***

- AS-1:** Nest Surveys: To protect migratory and nongame birds, their occupied nests and eggs, nesting prevention measures would be implemented. Vegetation removal would be restricted to September 16 through January 31 (outside of the bird breeding season) or, if vegetation removal is required during the breeding season (February 1 to September 15), a nesting bird survey by a qualified biologist would be conducted within 5 days prior to vegetation removal. If an active nest were located, the biologist would coordinate with the 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.
- AS-2:** Bird Exclusion: A Bird Exclusion Plan would be prepared by a qualified biologist prior to construction. Exclusion devices would be designed so they would not trap or entangle birds or bats. Exclusion devices would be installed outside of the breeding season (September 16 through January 31) to eliminate the re-occupancy of existing structures by migratory bird species that may attempt to nest on the structure during construction. On structures or parts of a structure where it is not feasible to install bird exclusion devices, partially constructed and unoccupied nests within the construction area would be removed and disposed of on a regular basis throughout the breeding season (February 1 through September

15 with biologist discretion) to prevent their occupation. Nest removal would be repeated weekly under guidance of a qualified biologist to ensure nests are inactive prior to removal. The contractor would be required to submit the Exclusion Plan for review and approval by the Caltrans Project Biologist prior to implementation.

**AS-3:** Raptor Surveys: Pre-construction surveys for active raptor nests within one-fourth mile of the construction area would be conducted by a qualified biologist within one week prior to the 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 and subject to approval by the Caltrans Project 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.

**AS-4:** Aquatic Species Relocation: Prior to any dewatering, diversions, stream crossings or other in-channel work, the contractor would be required to provide to Caltrans for review and approval an Aquatic Species Relocation Plan (as part of the Construction Site Dewatering and Diversion Plan) prior to initiating in-channel work or installation of the dewatering system. The Aquatic Species Relocation Plan would include provisions for a pre-construction survey by professional aquatic species and fisheries biologists and clearly outline the method for dewatering and fish relocation. Fish salvage would be performed by professional fisheries biologists who have experience in safe removal of all potential species within the project area. Electrofishing for salmonids must comply with the Guidelines for Electrofishing Waters Containing Salmonids listed under the Endangered Species Act published by NMFS and any seining or other capture and removal techniques would adhere to the California Salmonid Stream Habitat Restoration Manual (Flosi et al., 2010).

At a minimum, the plan would include provisions pertaining to the timing and methods of conducting the dewatering and fish and amphibian relocation, these may include all or some of the following:



- If practicable, remove fish and amphibians before dewatering; otherwise, remove animals from an exclusion area as it is slowly dewatered with methods such as hand or dip-nets, seining, or trapping with minnow traps (or gee-minnow traps).
- Manage isolation areas in a manner to avoid multiple salvage events (e.g., do not let water or fish into the isolation during non-work times).
- Fish capture will be supervised by a qualified professional fisheries biologist with experience in work area isolation and competent to ensure the safe handling of all fish.
- Conduct fish capture activities during periods of the day with the coolest air and water temperatures possible, normally early in the morning to minimize stress and injury of species present.
- Monitor block nets frequently enough to ensure they stay secured to the banks and are free of organic accumulation.
- Electrofishing would be used during the coolest time of day, only after other means of fish capture are determined to be not feasible or ineffective.
- Do not electrofish where the water appears turbid, e.g., where objects are not visible at a depth of 12 inches.
- Do not intentionally contact fish with the anode.
- Follow NMFS (2000 or most recent) electrofishing guidelines.
- Begin electrofishing with a minimum pulse width and recommended voltage, then gradually increase to the point where fish are immobilized.
- Immediately discontinue electrofishing if fish are injured or killed, i.e., dark bands visible on the body, spinal deformations, significant de-scaling, torpid or inability to maintain upright attitude after sufficient recovery time.
- Recheck machine settings, water temperature and conductivity, and adjust or postpone procedures as necessary to reduce injuries.

Considerations specific to Pacific Lamprey (*Entosphenus tridentatus*):

- The Aquatic Species Relocation Plan would include provisions for a pre-construction survey for lamprey by professional aquatic species and fisheries biologists, or lamprey would be assumed to be present.
- If lamprey are present, or assumed to be so, then dewatering and electrofishing methods must also comply with Best Management Practices to Minimize Adverse Effects on Pacific Lamprey (*Entosphenus tridentatus*) (U.S. Fish and Wildlife Service 2010a).

If buckets are used to transport fish or amphibians:

- Minimize the time fish are in a transport bucket.
- Keep buckets in shaded areas or, if no shade is available, covered by a canopy.
- Limit the number of animals within a bucket; to minimize predation, fish will be of relatively comparable size.
- Use aerators or replace the water in the buckets at least every 15 minutes with cold clear water.
- Release fish in an area upstream with adequate cover and flow refuge; downstream is acceptable provided the release site is below the influence of construction.
- Monitor and record fish and amphibian presence, handling, and injury during all phases of fish capture. Even if no fish are caught, submit a fish salvage report to the NMFS Santa Rosa Office within 60 days of capture (or isolation) that documents date, time of day, fish handling procedures, air and water temperatures, and total numbers of each FESA-listed fish injured or killed.

The plan would also include provisions for a pre-construction survey for amphibians and reptiles by a qualified biologist within 24 hours prior to any ground-disturbing activities, in-channel work or electrofishing. Any reptiles, frogs, tadpoles, and egg masses found during the initial survey would be relocated to suitable habitat outside of the project area by a qualified biologist with the



specific state and/or federal handling authorization. Additional measures specific to the California red-legged frog are listed in Section 1.5.4, Measure TS-8. The biologist would be present during all phases of in-stream construction to assist with relocation efforts as they arise.

**AS-5:** Bats: To protect bats, the following surveys and protective measures would be implemented as appropriate based on the type and timing of project activities:

***Preconstruction Bridge Surveys***

- To permanently exclude bats from using the bridge for either night or day roosts (e.g. prior to demolition), a qualified biologist would: Survey bridge structure; if bat signs are detected, but the presence or absence of bats cannot be verified by visual inspection, then biologists would conduct evening visual emergence surveys of the bridge from one-half hour before sunset to at least 2 hours after sunset for a minimum of 2 nights, no more than 2 weeks prior to the start of bridge work. All emergence surveys would be conducted during favorable weather conditions (calm nights with temperatures conducive to bat activity (above 50 degrees F) and no precipitation predicted).
- If bats are found to be roosting in the bridge, a Bat Exclusion Plan would be prepared by a qualified biologist and submitted to the Caltrans project biologist for review and approval prior to construction. Exclusion devices would be designed so they would not trap or entangle bats or birds. The Bat Exclusion Plan would include guidelines for appropriate date of exclusion and temperature parameters based on bridge type, geographic location, and species present. At the direction of a qualified biologist, exclusion devices would be installed after the maternity season but before hibernation (generally Sept 16 – Nov 15) in the year prior to construction. If overlapping resources are present (e.g., nesting birds), coordination between the Bat Exclusion Plan and any other relevant plans would occur. Temporary exclusion measures would be monitored by a qualified biologist.

Once the bridge is determined unoccupied, the cracks would be sealed to prevent reentry prior to construction using the following methods:

- Permanently exclude bats by using a combination of half-inch-square hardware cloth and expandable foam, such as Great Stuff Big Gap Filler (Dow Chemical in Midland, MI), to fill crevices.

- Exclusion would be inspected prior to demolition to ensure it has remained intact and effective and the structure has not been re-occupied by bats/birds.

### ***Preconstruction Tree Surveys***

- Seasonally-appropriate emergence surveys prior to construction would be conducted by a qualified bat biologist to fully assess bat presence and behavior.
- If seasonal emergence surveys indicate bat roosting behavior in the ESL, areas proposed for tree removal in suitable habitat (e.g., trees with large cavities, snags) must be surveyed by a qualified contractor-supplied bat biologist to determine if day roosting bats are present no more than 14 days prior to the beginning of tree removal, regardless of season. High-quality habitat features (e.g., tree cavities, basal hollows, loose or peeling bark, larger snags) would be identified, and the area around these features searched for bats and bat signs (e.g., guano, culled insect parts, staining). Riparian woodland and stands of mature broadleaf trees would be considered potential habitat for solitary foliage roosting bat species.
- Where bat habitat is identified, biologists would conduct additional evening visual emergence surveys, paired with an acoustic survey of the source habitat feature, from one-half hour before sunset to 1 to 2 hours after sunset, for a minimum of 2 nights; surveys would occur no more than 14 days prior to construction activities. All emergence surveys would be conducted during favorable weather conditions (calm nights with temperatures conducive to bat activity and no precipitation predicted).
- If any day roost sites are detected, tree removal would be postponed, and appropriate buffers may be implemented. Tree removal would then occur during the fall season in the year prior to construction, after the bat maternity season (ending approximately September 15) and before bats begin hibernating (November 1 or during the winter prior to February 1 if temperatures are above 50 degrees Fahrenheit). Prior to continuation of tree removal, the bat biologist would resume monitoring the roost with emergence surveys to ensure no bats are present. Additionally, a phased vegetation removal approach would be followed:



- The first day(s) of vegetation removal, remove all trees and shrubs under 12 inches dbh. The following day(s), remove remaining trees larger than 12 inches dbh. A Contractor Supplied Biologist shall be present during tree removal to stop work if day roosting bats are found.

**AS-6:** Seasonal In-Stream Restrictions. To avoid the primary migration periods and most vulnerable life stages of fish species that may occur in the project area, in-water work would be restricted to the period between June 15 and October 15.

**AS-7:** Western Pond Turtle Pre-construction survey. A preconstruction survey for WPT would be conducted by a qualified biologist if work begins during the species critical egg laying period (March–August). If any WPT nests are observed in the project footprint, consultation with CDFW would be initiated, and an appropriate course of action would be carried out with guidance from CDFW.

### ***Threatened and Endangered Species***

**TS-1:** A qualified biologist would monitor in-stream construction activities. The biological monitor would be present during all major construction activities, including bridge demolition, dewatering, and initial ground-disturbing activities.

**TS-2:** The pre-construction meeting with the contractor would include a briefing on environmental permit conditions and requirements relative to each stage of the proposed project, including, but not limited to, work windows, construction site management, and how to identify and report regulated species within the project areas.

**TS-3:** Artificial night lighting may be required during project construction. To reduce potential disturbance to sensitive resources, lighting would be temporary and directed specifically on the portion of the roadway actively under construction. Use of artificial lighting would be limited to Cal/OSHA work area lighting requirements.

**TS-4:** Fish, reptile and amphibian relocation would be performed as described under AS-4 or as specified from Section 7 consultation with NMFS and USFWS.

**TS-5:** To protect listed aquatic species, the following measures would be included in the Temporary Creek Diversion System Plan (WW-4) and implemented during installation of the stream diversion and cofferdam dewatering:

- All pumps used during dewatering of cofferdams would be screened according to Agency (CDFW, USFWS, NMFS) guidelines for screening pumps.
- Stream diversion and cofferdam dewatering and fish guiding and fish rescue/relocation from within de-watered areas would occur during the proposed in-water work window (between June 15 and October 15) only. Fish guiding and fish rescue/relocation would commence as soon as possible following stream diversion or cofferdam closure and commencement of dewatering or prior to implementing pile driving or hoe-ram demolition activities (see AS-4).

**TS-6:** The following measures would be implemented to minimize potential impacts from pile driving and minimize exceedance of threshold sound levels during pile driving and hoe-ram operations.

Caltrans would require the contractor implement the following measures, developed in coordination with project design engineers, to minimize the exposure of listed fish species to potentially harmful underwater sounds during each construction season that impact pile driving occurs:

- Vibratory pile driving would be used in lieu of impact pile driving whenever feasible. Impact driving and hoe-ram operations would be minimized to the extent practicable.
- If possible, in-channel pile driving activities would be conducted between June 15 and October 15 to avoid the primary salmonid migration season.
- During impact driving, the contractor would limit the number of strikes per day to the minimum necessary to complete the work, and would limit the total number of hammer strikes per day to stay below the cumulative sounds exposure level (SEL) injurious to fish as established by the Fisheries Hydroacoustic Working Group (FHWG) or otherwise determined through Section 7 Endangered Species Act Consultation with NMFS. Pile-driving activities would cease for the day if the noise levels approach specified thresholds.
- Pile driving activities would cease for the day if noise levels approach the thresholds established by FHWG where fish are present and pursuant to finalized Section 7 consultation agreements.



- Impact pile driving, and hoe-ram operations would be limited to daylight hours only and would be followed by a minimum period of 12 hours with no impact pile driving to allow the accumulated SEL to reset to zero.

Although not anticipated, if in-water pile driving is deemed necessary, Caltrans would require the contractor first dewater the area using a clear water diversion or install a sound attenuation device while driving piles to minimize the extent to which the interim peak and cumulative sound exposure level thresholds are exceeded for piles driven in water (Caltrans 2021). Types of sound attenuation system include, but are not limited to:

- Confined bubble curtain
- Unconfined bubble curtain
- Isolation casings

**TS-7:** A Hydroacoustic Monitoring Plan would be prepared by qualified personnel prior to construction that addresses the monitoring methodology, frequency of monitoring, positions that hydrophones would be deployed, techniques for gathering and analyzing acoustic data, quality control measures, and reporting protocols.

- Hydroacoustic monitoring would be conducted during all construction activities that have the potential to produce impulsive sound waves. This includes any pile driving, hoe-ramming, or jackhammering.
- Hydroacoustic monitoring would ensure compliance with the terms and conditions resulting from Section 7 Endangered Species Act Consultation with NMFS and provide opportunity to adopt alternative construction methods to avoid or minimize project impacts where feasible.

**TS-8:** Implement protective measures to minimize effects on the California red-legged frog (CRLF). Specific measures would be determined through formal Section 7 consultation with USFWS, and are likely to include, but are not limited to, the following:

- A qualified biological monitor would conduct worker environmental awareness training for the construction workers prior to the start of construction activities. Awareness training would include a brief review of the biology of the California red-legged frog and guidelines that must be

followed by all construction personnel to avoid take of California red-legged frogs.

- Within 24 hours prior to the onset of ground disturbance activities, the qualified biologist would survey the project area for all life stages of the California red-legged frog. Surveys must be conducted immediately prior to ground-disturbing activities to lower the probability of one or more adult or sub-adult frogs moving into or laying eggs within the project area after a survey has already been conducted.
- Water pumps would be screened with wire mesh screens no larger than 0.2 inch to prevent California red-legged frog tadpoles, sub-adults, and adults from entering the pump system. Although pre-activity surveys may have detected no California red-legged frogs, this measure is to ensure that frogs that were missed during the survey are not harmed or killed by water pumps.
- All food-related trash would be disposed of in closed containers and removed from the project area at least twice per week during the construction period. Food may attract frog predators, such as raccoons, to the project area.
- The contractor would implement a toxic materials control and spill response plan. Equipment refueling would only occur at staging areas to avoid fuel entering the floodplain.
- Vegetation cutting and removal activities would be done with the use of hand tools (including chainsaws) to the maximum extent feasible. If vehicles or equipment are used off the existing paved or graveled surface, then the work area would first be fenced with temporary high-visibility wildlife fencing and surveyed for CRLF by a qualified biologist immediately before and during the proposed work.
- The number of access routes, numbers and sizes of staging areas, and the total area of the activity would be limited to the minimum necessary to achieve the project goal. Routes and boundaries would be clearly demarcated and bordered by specialized wildlife (frog) exclusion fencing.
- All HVF within riparian areas would also function as wildlife exclusion fencing. High visibility wildlife exclusion fencing would be installed immediately adjacent to riparian areas and waters within the project ESL and



would include a climber barrier to prevent frogs from entering the construction area from occupied habitat (e.g., Ertec or Animex wildlife exclusion fencing) and would be:

- Properly installed, trenched in and vertically stout, and regularly maintained.
- At least three feet in height.
- The top few inches (3-5") must be folded over and away from the construction area.

### ***Invasive Species***

- IS-1:** To prevent the spread of invasive plant species in disturbed soil after construction, all disturbed areas would be seeded with native herbaceous species and straw, straw bales, seed, mulch, or other material used for erosion control or landscaping which would be free of noxious weed seed and propagules weed-free mulch would be applied.
- IS-2:** All equipment would be thoroughly inspected and cleaned of all dirt and vegetation prior to entering the job site to prevent importing invasive non-native species.
- IS-3:** Equipment used in waterways (i.e. cofferdams, drill rigs, personal equipment, waders, etc.) would be decontaminated per CDFW protocol for removal of New Zealand mudsnails (NZMS) before use and after being removed from waterways. And 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.
- IS-4:** To minimize the opportunity of spreading tree pathogens, all pine or oak trees that would be cut down, and any trimmed branches or green woody material, would be chipped to a size equal to or less than 6-inches in diameter and left on-site.

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## 1.6 Mitigation Measures

The following mitigation measures were developed for this project. The project's Revegetation Plan, submitted as part of the Coastal Development Permit application, describes the on-site revegetation outlined in Mitigation Measure BR-2. The Draft Saunder's Landing Off-site Habitat Mitigation and Monitoring Plan, also submitted as part of the Coastal Development Permit application, provides details on the off-site mitigation outlined in Mitigation Measure BR-2.

- **Mitigation Measure BR-1:** A rootwad revetment would be constructed along approximately the north bank of Elk Creek at the bridge site to mitigate for direct and indirect impacts to special status fish and their habitats resulting from the installation of the clear water diversions, fish relocation efforts, and construction operations required to replace the Elk Creek Bridge. The rootwad revetment system would be constructed along approximately 160 feet of the north stream bank, using 9-12 conifer root wads (redwood, Douglas- fir, or potentially cypress) secured with anchor stones and header and footer logs. The revetment would be backfilled with soil and the bank would be densely planted during construction with biological revetment materials such as willow stakes, bundles, or fascines, and sod mats. As part of the rootwad revetment construction, a bankfull bench at approximately 12 feet in elevation would be constructed immediately behind the rootwads and above the buried trunks, and would tie into the downstream channel bank, extend upstream under the bridge, and conform to the existing floodplain upstream of the bridge. This bench would vary in width, between 1.5 and 17.9 feet, and would function as an intermediate floodplain bench during flows around the bankfull discharge.

The design of the bio-engineered rootwad revetment has been developed in conjunction with the California Department of Fish and Wildlife and would receive final approval by them as part of their permitting process. The revetment would be installed at the site following installation of the new bridge and removal of the temporary bridge.

- **Mitigation Measure BR-2:** Impacts to sensitive natural communities would be mitigated through a combination of on- and off-site riparian planting of native species to reach a mitigation ratio of 3:1 (3 acres of restoration/ 1 acre of impacts) or a negotiated equivalent amount of out-of-kind habitat preservation and enhancement. On-site revegetation would be completed in all project areas disturbed by construction. Based on the extent of the proposed impacts and



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current conditions on site, a 1:1 mitigation ratio is anticipated be completed on site. Additional mitigation required to reach a mitigation ratio of 3:1 would be implemented on site to the extent practicable and then as necessary at the Saunder's Landing parcels. The Saunder's Landing Off-site Habitat Mitigation and Monitoring Plan is currently under negotiation for approval of the final mix of preservation and enhancement activities with the permitting agencies

Restoration would be initiated in the spring season immediately following the end of the last construction season. Revegetation efforts would use 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. Replanting would be subject to a plant establishment period as defined by project approvals, which would require Caltrans to adequately water plants, replace unsuitable plants, and control invasive plant species as defined in the Revegetation Plan. Caltrans would also implement a program of invasive weed control in all areas of soil disturbance caused by construction to improve habitat for native species in and adjacent to disturbed soil areas within the project limits.

Temporary and permanent erosion control measures would be implemented immediately following construction as part of the project separate from this mitigation measure.

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## 1.7 Additional Minimization Measures from Federal Consultation

The following measures are required through the Section 7 consultation process with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS).

### U.S. Fish and Wildlife Service

The following measures from the USFWS Section 7 consultation will be incorporated into the project to avoid or minimize adverse project effects to TWGO and CRLF.

#### *Tidewater Goby*

1. Pre-construction Briefing: A Service-approved biologist (biologist) will be present during all major construction activities that may impact TWGO such as bridge demolition, dewatering, new bridge construction and riparian vegetation removal, and will implement the survey and monitoring duties outlined in this biological opinion. The biologist will provide a pre-construction briefing to project personnel on environmental permit conditions and requirements relative to each stage of the proposed project, including, but not limited to, work windows, construction site management, and how to identify the TWGO and report occurrences within the project area.
2. Pile Driving:
  - a. Hydroacoustic monitoring will be conducted during all construction activities that have the potential to produce impulsive sound waves within the water column, such as pile driving and hoe-ramming. In addition, heavy equipment used outside the wetted channel, must be operated at a distance as far as possible from suitable breeding habitat (i.e., the wetted channel) to avoid barotrauma injury to individual TWGOs or damage to TWGO nest burrows. The injury threshold for the cumulative sound exposure level (SEL) within the creek will be avoided by stopping work prior to reaching the SEL threshold for injury to fish weighing greater than 2 grams (g; 0.07 ounce [oz.]), which is 187 decibels (dB) SEL (Fisheries Hydroacoustic Working Group 2008, unpublished memo). The SEL threshold for injury to fish weighing less than 2 g, such as the TWGO, is 183 dB (Fisheries Hydroacoustic Working Group 2008, unpublished memo). Stopping work at 187 dB SEL (for listed salmonids) will minimize the amount of TWGO habitat that will be exposed to 183 dB SEL or greater and likely reduce impacts to TWGO within the action area.
  - b. During impact pile driving, the contractor will limit the number of strikes per day to the minimum necessary to complete the work and will limit the total number of



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hammer-strikes per day to stay below the SEL injurious to fish as mentioned above. Pile-driving activities will cease for the day if the sound levels approach specified thresholds. Impact pile driving, and hoe-ram operations will be limited to daylight hours only and will be followed by a minimum period of 12 hours with no impact pile driving to allow the SEL to reset to zero.

- c. If in-water pile driving is deemed necessary, Caltrans will require that the contractor first dewater the area using a clear water diversion (see measure below) or install a sound attenuation device while driving piles to minimize the extent to which the interim peak and SEL thresholds are exceeded for piles driven in water. Types of sound attenuation systems include, but are not limited to:
  - Confined bubble curtain.
  - Unconfined bubble curtain.
  - Isolation casings.
1. Stream Diversion and Dewatering: Stream diversion and cofferdam dewatering and fish guiding and fish rescue and relocation from within de-watered areas will occur during the proposed in-water work window (between June 15 and October 15) by a Service-approved biologist. Fish guiding and fish rescue and relocation will commence as soon as possible following stream diversion or cofferdam closure and commencement of dewatering or prior to implementing pile driving or hoe-ram demolition activities. Nets used for rescue and relocation of TWGO must have a small enough mesh size (0.125 inch [in.] or smaller) to capture TWGO and minimize injury. Water pumps will be screened with wire mesh screens no larger than 0.125 in. to prevent TWGO from entering the pump system. Captured TWGO will be released to suitable habitat in Elk Creek downstream from the action area.

### **California Red-legged Frog**

1. Worker Environmental Awareness Training: A biologist will implement the survey and monitoring duties outlined in this biological opinion including delivery of a Worker Environmental Awareness Training Program for all construction workers that may work within suitable CRLF habitat. Awareness training will include a brief review of the biology of the CRLF and a description of the conservation measures below, which must be followed by all construction personnel.

- 
2. **Biological Monitor:** The biologist will appoint a biological monitor (monitor) who will be on-site during ground-disturbing activities and any other time when project activities could reasonably result in adverse effects to CRLF. The role of biologist and monitor may be assigned to a single individual. The biologist or the monitor will notify the Resident Engineer and the Service if a CRLF at any life stage (i.e., eggs, larvae (“tadpoles”), sub-adults (approximately 7 months to 3 years old), and sexually mature adults (3–4 years old) is encountered within the action area during project activities. Through the Resident Engineer or their designee, the biologist or monitor will be given the authority to communicate with all project personnel to ensure that potential impacts to CRLF are minimized and the conservation measures of this biological opinion are fully implemented. The biologist or monitor will have the authority to stop work that may result in adverse effects to CRLF that are not already addressed by these conservation measures. If the monitor exercises this authority, the Service will be notified by telephone and e-mail within 48 hours.
  3. **CRLF Surveys:** Within 24 hours of the initiation of ground-disturbing activities, the biologist will survey the project area for all life stages of the CRLF. The biologist (or biologists if more than one Service-approved biologist is available) will investigate all potential cover sites; this includes thorough investigation of mammal burrows, rocky outcrops, appropriately sized soil cracks, tree cavities, and debris within at least 50 ft. of proposed ground-disturbing activities, including vegetation alteration and removal. Surveys must be conducted immediately prior to ground-disturbing activities to lower the probability of one or more adult or sub-adult CRLFs moving into or laying eggs within the project area after a survey has already been conducted. If any life stage of the CRLF is found during pre-work surveys, construction activities will cease in the action area until the biologist can safely capture, handle, and relocate the CRLF(s) to nearby suitable habitat well outside the action area; or to suitable habitat within the action area that will not be physically impacted by construction activities. The biologist will subsequently notify the Service of the number and life stage(s) of CRLFs captured, handled, and moved to nearby suitable habitat. Alternatively, CRLF encountered immediately prior to construction activities can be gently guided (i.e., by slowly walking toward the CRLF so it moves out of the area on its own) from the areas of impact by the biologist. Construction will not begin until the CRLF “self-relocates” to a safe location well outside the action area or to suitable habitat within the action area that will not be physically impacted by construction activities. If buckets are used to transport CRLF:



- 
- a. Buckets shall be cleaned and sanitized before and after every CRLF transport to limit exposure to the chytrid fungus and other potential CRLF pathogens.
  - b. Minimize the time CRLF are in the bucket.
  - c. Keep buckets in shaded areas or, if no shade is available, covered by forest canopy.
  - d. Limit the number of CRLF within a bucket and do not place potential CRLF predators (e.g., salmonids) in the same bucket.
  - e. Use aerators or replace the water in the buckets at least every 15 minutes with cold clear water from Elk Creek.
  - f. Release CRLF in an area upstream with adequate cover and flow refuge; downstream is acceptable provided the release site is below the influence of construction.
- 4. **Screening Water Pumps:** Water pumps will be screened with wire mesh screens no larger than 0.2 in. to prevent CRLF tadpoles, sub-adults, and adults from entering the pump system. Although pre-activity surveys may have detected no CRLFs, this measure is to ensure that CRLFs that were potentially missed during the survey are not harmed or killed by water pumps.
  - 5. **Trash Removal:** All food-related trash will be disposed of in closed containers and removed from the project area at least twice per week during the construction period. Food may attract CRLF predators, such as raccoons, to the project area.
  - 6. **Toxic Materials:** The contractor will implement a toxic materials control and spill response plan. Equipment refueling will only occur at staging areas to avoid fuel entering the floodplain of Elk Creek.
  - 7. **Vegetation Removal:** Vegetation alteration and removal will be done with the use of hand tools (including chainsaws) to the maximum extent feasible, but the use of heavy equipment is expected. If vehicles or equipment are used off the existing paved or graveled surface, the work area will first be enclosed by high visibility wildlife fencing (HVF; e.g., Ertec® or Animex® wildlife exclusion fencing) and surveyed for CRLF by the biologist immediately before and during the proposed work.

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8. CRLF Entrapment: To prevent the inadvertent entrapment of CRLF, all excavated, steep-walled holes or trenches more than 1-ft. deep will be covered at the close of each working day by plywood or similar materials. If it is not feasible to cover an excavation, one or more escape ramps constructed of earthen fill or wooden planks shall be installed. Before such holes or trenches are filled, they must be thoroughly inspected by the biologist for trapped CRLFs. If at any time a trapped CRLF is discovered, the biologist will immediately place escape ramps or other appropriate structures to allow the animal to escape; or the biologist can just move the frog(s) as detailed in measure 3 above.
  9. Wildlife Exclusion Fencing: Routes and boundaries within the action area will be clearly demarcated and bordered by HVF to exclude CRLFs from active work areas. High visibility wildlife exclusion fencing will be installed immediately adjacent to riparian areas and waters and will include a climber barrier to prevent CRLFs from entering the construction area from occupied habitat. The biologist will be onsite to survey for CRLFs before trees and shrubs are removed and prior to construction of the access roads and installation of HVF. The HVF will be:
    - a. Properly installed, trenched in and vertically stout, and regularly maintained.
    - b. At least three feet in height
    - c. The top 3–5 in. must be folded over and away from the construction area.
    - d. Fitted with escape funnel(s) to allow CRLFs trapped within the fenced area to escape to safe areas outside the action area.

## **National Marine Fisheries Service**

The Reasonable and Prudent Measures and their conditions included below are the result of Section 7 consultation with NMFS and the Biological Opinion issued for this project. These measures and their implementation conditions will be incorporated into the project to avoid or minimize adverse project effects to minimize take of California Central Coast coho and North Coast Steelhead.

### ***Reasonable and Prudent Measures***

1. Undertake measures to ensure that injury and mortality to steelhead resulting from fish relocation and dewatering activities is low;



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2. Undertake measures to minimize harm to steelhead from construction of the project and degradation of aquatic habitat; and
  3. Prepare and submit plans and reports regarding the effects of fish relocation, sound monitoring, construction of the project, and post-construction site-performance.

### ***Terms and Conditions for Implementation***

#### 1. The following terms and conditions implement Reasonable and Prudent Measure 1:

- a) Caltrans or the contractor will retain qualified biologists with expertise in the area of anadromous salmonid biology, including handling, collecting, and relocating salmonids; salmonid/habitat relationships; and biological monitoring of salmonids. Caltrans or the contractor shall ensure that all fisheries biologists be qualified to conduct fish collections in a manner which minimizes all potential risks to ESA-listed salmonids. Electrofishing, if used, shall be performed by a qualified biologists and conducted according to the *NOAA Fisheries Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act, June 2000*. See: <https://media.fisheries.noaa.gov/dam-migration/electro2000.pdf>
- b) The biologist will monitor the construction sites during placement and removal of cofferdams and channel diversions to ensure that any adverse effects to salmonids are minimized. The biologist will be on site during all dewatering events to capture, handle, and safely relocation salmonids to an appropriate location. The biologist will notify NMFS staff at 707-578-8553 or [andrew.trent@noaa.gov](mailto:andrew.trent@noaa.gov), one week prior to capture activities in order to provide an opportunity for NMFS staff to observe the activities. During fish relocation activities the fisheries biologist shall contact NMFS staff at the above number, if mortality of federally listed salmonids exceeds three percent of the total steelhead collected, at which time NMFS will stipulate measures to reduce the take of salmonids.
- c) Salmonids will be handled with extreme care and kept in water to the maximum extent possible during rescue activities. All captured fish will be kept in cool, shaded, aerated water protected from excessive noise, jostling, or overcrowding any time they are not in the stream, and fish will not be removed from this water expect when released. To avoid predation, the biologists will have at least two containers and segregate young-of-the-year from larger age classes and other potential aquatic predators. Captured salmonids will be relocated, as soon as possible, to a suitable

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instream location in which suitable habitat conditions are present to allow for adequate survival of transported fish and fish already present.

- d) If any steelhead or salmon are found dead or injured, the biological monitor will contact NMFS staff at 707-578-8553 or [andrew.trent@noaa.gov](mailto:andrew.trent@noaa.gov). All salmonid mortalities will be retained until further direction is provided by the NMFS biologist (listed above).
  - i) Tissue samples are to be acquired from each mortality prior to freezing the carcass per the methods identified in the NMFS Southwest Fisheries Science Center Genetic Repository protocols: Either a 1cm square clip from the operculum or tail fin, or alternately, complete scales (20-30) should be removed and placed on a piece of dry blotter/filter paper (e.g. Whatman brand). Fold blotter paper over for temporary storage. Samples must be air dried as soon as possible (don't wait more than 8 hours). When tissue/paper is dry to the touch, place into a clean envelope labeled with Sample ID Number. Seal envelope.
  - ii) Include the following information with each tissue sample using the Salmonid Genetic Tissue Repository form or alternative spreadsheet: Collection Date, Collection Location (County, River, Exact Location on River), Collector Name, Collector Affiliation/Phone, Sample ID Number, Species, Tissue Type, Condition, Fork Length (mm), Sex (M, F or Unk), Adipose Fin Clip (Y or N), Tag (Y or N), Notes/Comments.
  - iii) Send tissue samples to: NOAA Coastal California Genetic Repository, Southwest Fisheries Science Center, 110 McAllister Way, Santa Cruz, CA95060.

2. The following terms and conditions implement Reasonable and Prudent Measure 2:

- a) To ensure that the project is built as designed and contractors adhere to construction best management practices, monitoring will be performed during construction by skilled individuals. Monitors will demonstrate prior knowledge and experience in stream channel design and restoration, fish passage design, construction minimization measures, and the needs of native fish, including steelhead. Monitoring will be performed daily. The monitor(s) will work in close coordination with project management personnel, the project design (engineering) team, and the construction crew to ensure that the project is built as designed.

- 
- b) Any pumps used to divert live stream flow will be screened and maintained throughout the construction period to comply with NMFS' Fish Screening Criteria for Anadromous Salmonids (2000).
  - c) Construction equipment used within the river channel will be checked each day prior to work within the river channel (top of bank to top of bank) and, if necessary, action will be taken to prevent fluid leaks. If leaks occur during work in the channel, Caltrans or their contractors will contain the spill and removed the affected soils.
  - d) Once construction is completed, all project-introduced material must be removed, leaving the creek as it was before construction. Excess materials will be disposed of at an appropriate disposal site.

3. The following term and conditions implement Reasonable and Prudent Measure 3:

- a) Caltrans must provide a written report to NMFS by January 15 of the year following construction. The report must be submitted to the parties and addresses described in Section 1.c of the NMFS Biological Opinion. The report must contain, at a minimum, the following information:
- b) Project Construction and Fish Relocation Report- the report must include the following contents:
  - i) Construction Related Activities – The report(s) must include the dates construction began, a discussion of design compliance including: vegetation installation, and post-construction longitudinal profile and cross sections; a discussion of any unanticipated effects or unanticipated levels of effects on salmonids, including a description any and all measures taken to minimize those unanticipated effects and a statement as to whether or not the unanticipated effects had any effect on ESA-listed fish; the number of salmonids killed or injured during the project action; and photographs taken before, during, and after the activity from photo reference points.
  - ii) Fish Relocation – The report must include a description of the location from which fish were removed and the release site photographs; the date and time of the relocation effort; a description of the equipment and methods used to collect, hold, and transport salmonids; if an electrofisher was used for fish collection, a copy of the logbook must be included; the number of fish relocated by species; the number of fish injured or killed by species and a brief narrative of the circumstances surrounding



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ESA-listed fish injuries or mortalities; and a description of any problems which may have arisen during the relocation activities and as statement as to whether or not the activities had any unforeseen effects.

- c) Hydroacoustic Monitoring – A Hydroacoustic Monitoring Plan would be prepared by a qualified hydroacoustic specialist prior to construction. NMFS would be provided the Hydroacoustic Monitoring Plan for review prior to initiation of any pile driving or demolition work. 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.
- d) Post-Project Monitoring Reports and Surveys – Project reports and survey information will be sent to the address listed in section 1.c of the NMFS Biological Opinion, and must include the following contents:
  - i) Post Construction Vegetation Monitoring and Reporting – Caltrans must develop and submit for NMFS’ review a plan to assess the success of revegetation of the site. A draft of the revegetation monitoring plan must be submitted to NMFS (address specified in section 1.c of the Biological Opinion) for review and approval prior to the beginning of the in-stream work season, at each project location. Reports documenting post-project conditions of vegetation installed at the site will be prepared and submitted annually on January 15 for the first five years following project completion, unless the site is documented to be performing poorly, then monitoring requirements will be extended. Reports will document vegetation health and survivorship and percent cover, natural recruitment of native vegetation (if any), and any maintenance or replanting needs. Photographs must be included. If poor establishment is documented, the report must include recommendations to improve conditions.

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### ***Additional Avoidance and Minimization Measures***

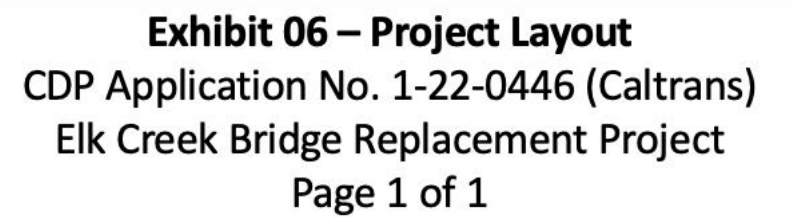
The following avoidance and minimization measures were developed in coordination with NMFS and would be included in the project Environmental Commitments Record and permit applications.

The Temporary Creek Diversion System Plan would adhere to the following:

- A cofferdam and/or bypass culverts or pipes, or a lined, non-erodible diversion ditch or stacked concrete block system would likely be used to divert flow around the dewatered area. The diversion would not result in a significant change to the flow velocity through the project area. The temporary creek diversion would be installed in a manner appropriate to prevent damage to downstream riparian vegetation or stream channel and provide for safe entry of fish and allow fish passage. To the extent possible, diversions would also be designed to maintain water depth within the culvert or constrained creek area such that it is similar to those water depths in the natural stream.
- If gravel is used to create cofferdams or gravel berms, only washed spawning-sized gravel would be used to construct the gravel berm, with any further specifications to be determined by permitting requirements. Push-up dams composed of stream substrate are not an approved isolation method.



**x**





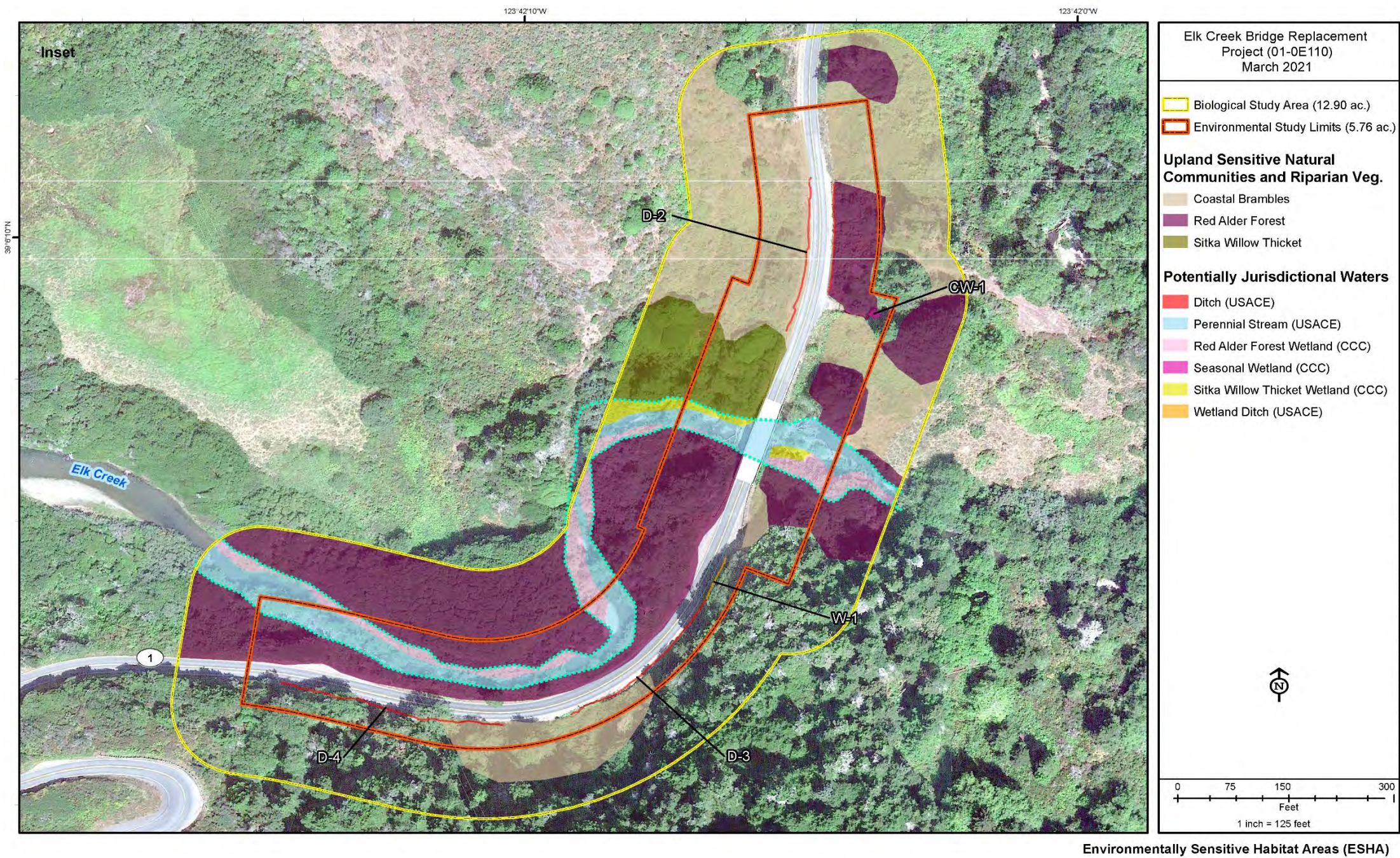


Figure 5. Environmentally Sensitive Habitat Areas (ESHA) in the Project Area

Exhibit 07 – Habitat Map

CDP Application No. 1-22-0446 (Caltrans)

Elk Creek Bridge Replacement Project

Page 1 of 1



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	Men	1	31.35		

PRELIMINARY DESIGN

REGISTERED CIVIL ENGINEER

DATE

FOR REVIEW ONLY

PLANS APPROVAL DATE

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OR AGENTS SHALL NOT BE RESPONSIBLE FOR  
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REGISTERED PROFESSIONAL ENGINEER

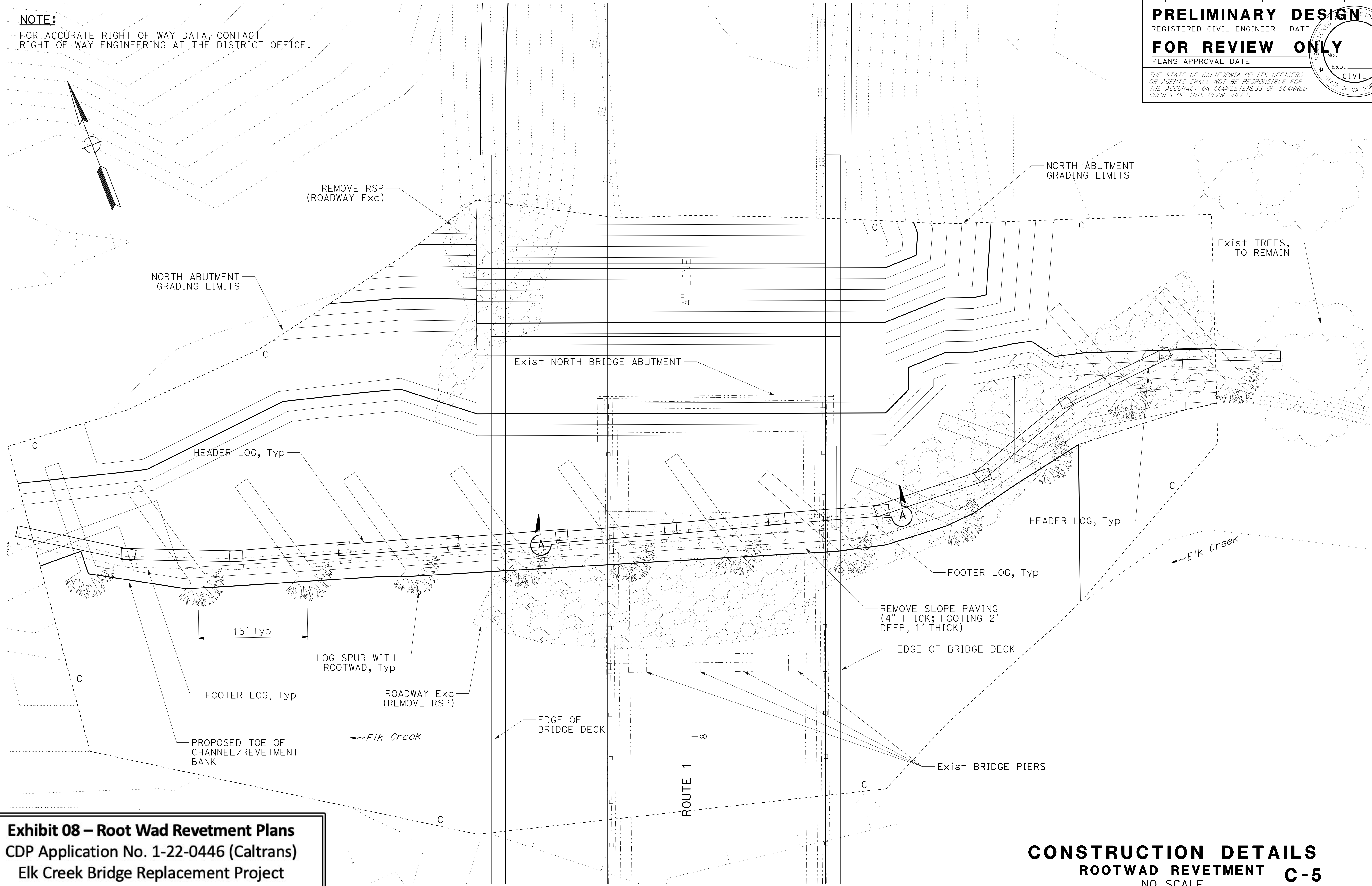
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CIVIL

STATE OF CALIFORNIA

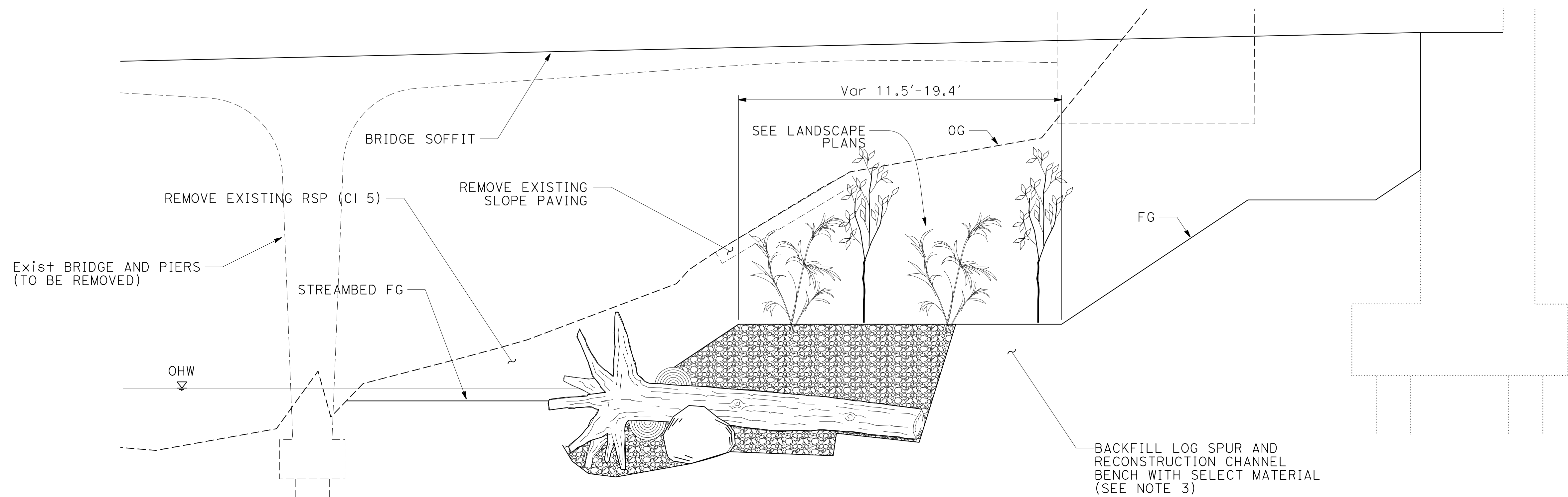
**NOTE:**  
FOR ACCURATE RIGHT OF WAY DATA, CONTACT  
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



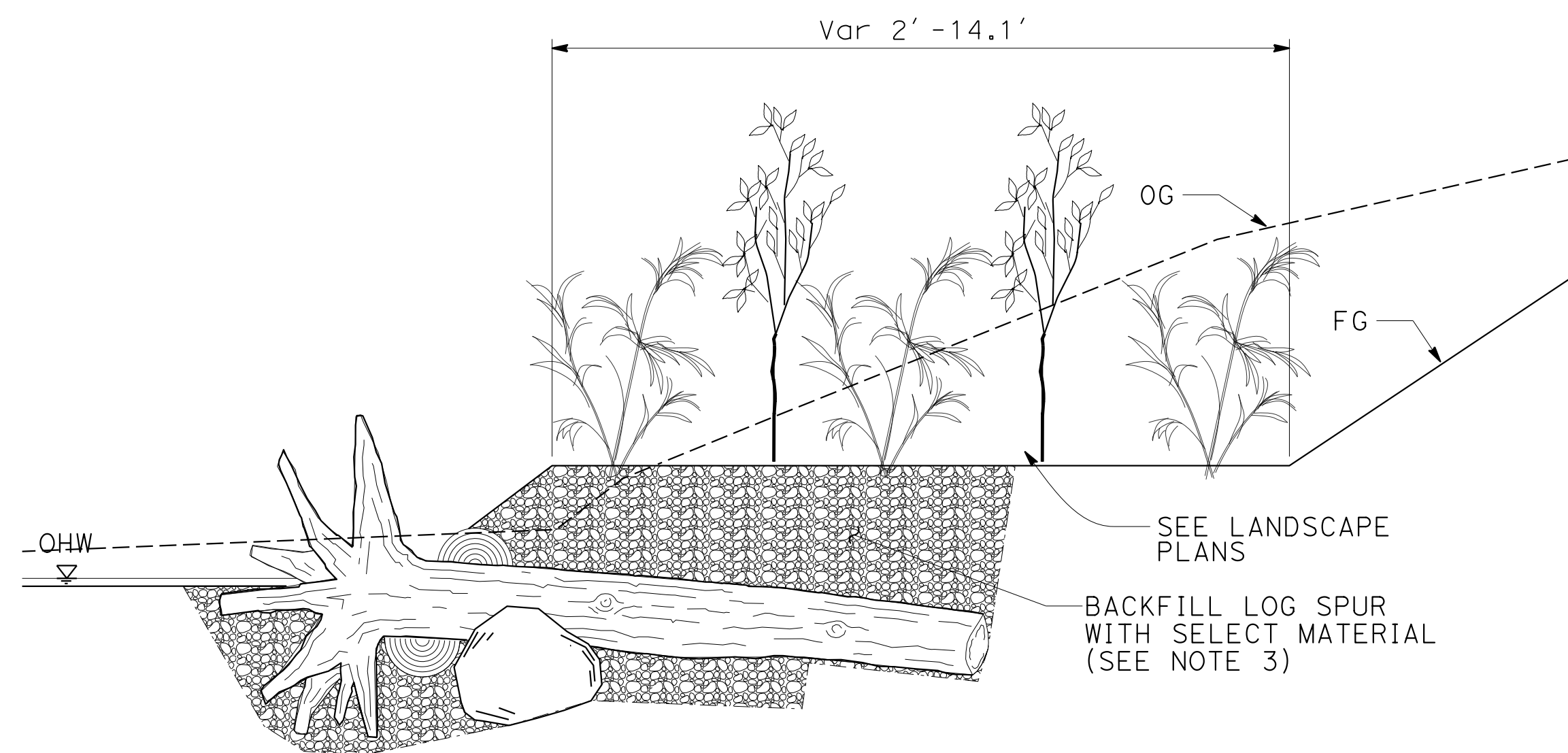
**Exhibit 08 – Root Wad Revetment Plans**  
CDP Application No. 1-22-0446 (Caltrans)  
Elk Creek Bridge Replacement Project  
Page 1 of 3

**CONSTRUCTION DETAILS**  
**ROOTWAD REVETMENT C-5**  
NO SCALE

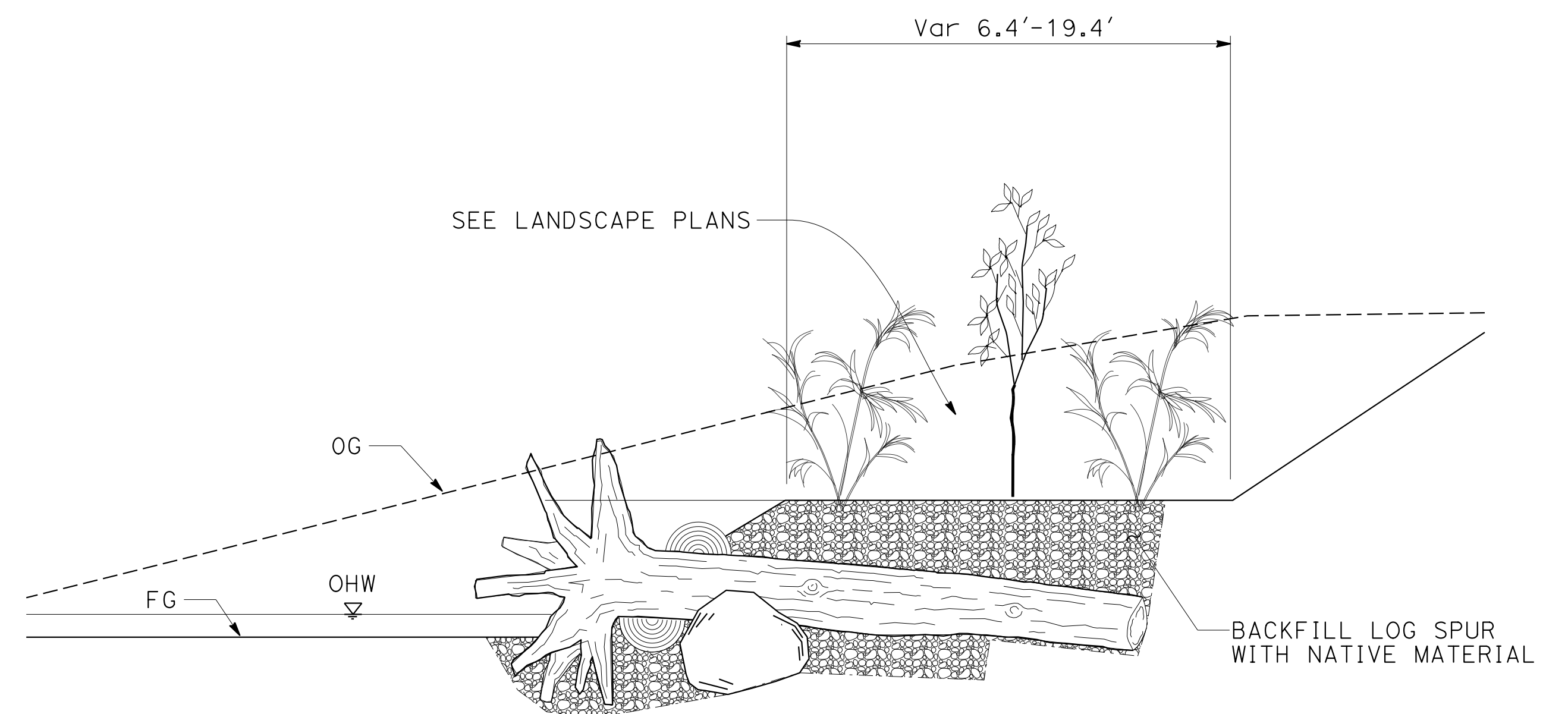
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01	Men	1	31.35		XX
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<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</p> </div> <div style="width: 45%; text-align: center;"> </div> </div>					



UNDER ELK CREEK BRIDGE



UPSTREAM OF ELK CREEK BRIDGE



DOWNSTREAM OF ELK CREEK BRIDGE

## ROOTWAD REVETMENT TYPICAL SECTIONS

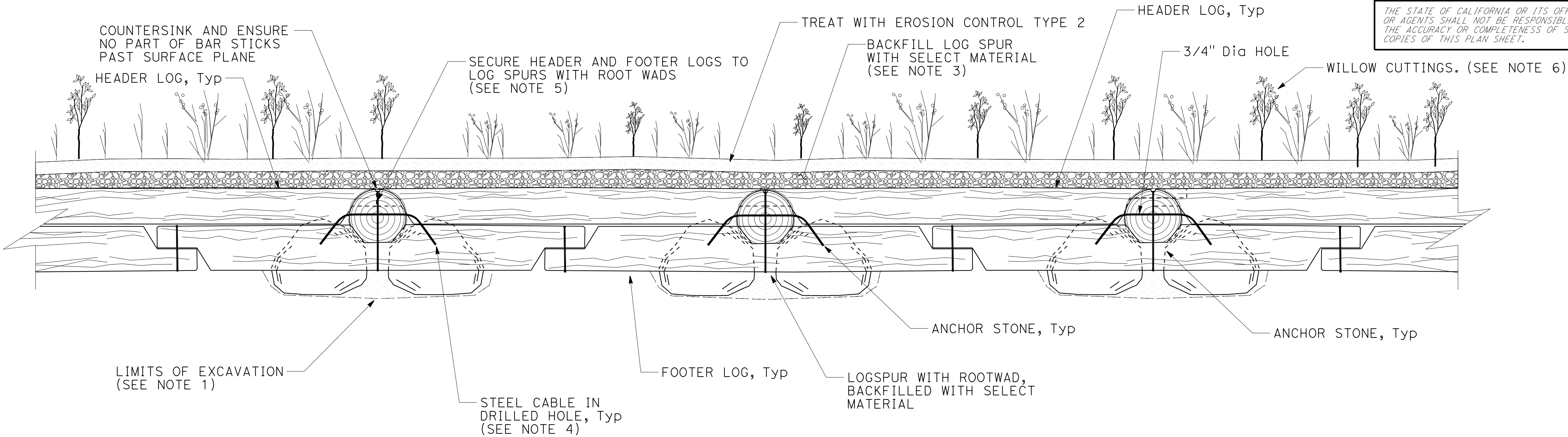
**CONSTRUCTION DETAILS**  
**ROOTWAD REVETMENT**  
NO SCALE

**C - 6**

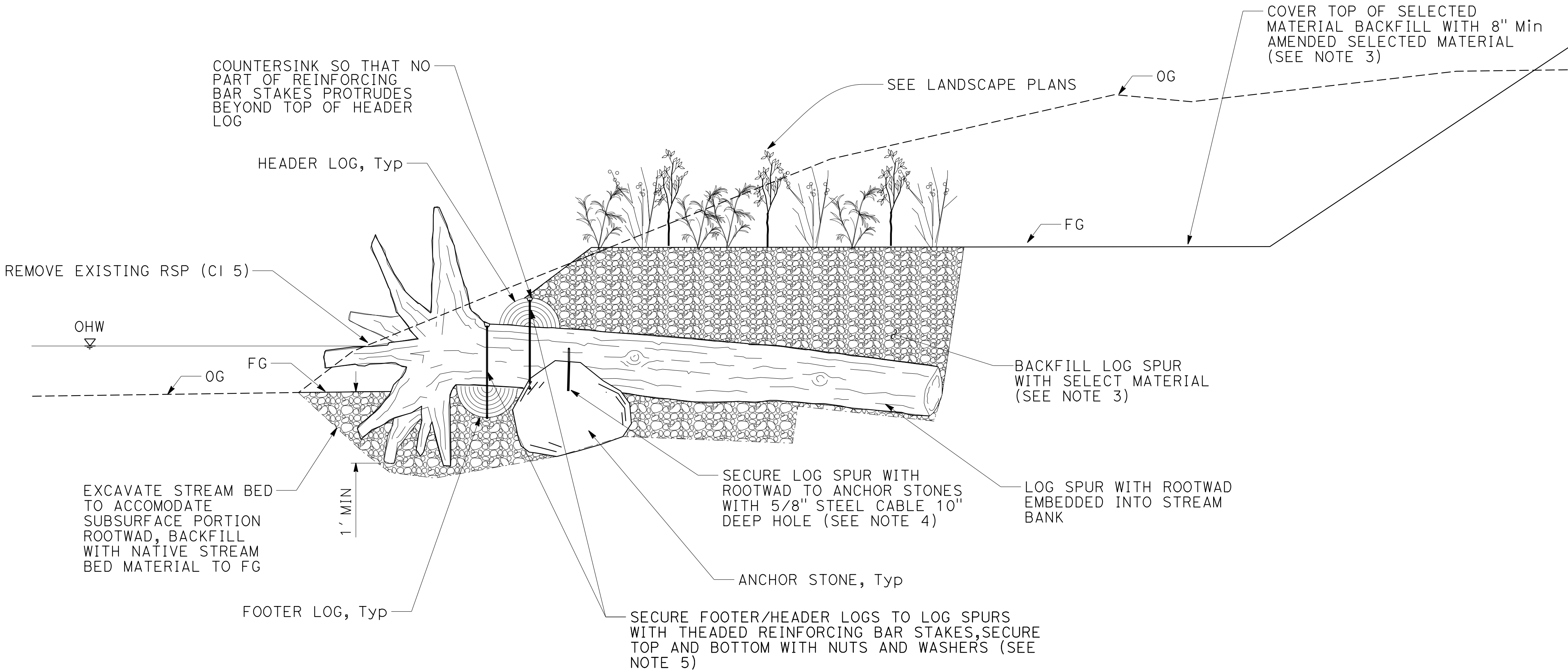


NOTE:

1. EXCAVATE AND STOCKPILE SELECTED MATERIAL (NATIVE MATERIAL) FROM LIMITS OF EXCAVATION FOR PLACEMENT OF ROOTWAD REVETMENT.
2. USE SELECT MATERIAL FOR BACKFILL BEHIND ROOTWAD REVETMENT.
3. COVER TOP OF BACKFILL WITH 8 INCHES OF AMENDED SELECT MATERIAL (MIX OF 20% COMPOST AND 80% SELECT MATERIAL)
4. FILL HOLE APPROXIMATELY 2/3 FULL WITH EPOXY AND INSERT CABLE INTO HOLE UNTIL IT REACHES BOTTOM.
5. CUT NOTCHES AT THE LOCATION WHERE THE LOG SPUR WITH ROOTWAD OVERLAPS THE FOOTER AND HEADER LOGS TO ENSURE A STABLE JOINT.
6. PLACE WILLOW CUTTING INTO COMPOST SOCKS IN CONJUNCTION WITH THE BACK FILLING OF ROOTWAD REVETMENT. TO BE INCLUDED IN LANDSCAPE PLANS.



SECTION A-A  
ROOTWAD REVETMENT



TYPICAL SECTION  
LOG SPUR WITH ROOTWAD

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	Men	1	31.35		

PRELIMINARY DESIGN

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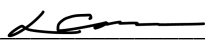
**ONSITE REVEGETATION PLAN**  
for the  
**Elk Creek Bridge Replacement Project**



**Mendocino County, State Route 1, Post Mile 31.4**  
**EA 01-0E110 / EFIS 0113000125**  
**May 2022**



**STATE OF CALIFORNIA**  
Department of Transportation

Prepared By:   
Loriel Caverly, Revegetation Specialist  
North Region Environmental—Revegetation North

Date: 5/3/2022

Approved By:   
Robert Meade, Senior Environmental Planner  
North Region Environmental—Revegetation North

Date: 05/05/22





## 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 agencies 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:** Loriel Caverly  
1656 Union Street, Eureka, CA 95501 (707) 492-0118
- ii. **Senior Environmental Planner:** Robert Meade  
2031 Butte St., MS 30, Redding, CA 96002 (573) 619-4518
- iii. **Project Biologist:** Dawn Graydon  
1656 Union Street, Eureka, CA 95501 (707) 815-6246
- iv. **Project Manager:** Jeff Pimentel  
1656 Union Street, Eureka, CA 95501 (707) 834-9529

## 2) Project Location

The California Department of Transportation proposes the Elk Creek Bridge Replacement Project (hereinafter the project). The project would replace the existing bridge which spans Elk Creek, located on State Route (SR) 1 at post mile 31.4, near the community of Elk in Mendocino County. The project footprint would extend from PM 31.20 to PM 31.46 (Appendix A–Figure 1).



### **3) Construction Activities and Anticipated Impacts**

#### **a) Construction Activities**

The existing bridge over Elk Creek is a 122-foot-long, three-span, cast-in-place reinforced concrete bridge with two 11-foot-wide lanes and 2-foot-wide shoulders. The proposed new bridge would be a 140-foot-long, cast-in-place/pre-stressed concrete box girder and full-span bridge with two 12-foot-wide lanes, 6-foot-wide shoulders and a 6-foot-wide separated pedestrian and bicycle walkway on the west side of the bridge.

To mitigate for direct and indirect impacts to special status fish a root wad revetment would be constructed along approximately 167 feet of the north bank of Elk Creek at the bridge site. This revetment would replace rock slope protection installed in 2016 and would be constructed using 10 to 12 conifer root wads. The root wads would be secured with anchor stones and header and footer logs, and the revetment would be backfilled with soil. The bank of the revetment, with a 1.5:1 slope and a flat bench at approximately 12 feet in elevation, would tie into the downstream channel bank and extend upstream beyond the bridge. The upstream end of the revetment would conform to the existing floodplain and the existing rock slope protection. The revetment bench, which would vary in width between 1.5 and 17.9 feet, would be constructed behind the root wads to function as an intermediate floodplain during flows around the bank-full stage. The revetment bank would be densely planted during construction with biological revetment materials such as willow stakes, bundles, or fascines, and sod mats.

#### **b) Anticipated Impacts**

The proposed project would result in approximately 0.190 acre of temporary impacts, 0.907 acre of temporal impacts, and 0.197 acre of permanent impacts to environmentally sensitive habitat areas (ESHAs) and Waters of the U.S. and State. Impacts would result from the following construction activities:

- i. Cut and fill for construction of both the temporary bridge, new bridge abutments, and roadway widening
- ii. Vegetation removal and grading required for construction of the temporary access road(s), expansion of the bridge deck, and installation of the root wad revetment
- iii. Minor temporary and permanent increase in shading from the debris containment system and the new bridge structure

- iv. Temporary fill and localized turbidity associated with installation and maintenance of the stream diversions and bridge demolition

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.

Table 1 below summarizes the estimated net impacts to Waters of the U.S. and State, jurisdictional wetlands, and riparian habitat. Figure 2 in Appendix A shows the anticipated areas of impact. As addressed in the Natural Environment Study (NES), the riparian habitat was classified as upland riparian habitat in the upland areas and coastal wetland riparian habitat where it fell below the ordinary high-water mark (OHWM) of the creek. The amount of actual impact may be less than anticipated, depending on access needs for construction activities.



**Table 1. Estimated net impacts on sensitive natural communities, aquatic resources, and riparian areas associated with the project**

Habitat Type	Potential Jurisdiction/ Classification		Impact Type and Area (acres)			
	WOTUS*	ESHA**	Temporary	Temporal	Permanent	Total
<i>Alnus rubra</i> - Red Alder Forest Alliance		x	0	0.500	0.048	<b>0.548</b>
<i>Alnus rubra</i> - Red Alder Forest Alliance Wetland (riparian below OHWM)	x	x	0	0.004	0	<b>0.004</b>
<i>Salix sitchensis</i> - Sitka Willow Thicket		x	0	0.133	0.036	<b>0.169</b>
<i>Salix sitchensis</i> - Sitka Willow Thicket (riparian below OHWM)	x	x	0	0.030	0.001	<b>0.030</b>
<i>Rubus (parviflorus, spectabilis, ursinus)</i> - Shrubland Alliance (Coastal Brambles) <sup>1</sup>		x	0	0.241	0.110	<b>0.351</b>
<i>Juncus patens</i> - Prov. Herbaceous Alliance Seasonal 3-Parameter Wetland Ditch (W-1)	x	x	0	0	0.002	<b>0.002</b>
Perennial Stream (Elk Creek)	x	x	0.190	0	0	<b>0.190</b>
<b>Total</b>			<b>0.190</b>	<b>0.908</b>	<b>0.196</b>	<b>1.294</b>

\* Waters of the U.S. (United States)

\*\* Environmentally Sensitive Habitat Area

<sup>1</sup> In August 2021, VegCAMP split the *Rubus* Shrubland Alliance (coastal brambles) into two alliances: Salmonberry-wax myrtle scrub (*Rubus spectabilis*-*Morella californica* Shrubland Alliance) (G4 S3) and salal-berry brambles (*Gaultheria shallon*-*Rubus (ursinus)* Shrubland Alliance) (GNR S4). Since vegetation mapping for this project was completed prior to this change, this document continues to use the previous alliance designation of coastal brambles. The *Rubus* Shrubland Alliance and salmonberry and thimbleberry associations included within this alliance are still considered sensitive.

#### 4) Revegetation Goals

*The revegetation goals include:*

- a) Support the creation of a seasonal 3-parameter wetland by planting with self-sustaining, native plants appropriate to the region and habitat to offset the permanently impacted 3-parameter wetland.
- b) Restoration of temporal loss of function-affected upland riparian (above OHWM) and wetland riparian (below OHWM) forest by replanting with self-sustaining, native plants appropriate to the region and habitat.
- c) Restoration of Coastal ESHA *Rubus* Shrubland Alliance (coastal brambles) by replanting with self-sustaining, native plants appropriate to the region and habitat.
- d) Establish riparian tree, shrub, and herb species on the root wad revetment bench and support the establishment of willow stakes or bundles on the revetment bank as feasible.
- e) Remove the invasive species Cape ivy (*Delairea odorata*) in the project area to the greatest extent feasible.

#### 5) Summary of Revegetation Activities

*Revegetation activities will include:*

a) *Erosion Control*

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

***b) Plant Species and Quantities***

Revegetation will be conducted using California native, regionally- and habitat-appropriate 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 in Tables 2, 3, and 4 with species and quantities intended to closely resemble what is currently present. Installed container plants or cuttings will be regionally appropriate and sourced from Mendocino or Sonoma counties, within five miles of the coast.

In addition, natural vegetation recruitment (volunteers) and resprouting native vegetation will be incorporated into planting considerations and 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, if needed, and monitored for continued survival and re-establishment.



**Table 2. Potential planting palette for onsite upland and wetland riparian revegetation areas**

Scientific Name	Common Name	Quantity needed for initial planting	Planting Densities
Trees			
Abies grandis	grand fir	To be determined	8 to 12 feet on center
Alnus rubra	red alder		
Pseudotsuga menziesii var. menziesii	Douglas-fir		
Salix lasiandra var. lasiandra	Pacific willow		
Salix sitchensis	Sitka willow		
Sambucus racemosa var. racemosa	red elderberry		
Shrubs			
Baccharis pilularis ssp. consanguinea	coyote brush	To be determined	6 to 8 feet on center
Ribes sanguineum var. glutinosum	flowering currant		
Rubus parviflorus	thimbleberry		
Rubus ursinus	California blackberry		
Sambucus racemosa var. racemosa	red elderberry		
Vaccinium ovatum	evergreen huckleberry		
Herbs and Ferns			
Athyrium filix-femina var. cyclosorum	Western lady fern	To be determined	3 to 4 feet on center
Carex obnupta	slough sedge		
Eriophyllum staechadifolium	seaside wooly sunflower		
Heracleum maximum	common cow parsnip		
Juncus effusus ssp. pacificus	Pacific rush		
Maianthemum stellatum	starry false lily of the valley		
Polystichum munitum	sword fern		
Woodwardia fimbriata	Giant chain fern		

**Table 3. Potential planting palette for root wad revetment area**

<i>Scientific Name</i>	<i>Common Name</i>	<i>Quantity needed for initial planting</i>	<i>Planting Densities</i>
<b>Revetment Planting</b>			
<i>Alnus rubra</i>	red alder	To be determined	2 to 5 feet on center
<i>Carex obnupta</i>	slough sedge		
<i>Juncus effusus</i> ssp. <i>pacificus</i>	Pacific rush		
<i>Salix lasiandra</i> var. <i>lasiandra</i>	Pacific willow		
<i>Salix sitchensis</i>	Sitka willow		

**Table 4. Potential planting palette for wetland creation area**

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

**c) *Proposed Disturbed Soil Area Planting***

The planting areas will include all areas of ground disturbance and vegetation removal within the existing Caltrans right of way. To account for safety and maintenance, tree planting will occur outside of the “clear recovery zone”—which is a required site specific, tree-planting setback from the white fog line on the traveled road surface. The Revegetation Specialist will confirm setback distance with Traffic Safety before planting trees. 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 at the time of planting by a Caltrans Revegetation Specialist. The total planting area will encompass approximately 1.03 acres as detailed in Table 5. Please see Figure 3 for a mapped representation of these areas.

**Table 5. Approximate areas for each planting habitat type**

Habitat Type	Area (square feet)	Area (acres)
Upland Riparian Forest	25,102	0.576
Coastal Wetland Riparian Forest	1,108	0.025
Coastal Bramble	17,766	0.407
Revetment	796	0.018
3-Parameter Wetland	65	0.001
<b>Totals</b>	<b>44,837</b>	<b>1.027</b>

**d) *Proposed Revetment Planting***

- i) ***Revetment Bank:*** The bank of the revetment will be planted using various methods including willow stakes, bundles and/or fascines, and sod mats. These plantings will be installed around the root wads and header and footer logs, with stakes ideally reaching the water table. Since willow stakes, bundles, and fascines typically have a 50% survival rate, the willows in the revetment bank will be planted at twice the desired density at 2.5 feet on center. If there is less than 50% survival of the bank plantings, then dead or dying willows will be replaced wherever possible.
- ii) ***Revetment Bench:*** The revetment bench area will be planted with riparian tree, shrub, and herbaceous species after the completion of construction. There will be a heavy emphasis on willows, red alder, Pacific rush, and slough sedge installation.



e) **Proposed 3-Parameter Wetland Creation:** To address impacts to a 65-square foot 3-parameter wetland ditch, a 3-parameter wetland, of at least 65-square feet, will be constructed in the southeast quadrant of the bridge. The area will be seeded during construction with appropriate wetland seed and augmented with container plants and/or plugs if needed. Potential plant species to be installed are listed in Table 4 and a mapped location is represented on Figure 3.

f) **Proposed Ivy Control Area:** The southeast quadrant and a small portion of the southwest quadrant of riparian habitat adjacent to the bridge are infested with Cape ivy (*Delairea odorata*). This species is considered to have High ecological impact by the California Invasive Plant Council (Cal-IPC 2006). There is approximately 0.25 acre of infestation. As habitat enhancement, the Caltrans revegetation specialist will direct work to remove this species to the greatest extent feasible for the duration of the maintenance and monitoring period. Treatment will be performed by mechanical means and no herbicides will be used. Treatment methods will follow the *Weed Workers' Handbook* recommendations on eradication, containment, and retreatment (Watershed Project and California Invasive Plant Council, 2004).

Currently, Cape ivy is covering a rich understory including sword fern and thimbleberry. After the initial treatment, the revegetation specialist will assess if the surviving understory could be augmented by supplemental planting. If needed, additional plants will be installed. If surviving understory species and trees are densely growing, then no new plants will be installed to avoid overcrowding.

g) **Planting and Maintenance Contract and Duration:** During construction, biological revetment materials for the revetment bank (such as willow fascines, stakes, and/or bundles, and sod mats) will be installed around the root wads and header and footer logs of the revetment by the contractor with oversight by the Landscape Architect, Revegetation Specialist, Resident Engineer, and/or Project Biologist.

Revegetation planting of all other areas, and maintenance for the five-year maintenance and monitoring period, including watering, weeding, and protecting resprouting native vegetation, will be contracted to and performed by the California Conservation Corps (CCC) or other qualified contractor, with oversight by a Caltrans Revegetation Specialist. This work includes the installation of plants in the upland and coastal wetland riparian areas, the coastal brambles, the created 3-parameter wetland, and the revetment bench.

- h) Cultural/Tribal Resources:** The Caltrans Revegetation Specialist has coordinated with the project Archaeologist to confirm there are no cultural concerns regarding proposed revegetation activities in the vicinity of the proposed planting or Cape ivy treatment areas.

## 6) Implementation and Maintenance Schedule

- a) Planting of the revetment bank** will occur during the construction period. Willow stakes, bundles, and or fascines will be replaced and added as needed during the five-year revegetation monitoring period. To minimize plant stress, replacement planting will be installed at a time when the plants are dormant (i.e., typically November–March).
- b) 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.
- c) Planting of the disturbed soil areas and the revetment bench** will occur within approximately one year from completion of construction. Installation and replacement planting, if needed, will occur during the dormant season, generally one year after initial planting.
- d) Cape ivy removal** will occur once before construction begins to reduce its spread within the project area. After construction, Cape ivy resprouts will be removed twice yearly during weeding events for the duration of the five-year maintenance and monitoring period.
- e) 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. Per a requirement from the NCRWQCB, the last two years of the monitoring period will not have supplemental watering.

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 the success criterion is met, watering will occur for two years after planting for the supplemental plants only. Because the supplemental planting is a minimal percentage of plants, 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.

- f) **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 efforts will also include Cape ivy removal as discussed above.

## 7) **Monitoring Methods, Success Criteria, and Reporting**

- a) **Photo points:** Prior to construction, reproducible photo points will be established at the planting areas and Cape ivy treatment locations. Photo points will visually indicate native plant survival, re-establishment of riparian vegetation, revegetation success, and a reduction in cover of Cape ivy over the five years of monitoring. Photo points may be re-established prior to or at the time of planting to account for changes in the landscape due to construction and to provide the best view of revegetation areas.
- b) **Preconstruction monitoring:**
- i) **Percent cover and/or number of woody riparian plants cut during construction:**  
The Revegetation Specialist will coordinate with Caltrans Construction staff, the Environmental Construction Liaison (ECL), and the Landscape Architect to obtain the number of woody riparian plants cut for construction activities. Counts of cut riparian trees and large shrubs (e.g., red elderberry or shrubby willows) will occur prior to ground-disturbing construction activities and will be conducted by Construction staff, the ECL, the Biologist, the Landscape Architect, and/or the Revegetation Specialist. In riparian forest areas where it may not be feasible to obtain individual counts, percent cover will be recorded. Absolute percent cover of coastal brambles in areas to be impacted will also be recorded. These requirements will be inserted into the Environmental Commitments Record (ECR) to ensure the Project Development Team, Construction staff, and the ECL are made aware of this effort.
  - ii) **Cape ivy pre-removal absolute percent cover** will be recorded before initial treatment occurs.



**c) Post-construction Monitoring**

- i. ***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 riparian 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 a 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. Where appropriate, absolute percent cover of willow thickets and/or coastal brambles revegetation will be recorded.
- ii. ***Absolute percent cover of Cape ivy:*** Absolute percent cover of Cape ivy resprouts will be assessed using ocular estimates to ensure treatment is on the trajectory towards meeting the Cape ivy success criterion (discussed below).
- iii. ***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.

**d) Schedule:**

- i. **Pre-construction Monitoring:** The number of woody trees and large shrubs (e.g., red elderberry and shrubby willows) cut will be recorded before ground-disturbing activities.
- ii. **Post-construction Monitoring:** Caltrans will monitor annually<sup>2</sup>. Survival counts, percent cover assessments, photo points, and wetland parameters will be monitored to assess progress toward the success criteria and identify remedial or adaptive management measures that may be required.
- iii. **Wetland Parameter Monitoring:** Monitoring for hydrophytic vegetation indicators and wetland hydrology indicators will occur annually during the growing season, when the plants have fully leafed out (i.e., typically no earlier than late spring) and leaves have not begun to go dormant (i.e., typically no later than late summer). Hydric soil field indicators will be monitored in Year 5 during the growing season.
- iv. **Year 5 Monitoring:** Final monitoring will assess whether the success criteria have been met.

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<sup>2</sup> First year monitoring may take place in the same calendar year as the initial planting as long as plant installation occurs before March 1<sup>st</sup>.

- 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 end of summer.

***e) Success Criteria and Potential Early Release***

***i) Year 5 Success Criteria***

- (1) In the upland riparian forest revegetation areas, at least 100% of the number of trees and large shrubs (e.g., red elderberry and willow shrubs) that were cut for construction activities will be replaced by living installed, volunteer, and/or resprouting native woody plants.
- (2) In the wetland riparian areas, 100% of the number of trees and large shrubs will be replaced, except in the case of natural erosive stream impacts which may wash away installed vegetation. If this occurs, the area will be revegetated as much as possible, with no penalty for hydraulic impacts to vegetation.
- (3) In the root wad revetment bench revegetation areas, at least 85% of the number of native woody plants that were installed in Year 1 will be alive in Year 5. Volunteer and resprouting native woody species will also be counted. If the growth is so dense that counting individual plantings is not feasible, then the Year 5 success criteria will be 30% absolute cover of this area (see Figure 4 for percent cover charts). The success criterion(a) for the root wad revetment bank plantings, and the general success of the root wad revetment as a structure, will be addressed in the Root Wad Revetment Monitoring Plan which is in progress and will be reviewed and agreed upon by permitting agencies prior to acceptance. The Revegetation Specialist and Project Biologist will coordinate to ensure the monitoring and success criterion(a) are completed and achieved.
- (4) The Cape ivy treatment areas in the southeast and southwest quadrants will have equal to or less than 5% cover of Cape ivy. Recovering riparian tree, shrub, and herbaceous species will be present. If Caltrans is not able to access the entire population of Cape ivy, then the 5% success criterion will only be applied to removal areas and not the adjacent areas of ongoing infestation.



(5) Herbaceous wetland creation

- (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 or criteria that were met.

**f) Revegetation Monitoring Reports**

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 ensure success. Monitoring reports will also include photo points. The final monitoring report will discuss whether the success criteria were met and if remedial actions are needed, or revegetation is considered complete. Revegetation monitoring data and photos for Years 2 and 4 will be saved to the project file and made available upon request.

## **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 reporting to discuss success criteria issues, propose solutions, and determine the best course of action for whatever criteria are not being met. 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).

## 9) References

- California Invasive Plant Council. 2006. *California Invasive Plant Inventory*. Cal-IPC Publication 2006-02. California Invasive Plant Council. Berkeley, CA. Available: [www.cal-ipc.org](http://www.cal-ipc.org)
- CDFW/VegCAMP. 2021. Wildlife and Habitat Data Analysis Branch. *California Natural Community List*. Vegetation Classification and Mapping Program. Sacramento, California. Available: <https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities>
- Jepson Flora Project (eds.) 2022. *Jepson eFlora*, <https://ucjeps.berkeley.edu/eflora/> [accessed on Apr 29, 2022].
- The Watershed Project and California Invasive Plant Council. 2004. *Weed Workers' Handbook*. California Invasive Plant Council. Berkeley, CA. Available: [www.cal-ipc.org](http://www.cal-ipc.org)
- U.S. Army Engineer Research and Development Center – Environmental Laboratory. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)*



## APPENDICES

**Appendix A. Project Maps**

**Appendix B. Site Photos**



## Appendix A. **Project Maps**

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U.S. Route 1/ Elk Creek Bridge Replacement Project  
Environmental Assessment / Mitigated Negative Declaration  
California Department of Transportation  
CTC Submittal Package

EA 0E110; EFIS 0113000125  
01-MEN-001 PM 31.4

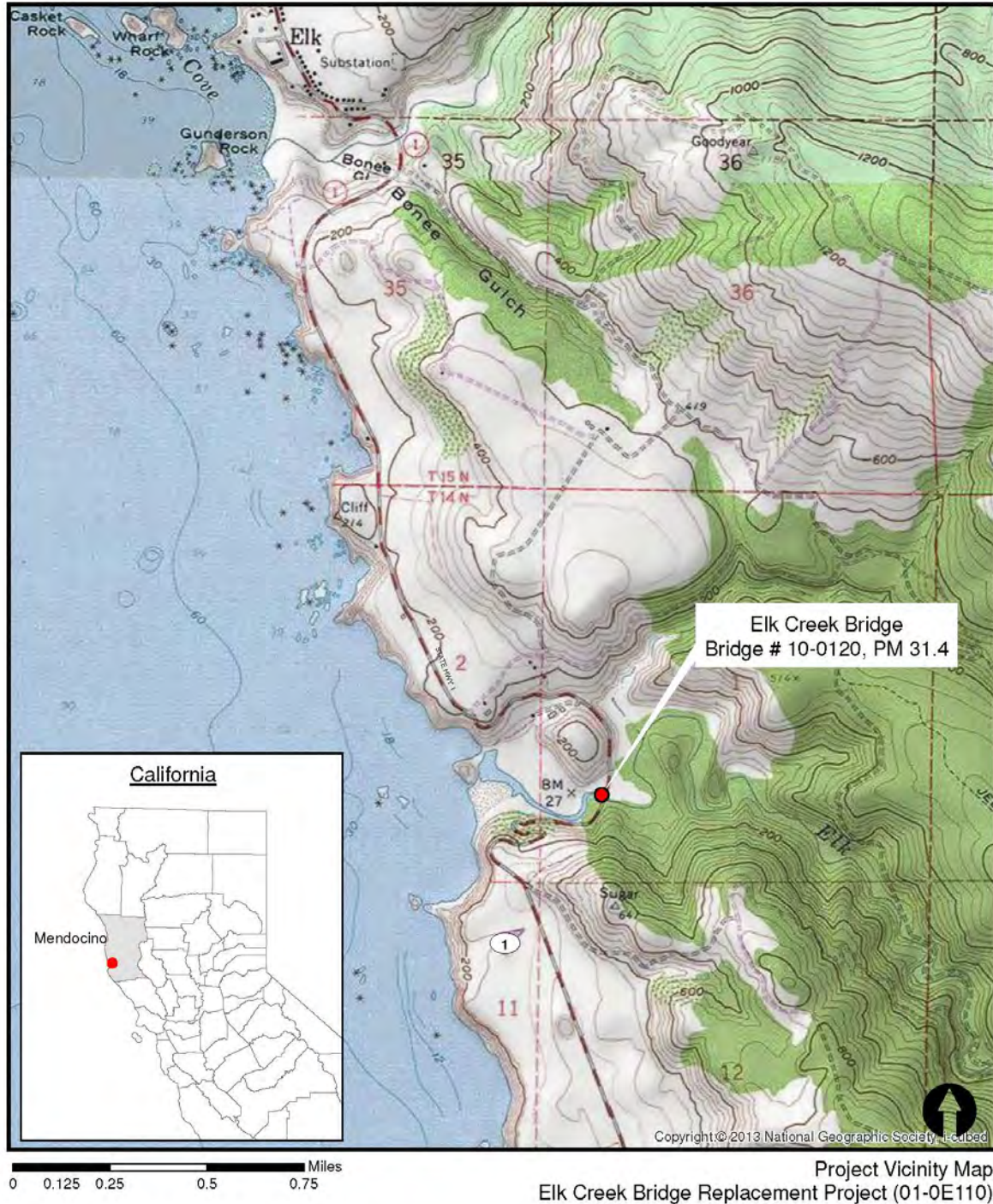


Figure 1. Project Vicinity





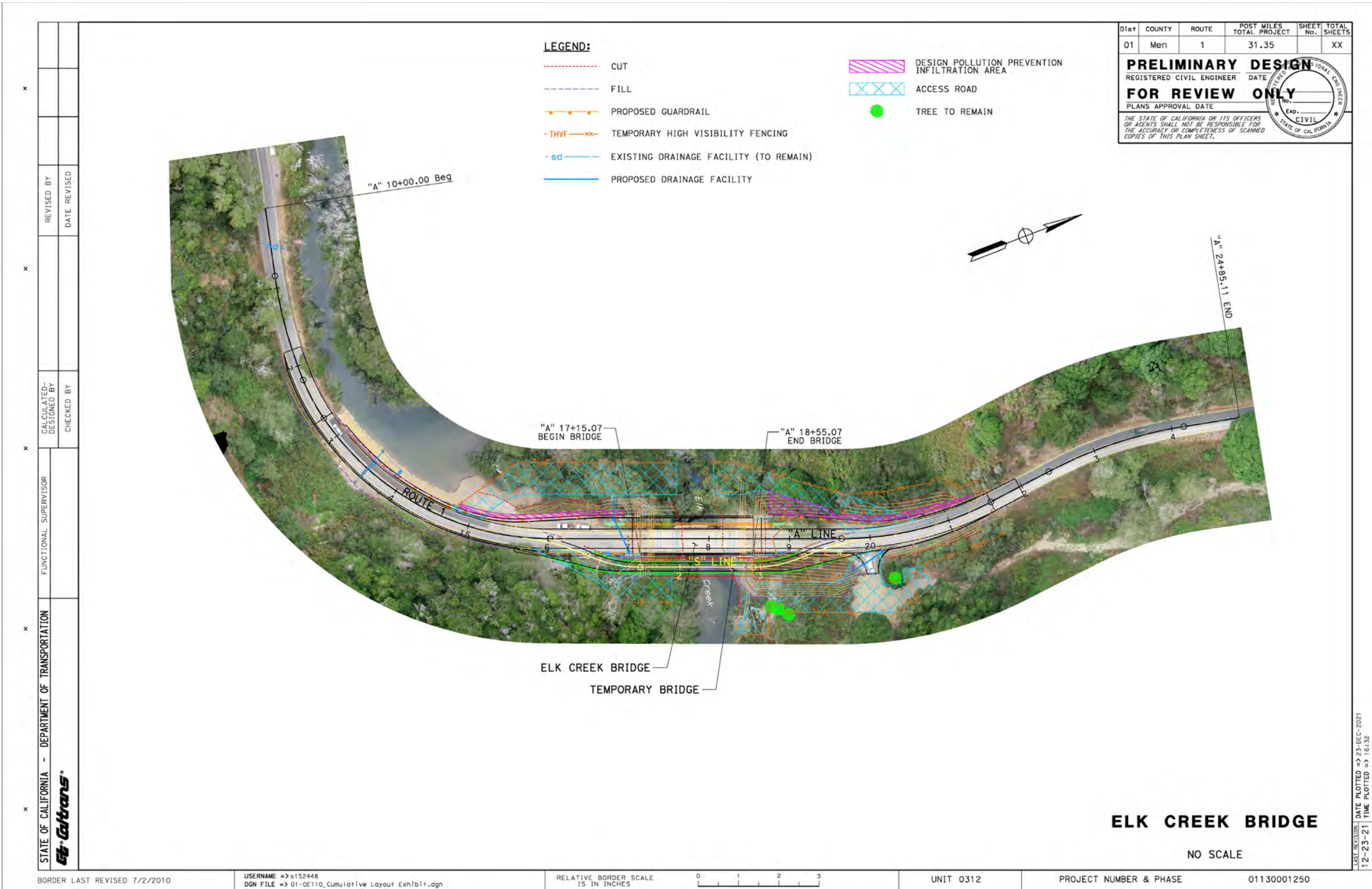


Figure 2. Anticipated impacts to riparian habitats and coastal brambles from access roads, new bridge abutments, and temporary bridge construction.







Figure 3. Potential revegetation areas and habitat types. Final planting areas may vary due to actual impact areas.



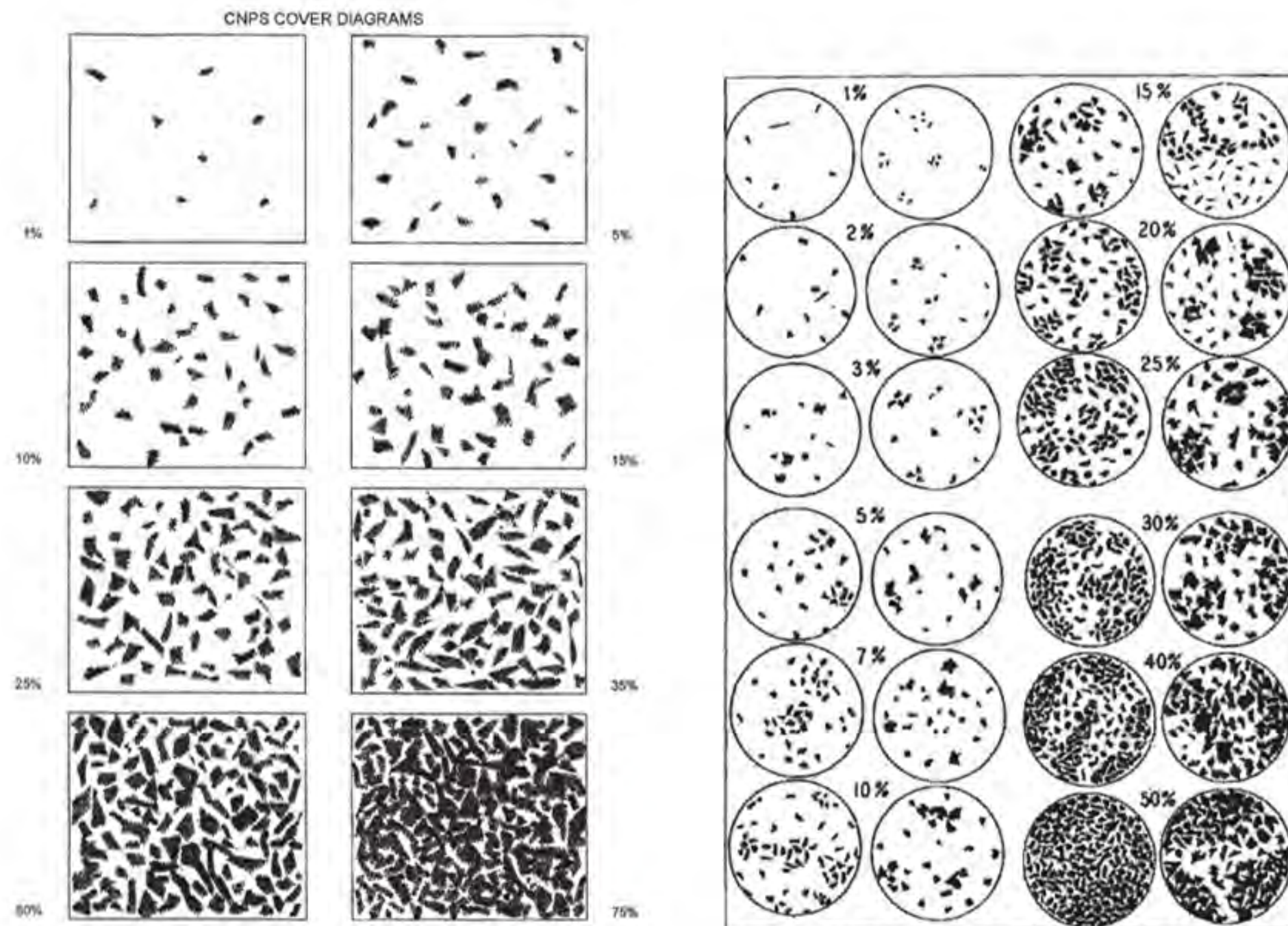


Figure 4. Percent Cover Diagrams

## Appendix B. **Pre-Construction Photographs**

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**Photo 1. View of northeast bank of creek, standing on the current bridge looking northeast.  
Date of Photo: September 20, 2021.**





**Photo 2. View of the northeast bank looking north from the southeast bank.  
Date of Photo: October 16, 2017.**



**Photo 3. View of northeast and southeast banks looking south from the north end of the bridge.  
Date of Photo: November 20, 2021.**





**Photo 4.** View of the southeast bank showing some of the Cape ivy infestation, looking south from the bridge. Date of Photo: January 6, 2020.





**Photo 5.** View of the southeast bank showing the eastern extents of the Cape ivy infestation, looking east from the south end of the bridge. Date of Photo: January 6, 2020.





**Photo 6.** View of the southwest bank showing the southwestern extent of the Cape ivy infestation, looking south from the northwest bank. Date of Photo: January 6, 2020.



**Photo 7. View of the southwest riparian area looking north from the highway.  
Date of Google Earth Street View Image: April 2020.**





**Photo 8. View of the southwest riparian area looking southwest from the bridge deck.  
Date of Google Earth Street View Image: April 2020.**



**Photo 9.** View of the southwest riparian overhanging the creek and the northwest bank, looking west-northwest and north under the bridge. Date of Photo: June 19, 2020.





**Photo 10. View of the northwest riparian area, looking north-northwest from the bridge deck.  
Date of Google Earth Street View Image: April 2020.**





**Photo 11. View of the northwest coastal brambles and riparian habitat, looking southwest from the highway. Date of Google Earth Street View Image: April 2020.**



**Photo 12. View of the northeast ruderal, coastal brambles, and riparian habitats, looking southeast from the highway. Date of Google Earth Street View Image: April 2020.**





**Photo 13. View of the northeast side of the highway coastal brambles and red alder habitats, looking north from the highway. Date of Google Earth Street View Image: April 2020**



# 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

*(Revised June 2022)*



STATE OF CALIFORNIA

1656 Union Street  
Eureka, CA 95501  
707-492-0158

**Exhibit 10 – Draft Offsite Habitat Mitigation  
and Monitoring Plan**

CDP Application No. 1-22-0446 (Caltrans)

Elk Creek Bridge Replacement Project

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- Appendix C. CCC Mitigation Worksheets
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## 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 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 <sup>1</sup>	Impacts <sup>2</sup> (Acres)		
		Temporary	Temporal	Permanent
PROJECT 1: Cleone Shoulder Widening Project (01-0G600)				
CCA Wetland	Slough Sedge ( <i>Carex obnupta</i> ) – 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 ( <i>Abies grandis</i> )	-	0.210	0.088
	Bishop Pine Forest ( <i>Pinus muricata</i> )	-	0.714	0.078
SNC/ESHA Total		-	0.924	0.166
Riparian	Red Alder Forest Alliance ( <i>Alnus rubra</i> )	-	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

<sup>1</sup> 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).

<sup>2</sup> 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.



<b>PROJECT 3: Elk Creek Bridge Replacement Project (01-0E110)</b>				
SNC/ESHA	Shrubland Alliance – Coastal Brambles ( <i>Rubus parviflorus</i> , <i>R. spectabilis</i> , <i>R. ursinus</i> ), non-riparian	-	0.137	0.057
<b>SNC Totals</b>		<b>-</b>	<b>0.137</b>	<b>0.057</b>
Riparian	Red Alder Forest Alliance	-	0.500	0.0478
	Sitka Willow Thicket ( <i>Salix sitchensis</i> )	-	0.133	0.0358
	Shrubland Alliance – Coastal Brambles ( <i>Rubus parviflorus</i> , <i>R. spectabilis</i> , <i>R. ursinus</i> )	-	0.104	0.053
	<i>Riparian Above OHWM Subtotal</i>	-	<i>0.737</i>	<i>0.137</i>
	Sitka Willow Thicket Wetland (below OHWM)	-	0.004	-
	Red Alder Forest Alliance Wetland (Below OHWM)	-	0.029	0.001
	<i>Riparian Below OHWM Subtotal</i>	-	<i>0.033</i>	<i>0.001</i>
<b>Riparian Totals</b>		<b>-</b>	<b>0.771</b>	<b>0.137</b>
CWA Wetland (Federal/State)	Wetland Ditch ( <i>Juncus patens</i> ) Prov. Herbaceous Alliance	-	-	0.002
Non-Wetland Waters (Federal/State)	Perennial Stream (Elk Creek); Riverine, Freshwater Tidal Water (RIUBV)	0.190	-	-
<b>Waters of the U.S./State Totals</b>		<b>0.190</b>	<b>-</b>	<b>0.002</b>
<b>Project 3: Elk Creek Bridge Replacement Project Impact Totals</b>		<b>0.190</b>	<b>0.907</b>	<b>0.196</b>

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)<sup>3</sup> and Biological Study Area (BSA)<sup>4</sup>, possess hydrogeological and climate conditions that result in various aquatic

<sup>3</sup> The Environmental Study Limits (ESL) refers to the project limits where direct ground disturbance may occur from all proposed activities.

<sup>4</sup> 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.

features 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 continues to work with the SCC to update a 2019 land appraisal in order to provide SCC funding to acquire the parcels in MLT’s name (appraisal update targeted for late April 2022). 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. 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 C 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 C) 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 C). 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 Sauder'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)	<b>0.008</b>
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)	<b>0.014</b>
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)	<b>0.038</b>	
Remaining Impacts (acres)		<b>0.029</b>
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
<b>Project 1: Cleone Shoulder Widening Project</b>				
<b>Permanent Impacts</b>				
Total Permanent Impacts to CCA Wetlands	0.008			
<b><i>Total Permanent Impacts CCA Wetlands</i></b>	<b><i>0.008</i></b>			
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 (Other Non-Wetland Waters)	0.038			
<b><i>Total Permanent Impacts to Waters of the U.S. and State</i></b>	<b><i>0.052</i></b>			
<b>Proposed Mitigation Off-site</b>				
<b>Off-site CCA Wetland Restoration at Saunder's Landing</b>			<b>0.317</b>	Substantial wetland restoration via invasive species removal and replant/seed with native vegetation
<u>Off-site Waters of the U.S./State Preservation at Saunder's Landing</u>				
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.				
<b>Off-site Waters of the U.S./State (wetlands) Preservation Mitigation at Saunder's Landing</b>			<b>0.441</b>	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 C) 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- Restoration at Jack Peters Creek Bridge:** Mitigation activities will include restoring grand fir SNC at the Jack Peters Creek Bridge location. Estimated impacts to grand fir SNC 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 – Enhancement & Restoration at Jack Peters Creek Bridge:** Mitigation activities will include removal of non-native, invasive species and restoring native plant SNC 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 (e.g., grand fir) and remove invasive species (e.g., Monterey cypress) in lieu of planting bishop pine (Appendix D). Estimated impacts to bishop pine SNC of 0.792-acre will be mitigated on-site via the following:
  - **SNC Enhancement:** Removal of 1.640-acres of Monterey cypress and other non-native, invasive species currently invading planned restoration areas on-site
  - **SNC Restoration:** Restore native tree SNCs on-site via the planting of 2.220-acres of grand fir SNC in lieu of bishop pine. As mentioned above, due to restrictions of planting bishop pine in Caltrans ROW, Caltrans proposed to remove non-native, invasive species, and plant grand fir SNC 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 C 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 C, 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 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 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 Impacts:** Bishop pine forest SNC restoration will be accomplished through restoration and enhancement activities at the Jack Peters Creek Bridge site. On-site bishop pine forest SNC 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 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 (e.g., grand fir) 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 (via Grand Fir Planting)
Project Impacts (acres)	<b>0.792</b>	
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
<b>Project 2: Jack Peters Creek Bridge Widening Project</b>				
<b>Temporal &amp; Permanent Impacts</b>				
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			
<b>Total Permanent Impacts to Waters of the U.S. and State</b>	<b>0.067</b>			
Total Temporal Impacts to Riparian	0.067			
Total Permanent Impacts to Riparian	0.005			
<b>Total Combined Temporal and Permanent Impacts to Riparian</b>	<b>0.072</b>			
Total Temporal Impacts to Grand Fir SNC	0.210			
Total Permanent Impacts to Grand Fir SNC	0.088			
<b>Total Combined Temporal and Permanent Impacts to Grand Fir SNC</b>	<b>0.298</b>			
Total Temporal Impacts to Bishop Pine SNC	0.714			
Total Permanent Impacts to Bishop Pine SNC	0.078			
<b>Total Combined Temporal and Permanent Impacts to Bishop Pine SNC</b>	<b>0.792</b>			
<b>Proposed Offsets and Mitigation On-Site</b>				
Ditch Wetland Creation		<b>0.045</b>		On-site ditch wetland creation for permanent impacts to wetlands; Total wetland replacement 1:1 in-kind replacement
Seep Wetland Restoration		<b>0.018</b>		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		<b>0.004</b>		On-site waters/drainage natural realigning for permanent impacts to non-wetland waters at 1:1 in-kind replacement
Riparian Restoration		<b>0.216</b>		On-site riparian restoration for temporal and permanent impacts to riparian at 3:1 in-kind replacement
Grand Fir Forest SNC Restoration		<b>0.894</b>		On-site grand fir restoration for temporal and permanent impacts at 3:1 in-kind replacement ratio
<u>Bishop Pine SNC Restoration</u> 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.				
Removal of 1.640-acres of Monterey cypress trees and other non-native, invasive species within Caltrans ROW		<b>1.640</b>		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		<b>2.220</b>		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
<b>Proposed Mitigation Off-Site</b>				
<u>Off-site Waters of the U.S./State Preservation at Saunder's Landing</u> Caltrans proposes to preserve sensitive aquatic resources present at Saunder's Landing via purchase and transference of the property to the MLT				
<b>Off-site Waters of the U.S./State (wetlands) Preservation Mitigation at Saunder's Landing</b>			<b>0.564</b>	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
<b>Off-site Waters of the U.S./State (non-wetland waters) Preservation Mitigation at Saunder's Landing</b>			<b>0.036</b>	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 menziesii*]), 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 (Saunders'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 Saunders's Landing as described below and subject to approval through the permitting process.



Mitigation to compensate for temporal loss of non-riparian SNC (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/acres 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 ESHA – Restoration at Elk Creek Bridge:** Mitigation activities will include restoring non-riparian coastal bramble ESHA at the Elk Creek Bridge location. Estimated temporal (0.137-acre) and permanent (0.057-acre) impacts to non-riparian coastal bramble 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 of sensitive resources 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 ESHA through a combination of preservation of riparian acreage (1.129-acres), other sensitive biological habitats (SNC/ESHA) (approximately 6.206-acres), and upland riparian buffer habitats (approximately 1.051-acres) available at Saunder's Landing. 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 4.850-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 3.321-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 at Saunder’s Landing would occur as a result of acquisition of the parcels for MLT.

Appendix C 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 C, 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 6.206-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 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 habitat preservation at Saunder's Landing. Other sensitive biological resources include 6.206-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 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 habitats.

### **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	0.002	
Remaining Impacts		0.0015
Mitigation Ratio Typically Required	4:1	12:1
Mitigation Proposed	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 C:

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 as discussed below and summarized in Table 14.

**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	<b>0.907</b>		
Remaining Impacts		0.605	0.479
Mitigation Ratio Proposed	3:1	9:1	10:1
Mitigation Acres Proposed	0.907	1.129	4.790

**Non-Riparian Coastal Bramble SNC Impacts:** On-site non-riparian coastal brambles SNC 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 0.06 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	<b>0.194</b>	
Remaining Impacts		0.151
Mitigation Ratio Typically Required	3:1	9:1
Mitigation Proposed	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
<b>Project 3: Elk Creek Bridge Replacement Project</b>				
<b>Temporal &amp; Permanent Impacts</b>				
Total Temporal Impacts to Non-Riparian Coastal Brambles (SNC)	0.137			
Total Permanent Impacts to Non-Riparian Coastal Brambles (SNC)	0.057			
<b><i>Total Combined Temporal and Permanent Impacts to Non-Riparian Coastal Brambles (SNC)</i></b>	<b>0.194</b>			
Total Permanent Impacts to Waters of the U.S. and State	0.002			
<b><i>Total Permanent Impacts to Waters of the U.S. and State</i></b>	<b>0.002</b>			
Total Temporal Impacts to Riparian	0.771			
Total Permanent Impacts to Riparian	0.137			
<b><i>Total Combined Temporal and Permanent Impacts to Riparian</i></b>	<b>0.907</b>			
<b>Proposed Offsets and Mitigation On-Site</b>				
Perennial Stream Restoration (Temporary Impacts)  Temporary impacts from removal of gravel pad, culvert, and stream diversion every construction season		<b>0.190</b>		Temporary impact from removal of gravel pad, culvert, stream diversion every construction season
Non-Riparian Coastal Brambles (SNC)  Shrubland Alliance – Coastal Brambles ( <i>Rubus parviflorus</i> , <i>R. spectabilis</i> , <i>R. ursinus</i> )		<b>0.130</b>		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		<b>0.002</b>		On-site re-establishment at 1:1 mitigation ratio for permanent impacts to wetlands
Riparian Restoration		<b>0.907</b>		On-site riparian restoration at 1:1 mitigation ratio for temporal and permanent impacts
<b>Proposed Mitigation Off-site</b>				
<b>Off-site Waters of the U.S./State Preservation (wetlands) at Saunder's Landing</b>  Caltrans proposes to preserve aquatic resources present at Saunder's Landing via purchase and transference of the property to the MLT.			<b>0.018</b>	Preservation of sensitive resources present at Saunder's Landing to address temporal loss to waters of the U.S./State following <b>1:1</b> on-site offsets
<b>Off-site Riparian Preservation at Saunder's Landing</b>  Caltrans proposes to preserve 1.129-acres of riparian habitats as in-kind mitigation for riparian impacts			<b>1.129</b>	Preservation of riparian habitats at Saunder's Landing to address temporal loss to riparian habitats following <b>1:1</b> on-site offsets
<b>Off-site SNC/ESHA Preservation at Saunder's Landing</b>  Caltrans proposes to preserve 4.7900-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.			<b>6.206</b>	Preservation of other sensitive biological resources present at Saunder's Landing. Total SNC/ESHA area = 6.206-acres. SNC/ESHAs include: <ul style="list-style-type: none"> <li>• 1.100-acre of bishop pine forest</li> <li>• 1.330-acre of northern coastal scrub</li> <li>• 3.321-acres of coastal terrace prairie</li> <li>• 0.455-acre of coastal bluff scrub</li> </ul>

### 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: <ul style="list-style-type: none"><li>○ 0.144-acre proposed to be preserved for Project impacts to wetlands</li><li>○ 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)</li></ul> 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

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)	<b>0.130</b>	0.094	0.036	-	<b>0.130</b>	<p>On-site CWA non-wetland waters restoration will be completed at 01-43484 and 01-0E110 at 1:1 ratio.</p> <p><u>01-0G600</u>: 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).</p> <p><u>01-43484</u>: Preservation of 0.036 acre of non-wetland waters for Project impact to non-wetland waters</p>
CCA Wetland (1-, 2-parameter wetlands)	<b>0.070</b>	-	-	-	-	No identified Project needs for CCA wetlands at Saunder's Landing; Habitats will be preserved in perpetuity as a result of acquisition and transference of the parcels to MLT.
<i>CCA Wetland and Waters of the U.S./State Totals</i>	<b>1.312</b>	<b>0.535</b>	<b>0.600</b>	<b>0.018</b>	<b>1.153</b>	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.

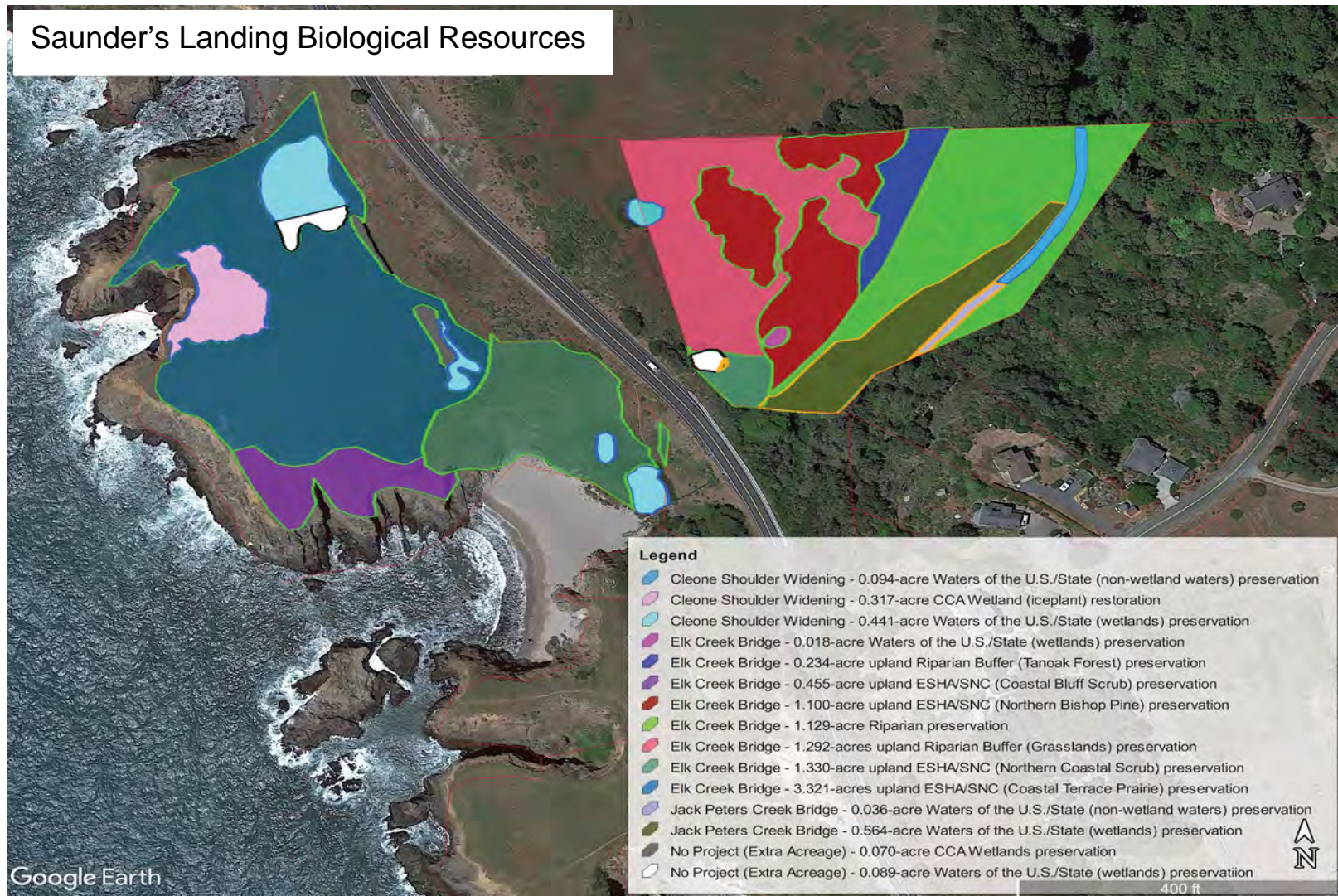
Resource	Acreage Present on Saunder’s Landing	Roadway Projects			Project Mitigation Acreage Totals	Notes
		Cleone (01-0G600)	Jack Peters (01-43484)	Elk Creek (01-0E110)		
Riparian Habitat Preservation						
Riparian Zone at Saunder’s Landing	1.129	-	-	1.129	1.129	On-site riparian restoration (at 1:1) 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 01-43484 and 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: <ul style="list-style-type: none"><li>1.100-acres of bishop pine forest</li><li>1.330-acres of northern coastal scrub</li><li>0.455-acre of coastal bluff scrub</li><li>3.321-acres of coastal terrace prairie</li></ul>
Northern Coastal Scrub	1.330	-	-	1.330	1.330	
Coastal Bluff Scrub	0.455	-	-	0.455	0.455	
Coastal Terrace Prairie	3.321	-	-	3.321	3.321	Total SNC/ESHA to be preserved = 6.206-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)		
<i>SNC/ESHA Totals</i>	<b>6.206</b>			<i>6.206</i>	<b>6.206</b>	<p>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</p> <p><u>01-0E110</u>: 10:1 SNC/ESHA preservation mitigation ratio applied to 0.479-acre Project impacts = 4.790-acres</p> <p>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.</p> <p><u>01-0E110</u>: 9:1 SNC/ESHA preservation mitigation ratio applied to 0.151-acre Project impacts = 1.356-acres</p> <p>Caltrans will preserve 6.206-acres of SNC/ESHAs at Saunder's Landing to compensate for Project needs. As a result of acquisition and transference to the MLT, a total of 6.206-acres of sensitive other habitats present at Saunder's Landing will be protected in perpetuity.</p>

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

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 Saender'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

The Cleone Shoulder Widening Coastal Development Permit (CDP) application (CDP 2021-0012), in addition to CDP applications for the Jack Peters Creek Bridge Project and the Elk Creek Bridge Replacement Project, are cover Caltrans mitigation activities on Saunder's Landing. However, an assessment of the off-site Saunder's Landing mitigation project activities will be analyzed in a Natural Environment Study (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 biological resource protection. Caltrans recognizes that a separate CDP may be required to implement the HMMP, pending discussions with Mendocino County.

## Chapter 2. Environmental Setting

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### 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 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-Bruh-el-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

Saunders'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 (Saunders'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 E) 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 E.

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 E.

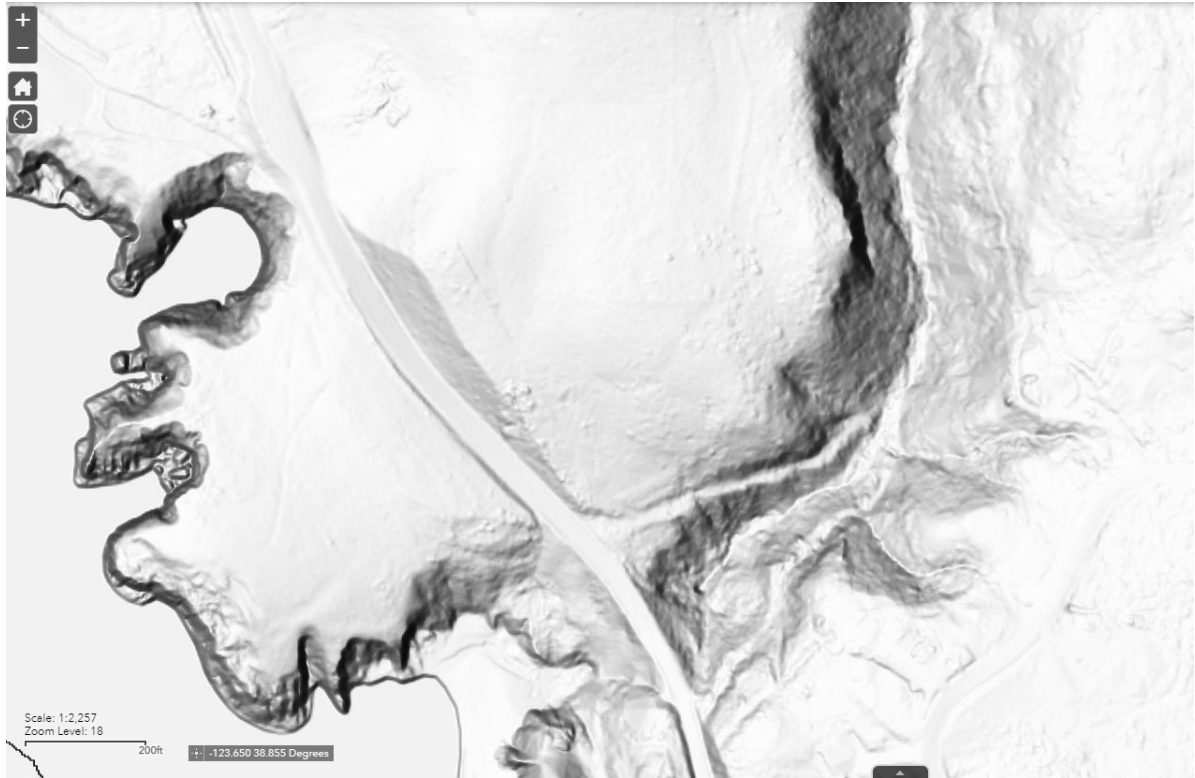
### **Riparian Vegetation Discussion**

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 28<sup>th</sup> and March 1<sup>st</sup>, 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. *cyclosum*), 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.

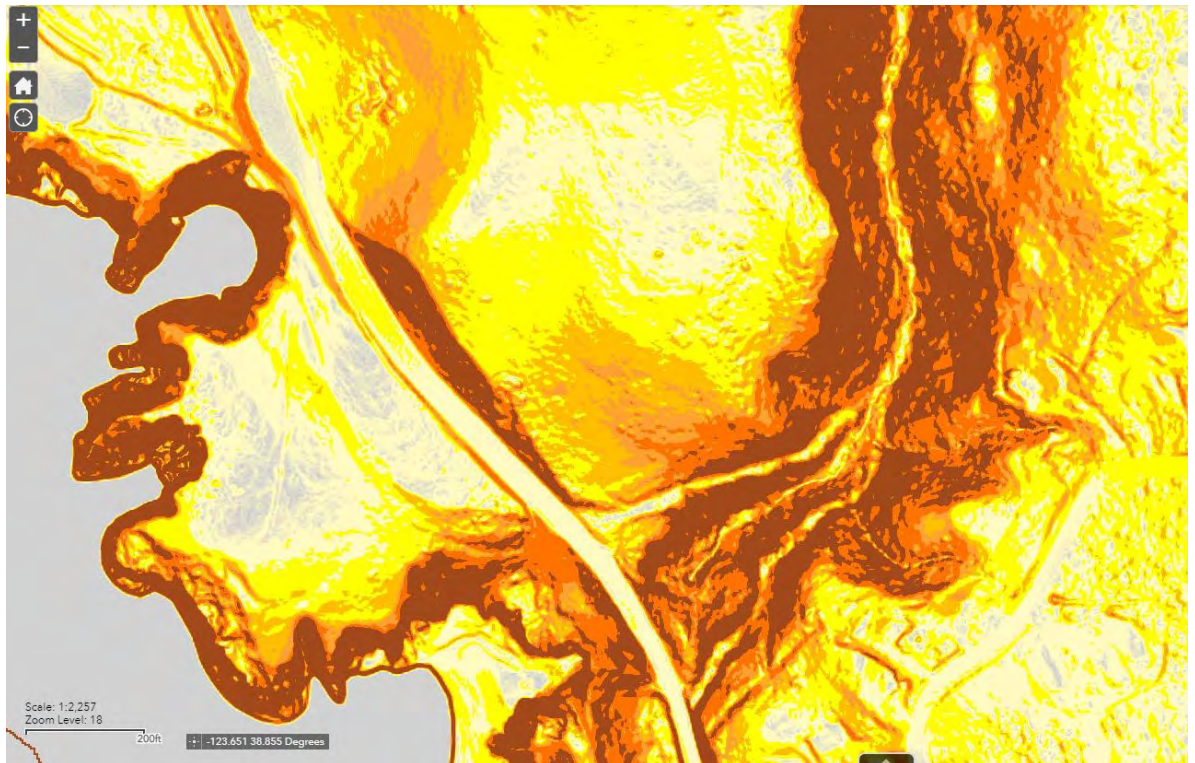
As elevation increases rapidly beyond the small floodplain, the dominant vegetation alliances are bishop pine and tanoak forests. For the bishop pine forest alliance, the main species present include bishop pine, California blackberry, bedstraw (*Galium* sp.), poison oak, bracken (*Pteridium aquilinum*), 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).

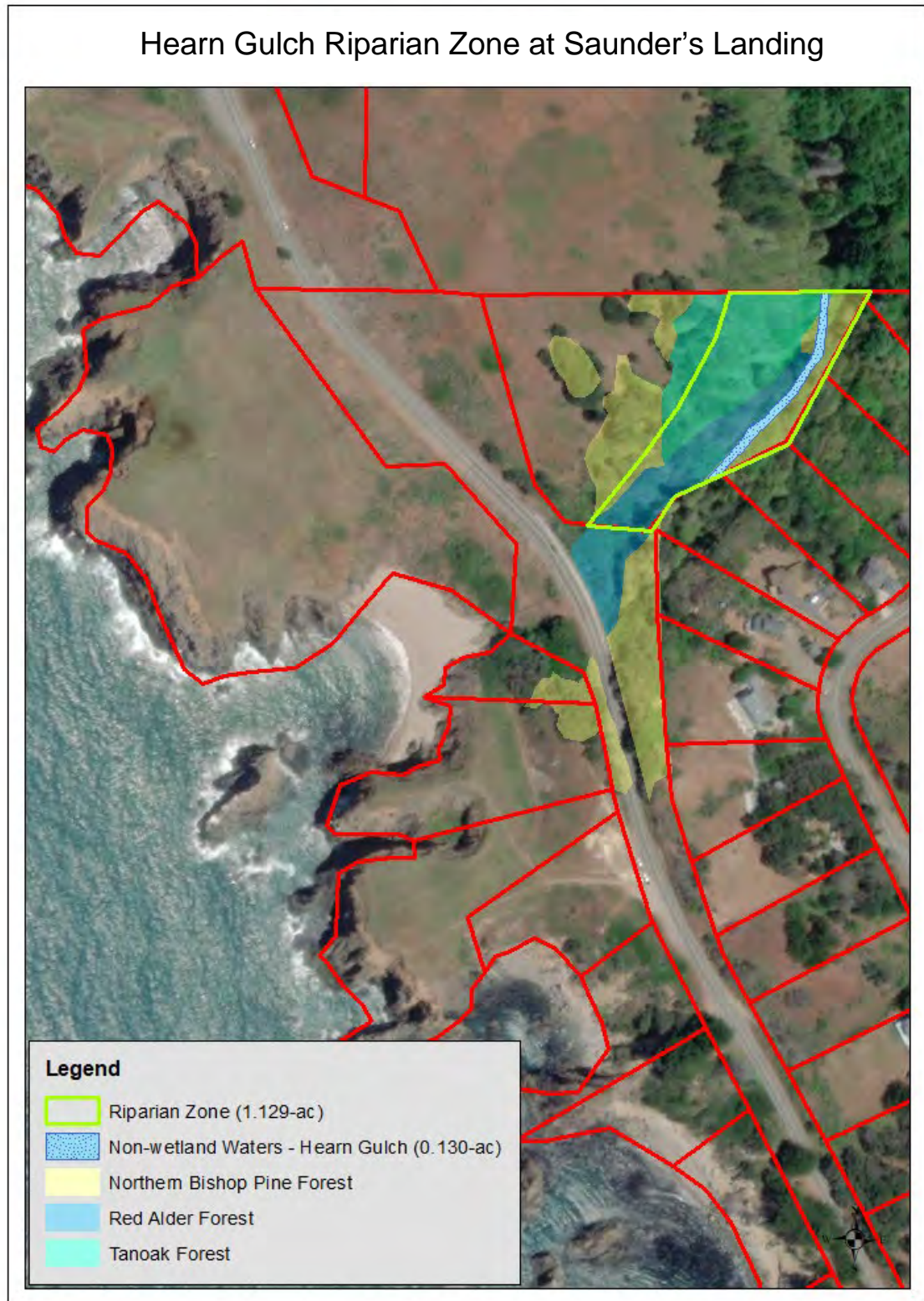


**Figure 3. USGS 3DEP Elevation-Multi-Directional Hillshade Map showing elevation profile for riparian zone within eastern Saunder's Landing parcel at Hearn Gulch**



**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)<sup>5</sup> 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

<sup>5</sup> 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 Property Analysis Record (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.

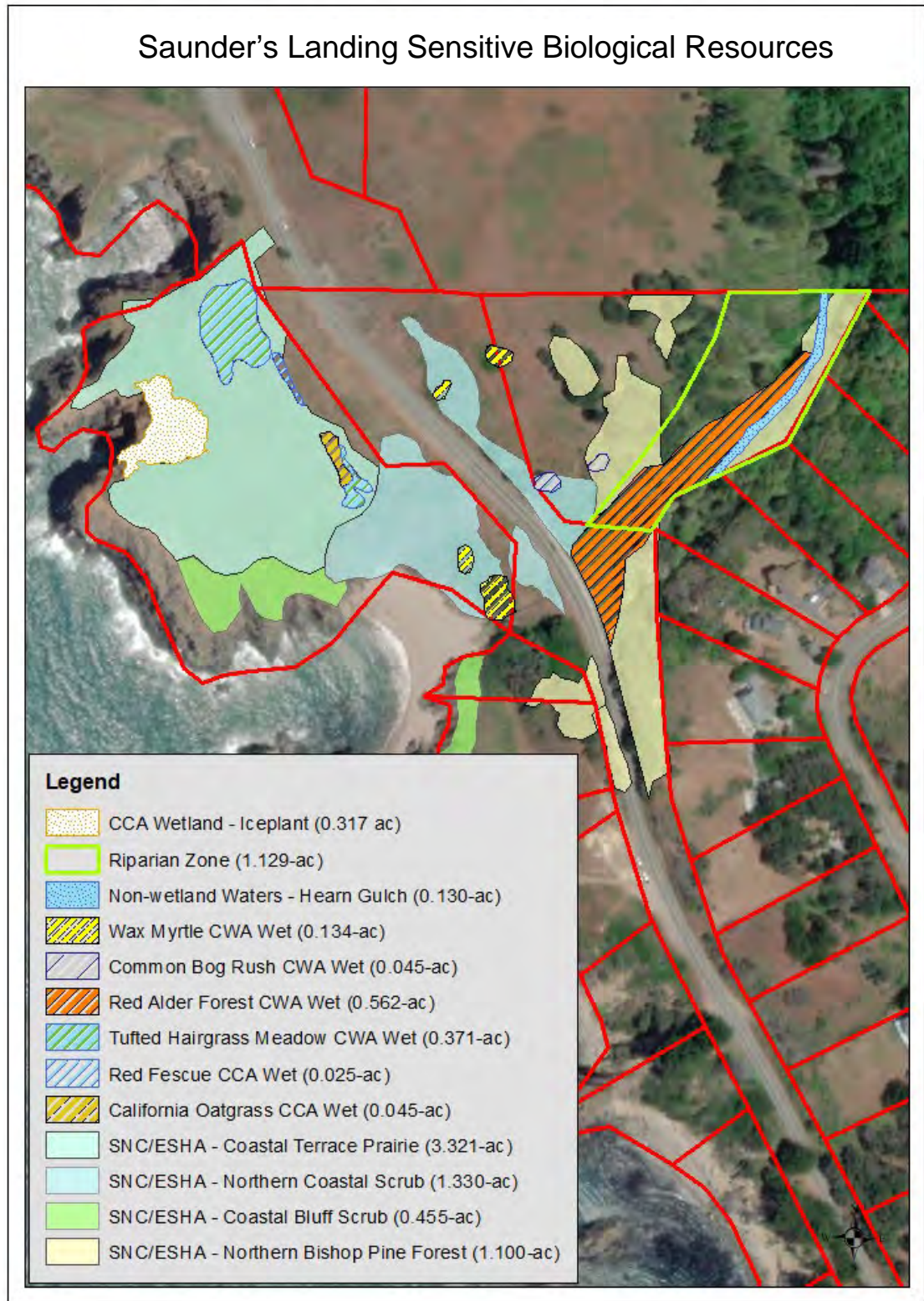
Overall, the coastal terrace prairie habitat within Saunder's Landing is composed of significant plant cover (approximately 80% native plant cover) with sensitive aquatic resources and plant species. Acquisition of the parcels will offer MLT the opportunity to preserve these habitats and species and 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 1.524-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 1.290-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. Acquisition of these parcels and transference to the MLT would ensure a large vegetative buffer (~100-200 yards) would be preserved in perpetuity.

## 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 E).

### **Non-Wetland Waters Discussion**

Surveys conducted by qualified Caltrans staff on February 28<sup>th</sup> and March 1<sup>st</sup>, 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 through aggressive treatment of the iceplant, continual maintenance and monitoring for five years, and by providing an endowment to the MLT to perform long-term management of the restored wetlands.

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.

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.

### 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, 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 contain 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 noted 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 threatening water quality for Hearn Gulch and the Saunders Reef SCMA MPA and ASBS State Water Quality Protection Area, 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 (*Arborimus pomus*) 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

Saunders' 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 State Marine Conservation Area (SMCA) Marine Protected Area (MPA) and the Saunders Reef Area of Special Biological Significance (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 acquire the parcel in MLT's name. To provide long-term site protection of the mitigation parcel, mitigation lands will be encumbered via an Agreement of Restrictive Covenants 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 preserve sensitive aquatic and plant resources present on the 12-acre parcels. Wetland restoration activities include invasive plant removal (iceplant) 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 1.182-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.
3. Ensure the continued function and quality of aquatic resources by continued removal of non-native, invasive species via long-term funding provided through an endowment.

The following riparian and non-riparian SNC/ESHA 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 6.206-acres of SNC/ESHA on Saunder's Landing that include: Northern bishop pine forest (1.100-acres), coastal terrace prairie (3.321-acres), coastal bluff scrub (0.455-acre), and northern coastal scrub (1.330-acres).

The following wetland 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/ESHA resources by the continued removal of non-native, invasive species via long-term funding provided through an endowment.

In addition, 1.051 acres of upland riparian buffer habitat on Saunder's Landing that includes native tanoak forest (0.134 acre) and grasslands (1.290 acre) will be preserved and protected from development through this acquisition.

### 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. Preserve 1.312-acres of aquatic resources, 1.129-acres of riparian habitats, and 6.206-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.

## 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 E. For this HMMP, Caltrans intends to undertake invasive species removal in wetland W-11 (Figure 1).

### 4.2. Invasive Plant Management Plan

Wetland 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.

- Invasive Plant Removal Methods:*** Caltrans would mechanically remove all target invasive plants in the 0.350-acre wetland (W-11). 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. These plants 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 to remove all invasive plant species within the wetland.

Initially the first removal effort could take 1-2 weeks or more to remove invasive plant species from the wetland.

- **Initial Treatment:** In the initial year of implementation and the following monitoring years, crews would hand pull the iceplant, taking 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 oversight from a trained botanist at Caltrans) iceplant and other invasive plants growing in the wetland and remove them. Pulled iceplant and other invasive plants 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 iceplant material.
- **Successive Treatments:** 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). 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 iceplant and other invasive plants growing in the wetland 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. It is anticipated that one removal effort per year would be required to identify and remove any new infestations of invasive plants.
- **Native Planting or Seeding:** Following the initial treatment, the wetland would be reseeded/replanted with regionally appropriate native plants including, but not limited to, species such as California oatgrass, red-fescue, and/or seaside daisy (*Erigeron glaucus*). Re-establishing native plants in wetland W-11 will provide functional lift to this coastal wetland and protect the surrounding coastal terrace prairie and nearby wetland habitats from further migration and invasion of the iceplant throughout the western parcel.



## 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 wetland restoration. 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 wetland restoration area are listed below.

#### 5.1.1 Wetland Restoration Performance Criteria

The following performance criteria are proposed and will assist Caltrans in determining if the wetland restoration mitigation is 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 iceplant within the wetland. To meet this criterion, Caltrans will conduct one or multiple invasive removal efforts and will summarize implementation activities. Assessment of iceplant 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 invasive iceplant re-growth to determine if there is less than 5% cover of live iceplant in the wetland. In addition, an evaluation for native plant coverage will occur to assess the criterion goal of 80% ground cover of native species is on trajectory for the final year.

### 5.1.2 Wetland Restoration Success Criteria

**Year 6:** By the final (fifth) year of the monitoring and maintenance period, the criterion for iceplant coverage remains at less than 5% coverage in the wetland and the native plant ground coverage is greater than 80%.

## 5.2 Monitoring Methods and Schedule

Caltrans will conduct annual monitoring of the 0.350-acre wetland restoration area to ensure the success criterion 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 Wetland Restoration Monitoring Methods

**Sampling:** Cover will be recorded annually for each plant species in the wetland restoration area to demonstrate that the area is on trajectory to meet the success criterion.

**Establishing reproducible photo points:** Restoration implementation, maintenance and quality control will be documented through photo monitoring annually through Year 5. 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 monitoring reports annually for mitigation activities in accordance with *USACE 2015 Compensatory Mitigation and Monitoring Guidelines*<sup>6</sup>. The first report will contain the implementation work summary. Monitoring reports documenting mitigation activities will be prepared and submitted to the permitting agencies that require submission of monitoring reports annually. Annual reports in Years 2-6 will summarize invasive plant maintenance activities, quality control efforts, adaptive management efforts that were required (if any), monitoring methods and results, and photos showing the trajectory towards

<sup>6</sup> Final 2015 Regional Compensatory Mitigation and Monitoring Guidelines for South Pacific Division USACE.

the success criteria. The reports will be prepared by a qualified Biologist or Mitigation Specialist and will evaluate whether the the goals and success criteria set forth in the approved HMMP for wetland restoration have been achieved.

Each monitoring report will include the following information:

- A summary of the project location and description.
- Maps of the general project location and 0.350-acre wetland restoration area.
- A summary of the monitoring methods.
- 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 and analysis of the monitoring results, including an evaluation of site conditions in the context of the success criteria in Year 1.
- A discussion of the monitoring results.
- Adaptive management recommendations, including discussion of areas with inadequate performance and recommendations for remedial action.
- A discussion of proposed modifications to the monitoring methods that will require permitting agency approval.
- A discussion of the previous year's maintenance efforts.
- Photo documentation and maps of photo points of the mitigation site and reference site(s) (if applicable)

## 5.4 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.

#### 5.4.1 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.).

#### 5.4.2 Failure to Meet Success Criteria

If the monitoring results indicate that the site is not on a trajectory to meeting the success criteria, Caltrans will develop an adaptive management strategy identifying proposed remedial actions. 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 the monitoring reports.



## **Chapter 6. Long-Term Management Plan**

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### **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 acquire the parcel in MLT's name. 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.

#### **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 (Appendix B). 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 in MLT's name 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, ensuring long-term maintenance/removal of invasive plant species on the western parcel after Caltrans has achieved mitigation success criterion of the off-site HMMP for the project and continued protection of preserved resources via various measures including exclusionary fencing, signage, etc.

### **6.2.2 Long-Term Site Protection**

To provide long-term site protection of the mitigation parcel, mitigation lands will be encumbered via an Agreement of Restrictive Covenants 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 National Fish and Wildlife Foundation (NFWF) will hold the endowment for MLT.

### **6.2.3 Qualified Personnel/Monitoring Biologist**

MLT will utilize qualified staff or contractors to implement maintenance and monitoring. MLT staff 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 responsibilities may include, but are not limited to:

- Evaluating the presence of newly introduced invasive plant species and recommending management, 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.

### **6.2.4 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.

### **6.2.5 Invasive Species Control**

Caltrans is responsible for the success of meeting the mitigation criteria within the HMMP. After success criteria are achieved and agency approval is obtained, long-term maintenance and monitoring 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 invasive iceplant within the 0.350-acre wetland restoration area. The endowment will also provide funding to MLT to conduct invasive plant surveys and mapping every five years for the entire 12-acre property, and removal/treatment as appropriate for all species rated at highly invasive by the California Invasive Plant Council (Cal-IPC). Invasive plant surveys and removal treatment will occur at a minimum of every five years or as needed to control the spread of highly invasive plants.

## **6.3 Inspection, Monitoring and Reporting**

### **6.3.1 Schedule**

Long-term maintenance and monitoring of Saunder's Landing by MLT will begin when the resource agencies have agreed that Caltrans has met the HMMP performance standards at the end of the five-year maintenance and monitoring period.

- MLT will conduct one general inspection each year of the 12-acre Saunder's Landing property.
- MLT will conduct an invasive plant survey each year of the 12-acre Saunder's Landing property.
- MLT will conduct invasive plant control and management activities quarterly, as needed, for all species rated as highly invasive by CAL-IPC.
- 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.
- MLT will conduct annual health assessments of the 1.1 acres Bishop pine stand.
- MLT will treat or remove dead or diseased Bishop pine vegetation from the property annually or as needed.

- Follow-up inspections of the mitigation properties will occur as often as needed to protect the mitigation.

### **6.3.2 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 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. If any problems are identified, follow-up inspections will be done to closely track the problem as well as to track that 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.

### **6.3.3 Biological Monitoring**

Biological monitoring for Saunder's Landing under this HMMP will include annual invasive species surveys and Bishop pine stand health assessments. . MLT staff or contractors will conduct ocular surveys to assess invasive plant coverage at the wetland on the western parcel and the remainder of the 12-acre property. The surveys will estimate the percent coverage of invasive plants and this information will be summarized in the five-year monitoring report (see Section 6.3.4). 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 invasive plants within the 0.350-acre wetland restoration/iceplant removal area will be less than 5% cover. Other species rated as highly invasive by Cal\_IPC will be treated for removal as need is identified according to the long term management plan prepared by MLT. Bishop pine management activities and mapping of iceplant and other highly invasive plants with a description of treatments and follow up surveys will be provided to the regulatory agencies within the general inspection report (every 5 years).



### **6.3.4 Reporting and Administration**

MLT will submit a written report to the interested agencies every five years (by December 30<sup>th</sup>) which will summarize all long-term maintenance efforts, along with any potential land management changes. The report will include:

- A map of the 0.350-acre wetland restoration area.
- Representative photos documenting the status of the mitigation site.
- Observations from the annual general inspections.
- Documentation of maintenance activities accomplished.
- Invasive species survey results.
- Mapping of invasive species treatment areas, including description of treatment and follow-up survey results.
- Endowment accounting.
- Recommendations for altered management practices as needed.

## **6.4 Transfer of Responsibilities and Plan Modifications**

### **6.4.1 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.

### **6.4.2 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.

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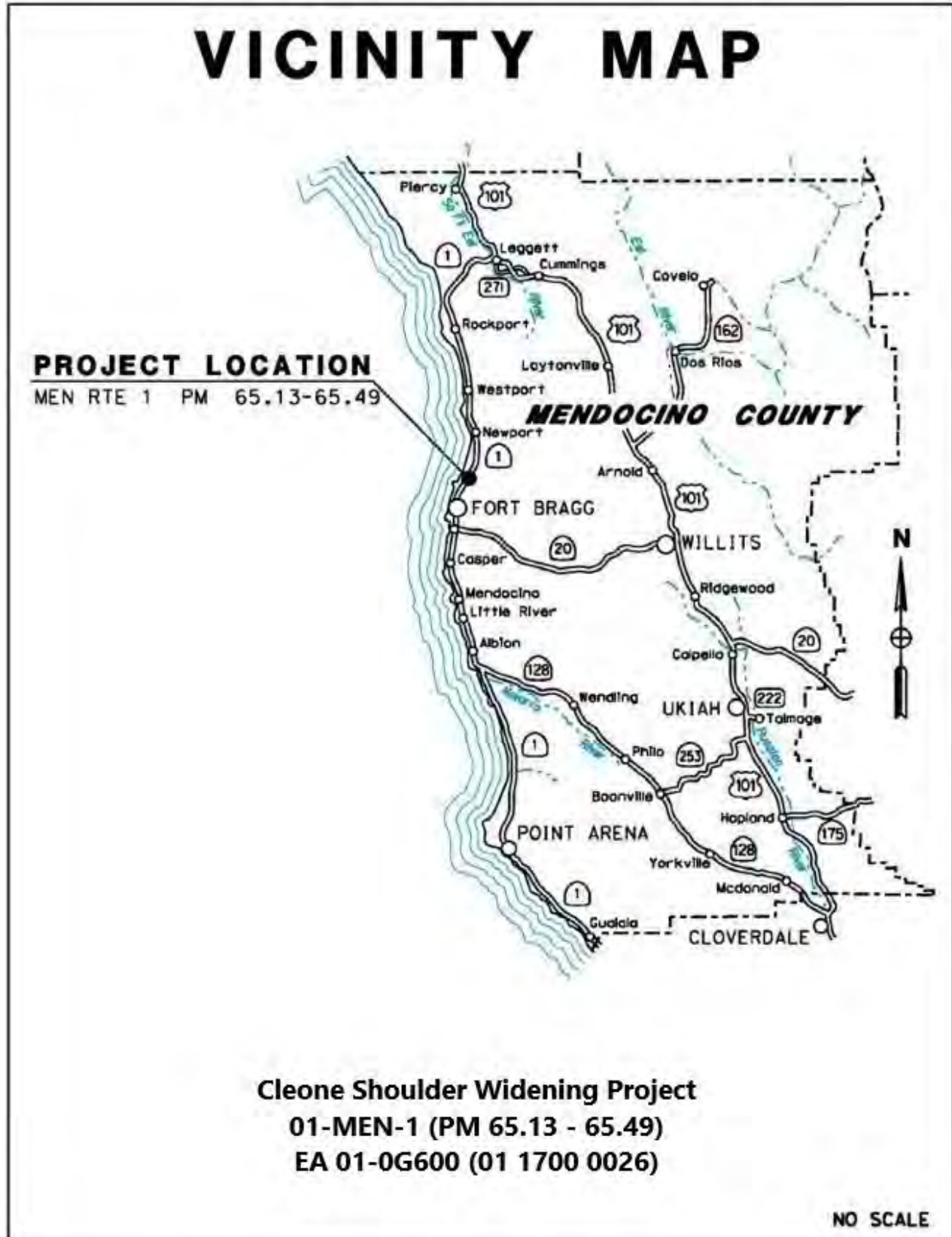
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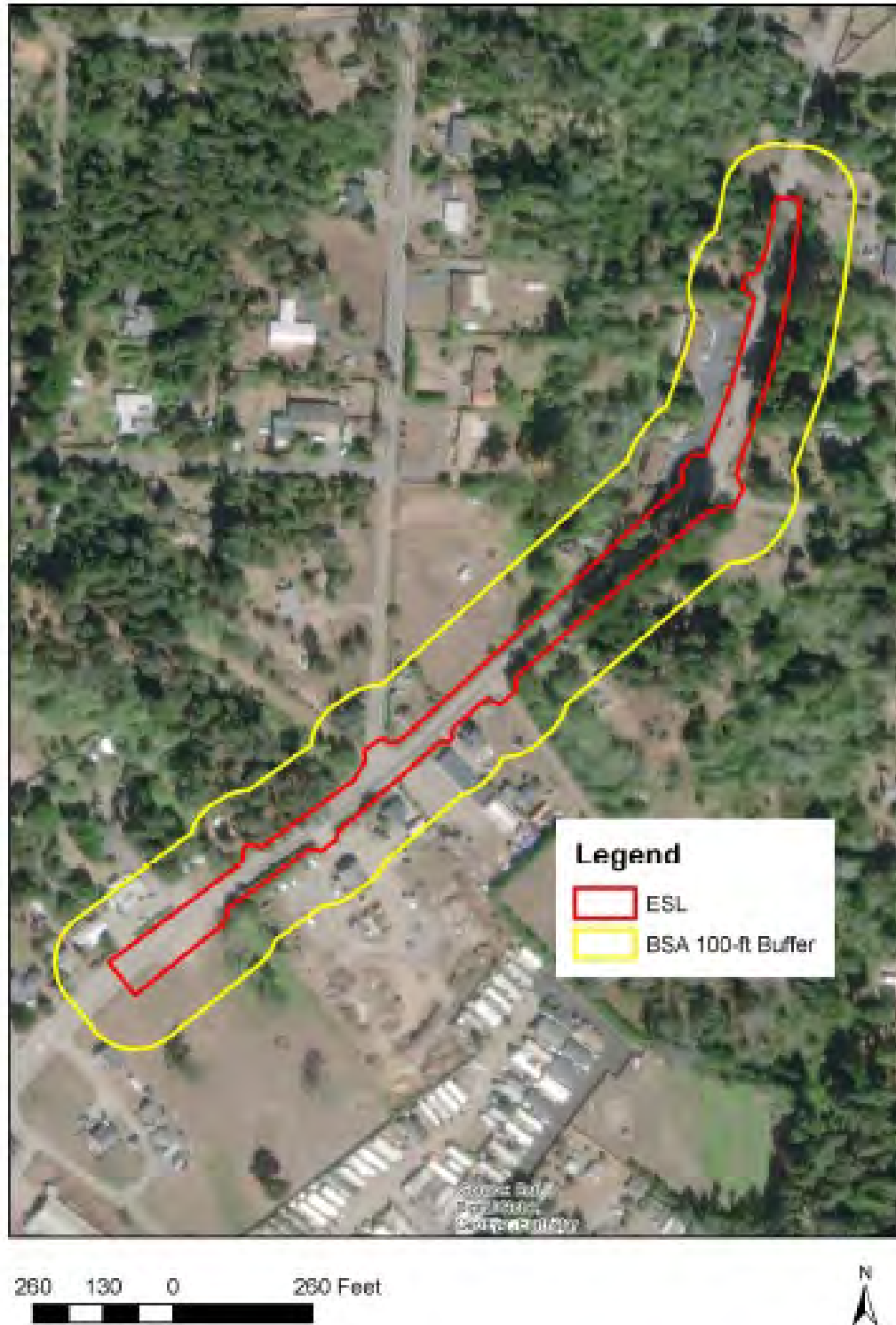
## Appendix A. Project Maps

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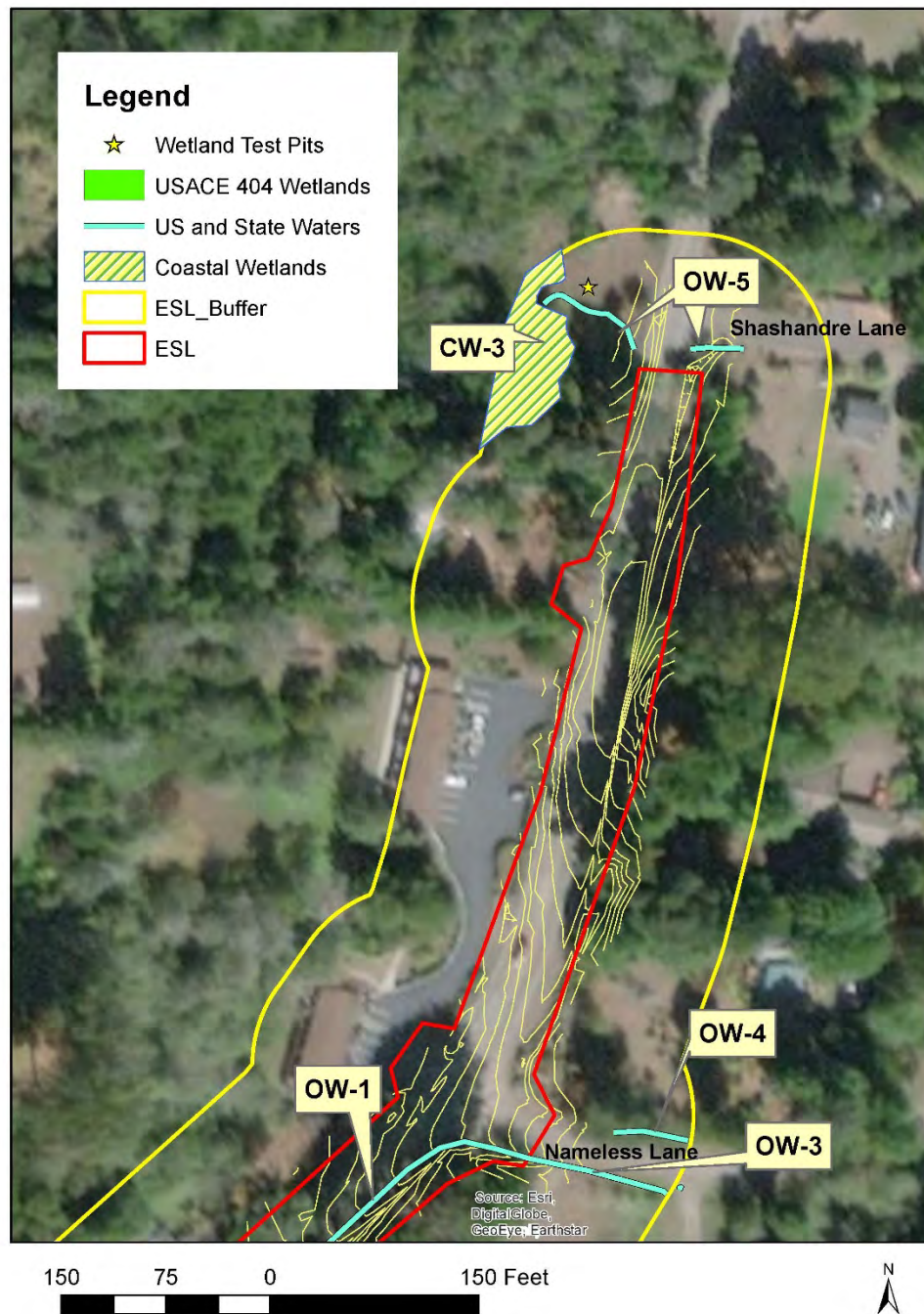
Cleone Shoulder Widening Project - Vicinity Map



## Cleone Shoulder Widening Project - Site Map

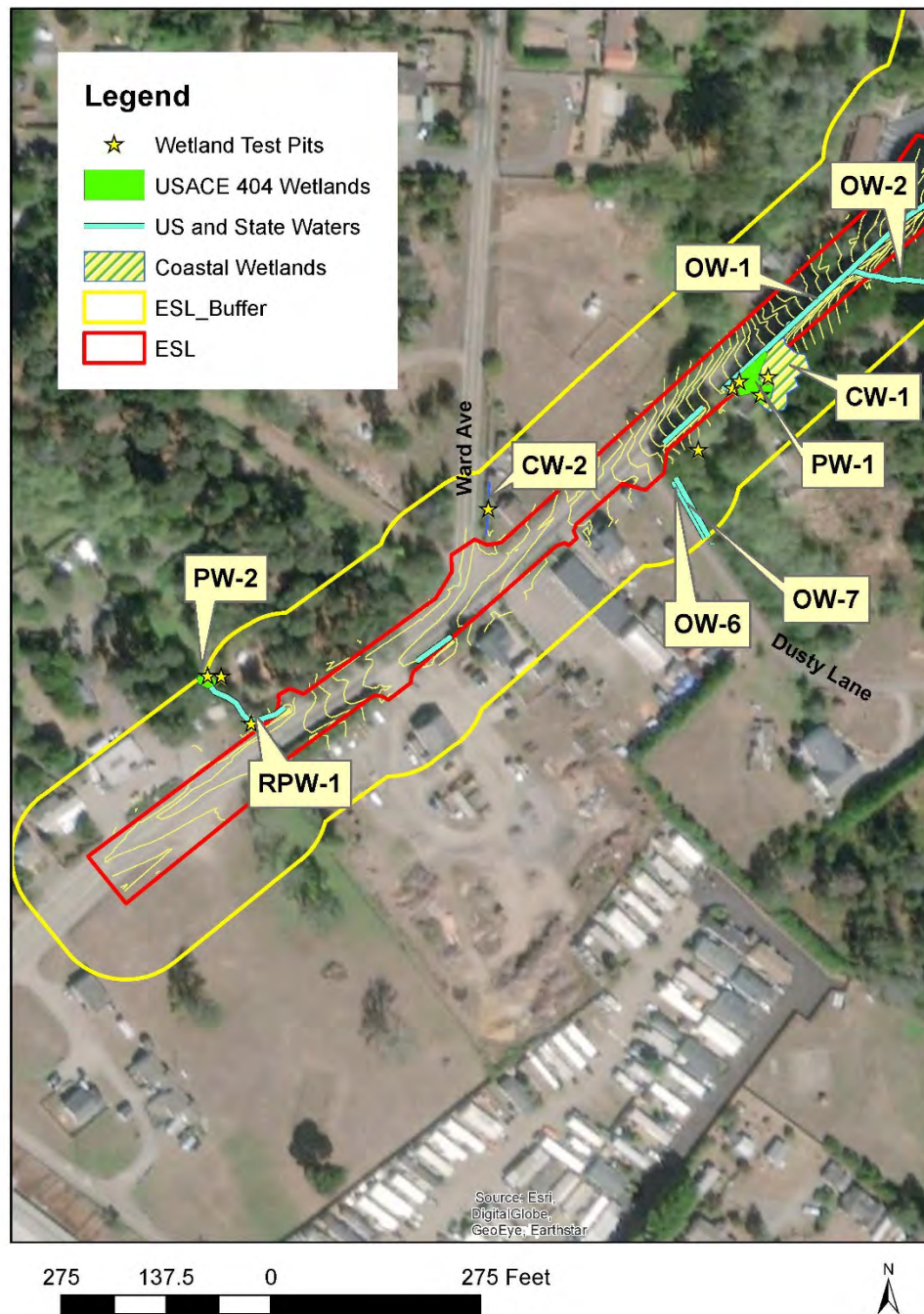


## Cleone Shoulder Widening Project - Waters of the U.S./State Maps



**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



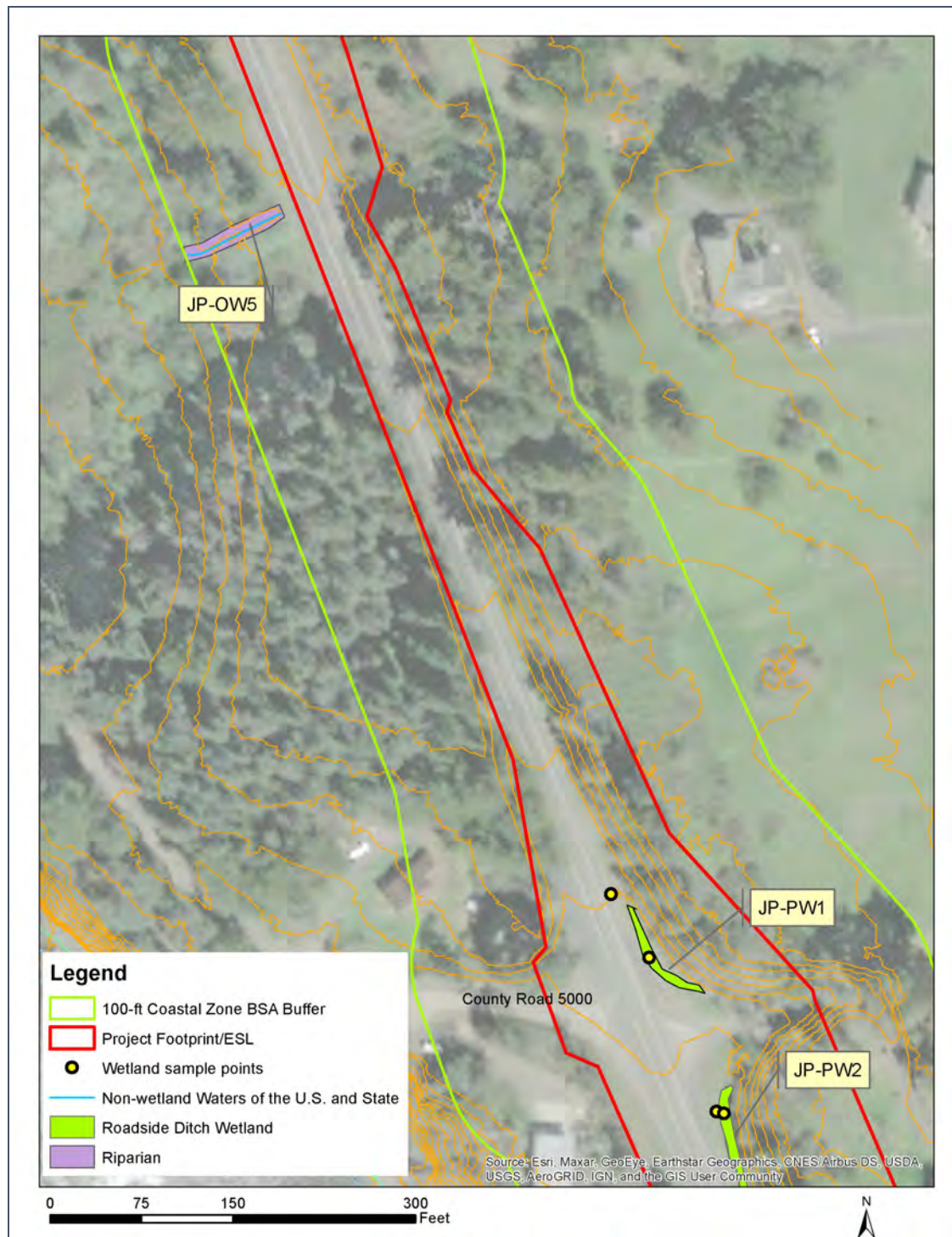




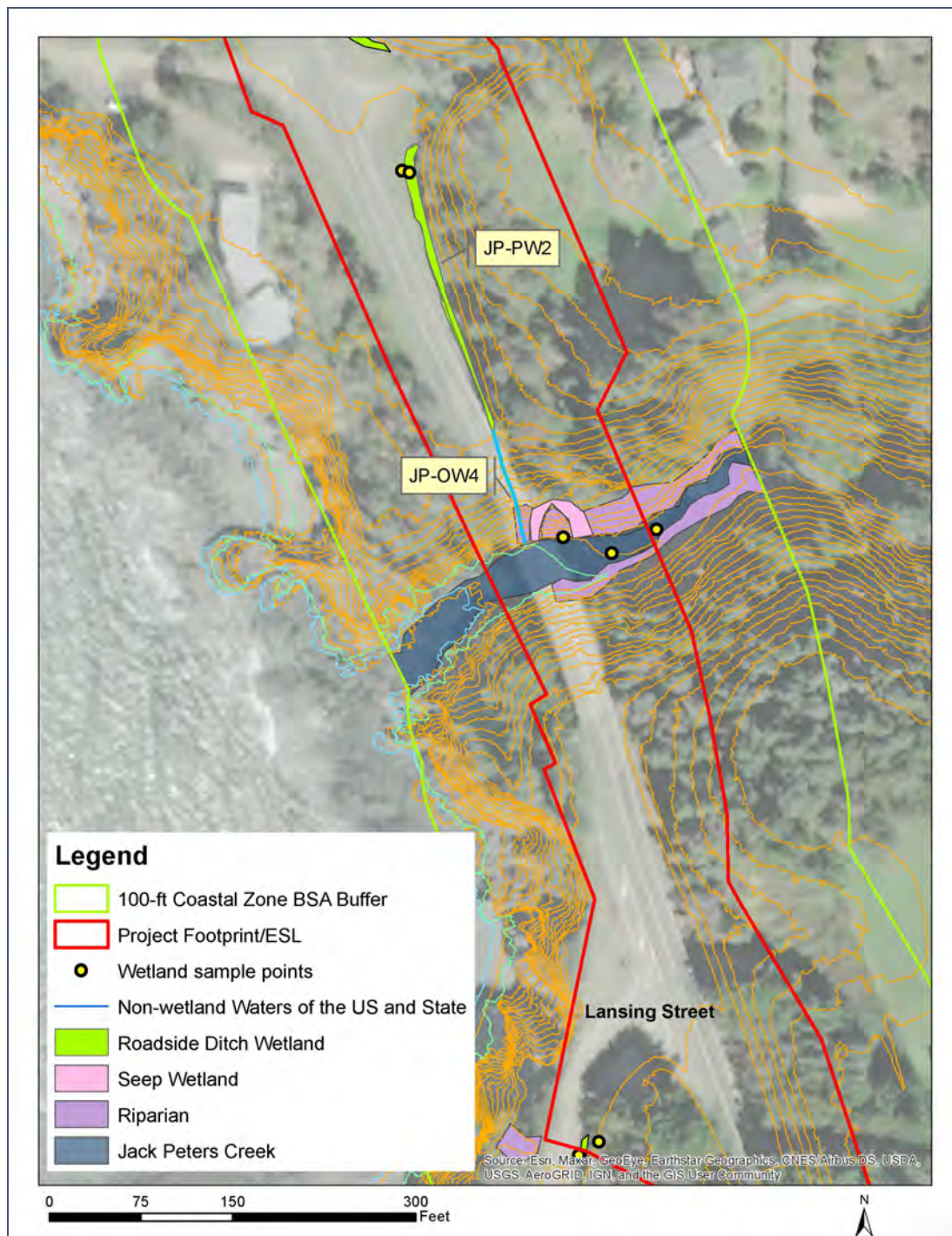
Exhibit 10 - Draft Offsite Habitat Mitigation and Monitoring Plan  
CDP Application No. 1-22-0446 (Caltrans)  
Elk Creek Bridge Replacement Project  
Page 114 of 172



## Jack Peters Creek Bridge Project - Waters of the U.S./State Maps

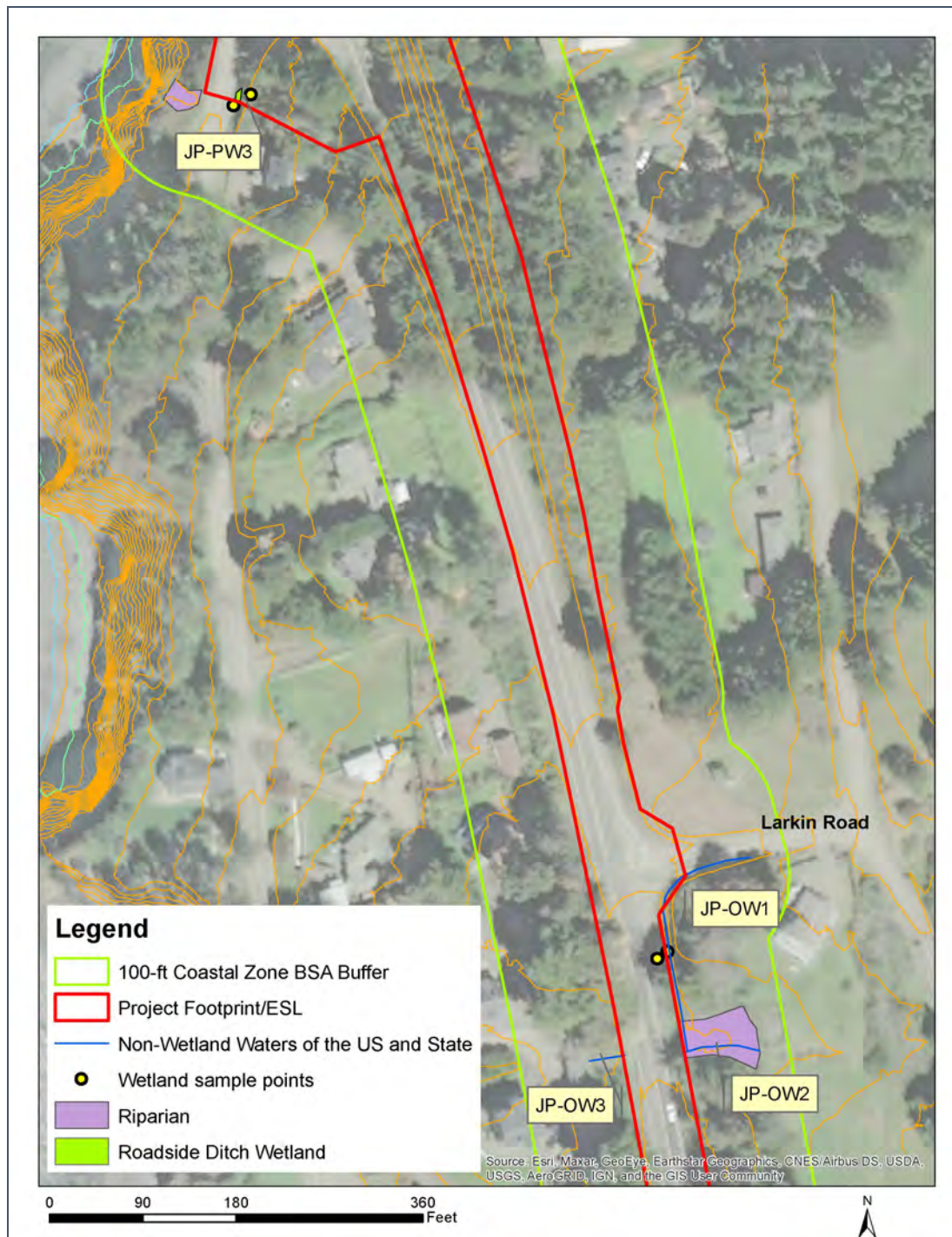


**Potentially Jurisdictional Wetlands and Waters and Associated Riparian Habitat within the BSA - North of County Road 5000**



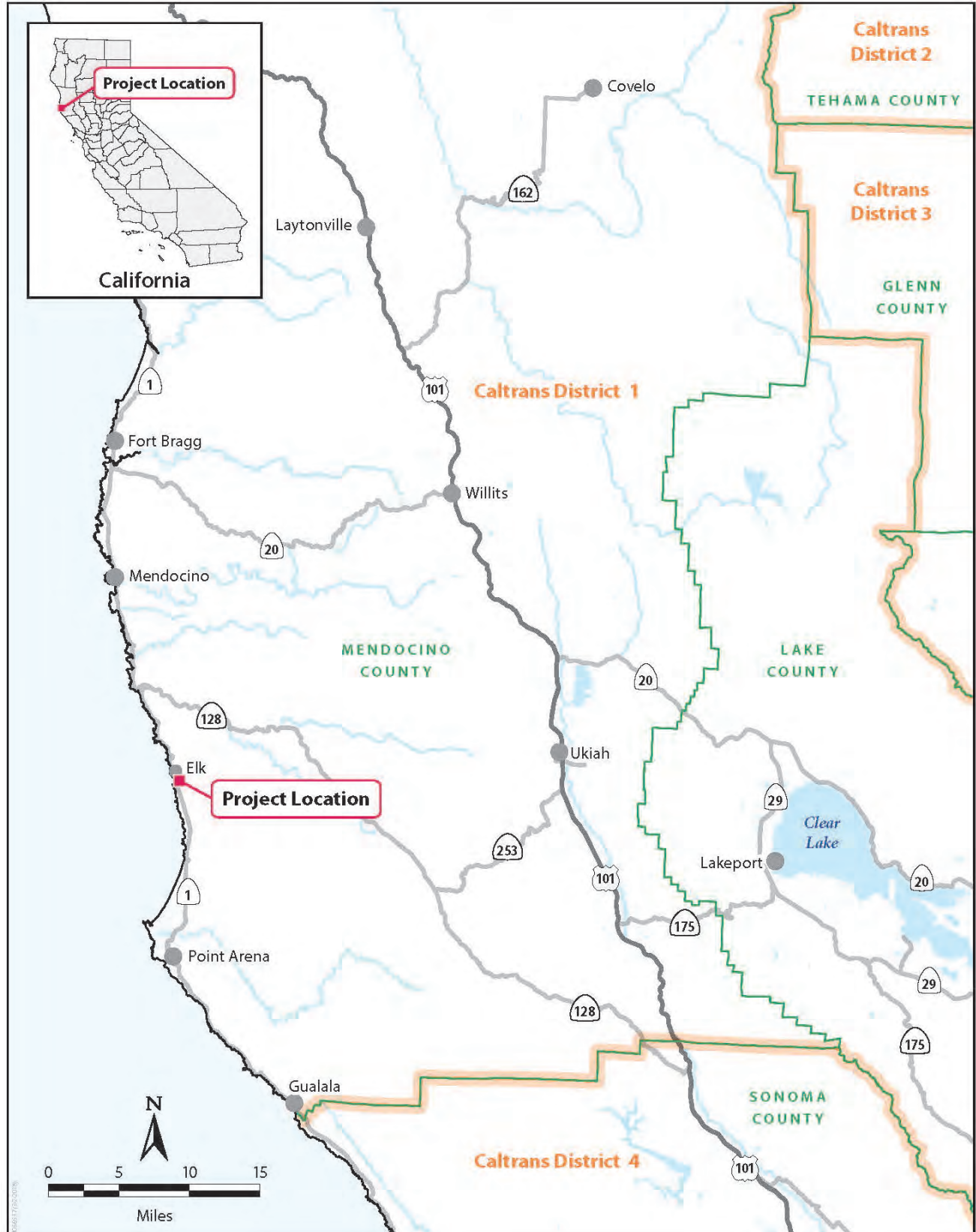
**Potentially Jurisdictional Wetlands and Waters and Associated Riparian Habitat within the BSA - North of Lansing Street**





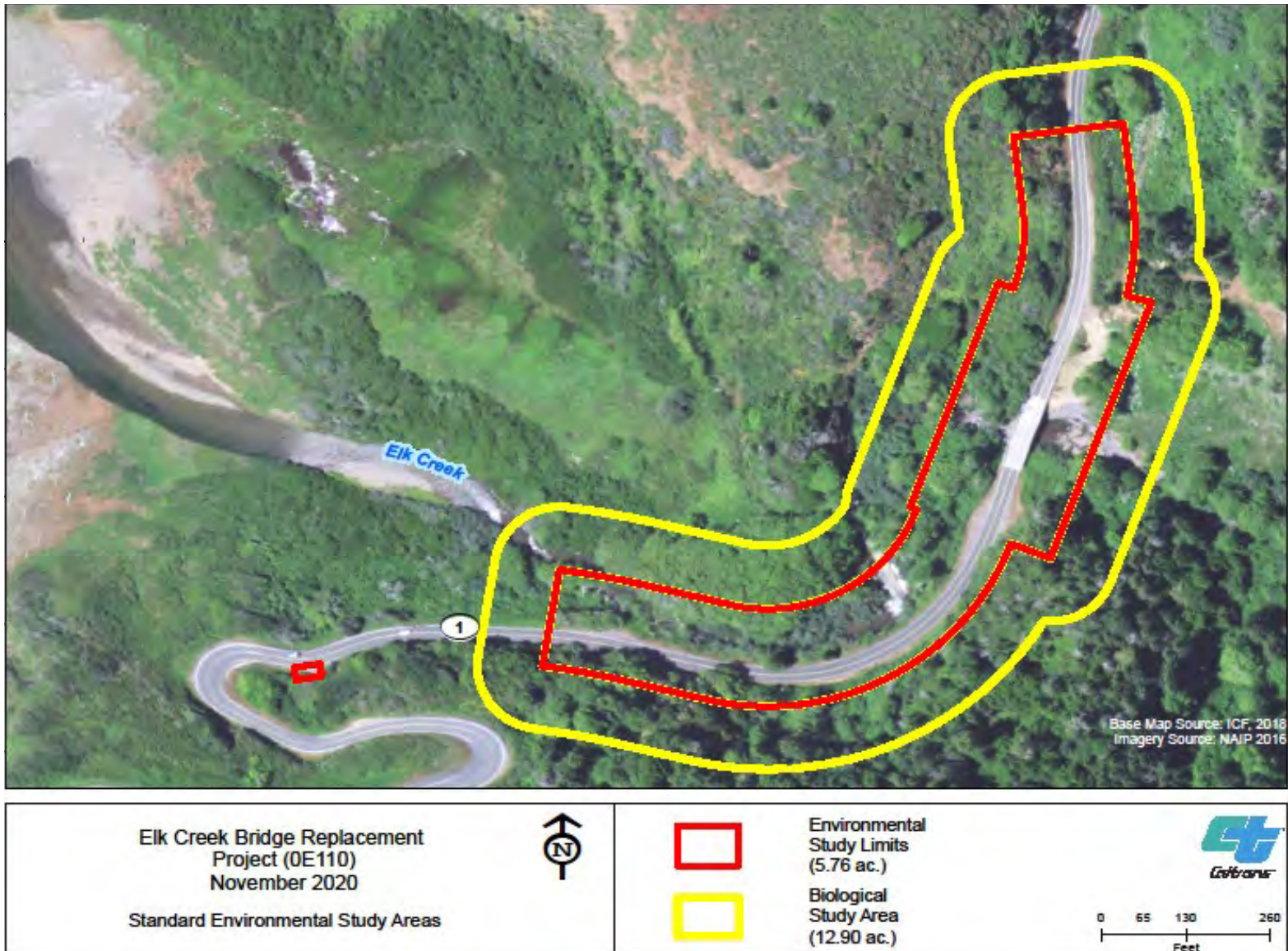
**Potentially Jurisdictional Wetlands and Waters and Associated Riparian Habitat within the BSA - South of Lansing Street**

## Elk Creek Bridge Replacement Project - Vicinity Map



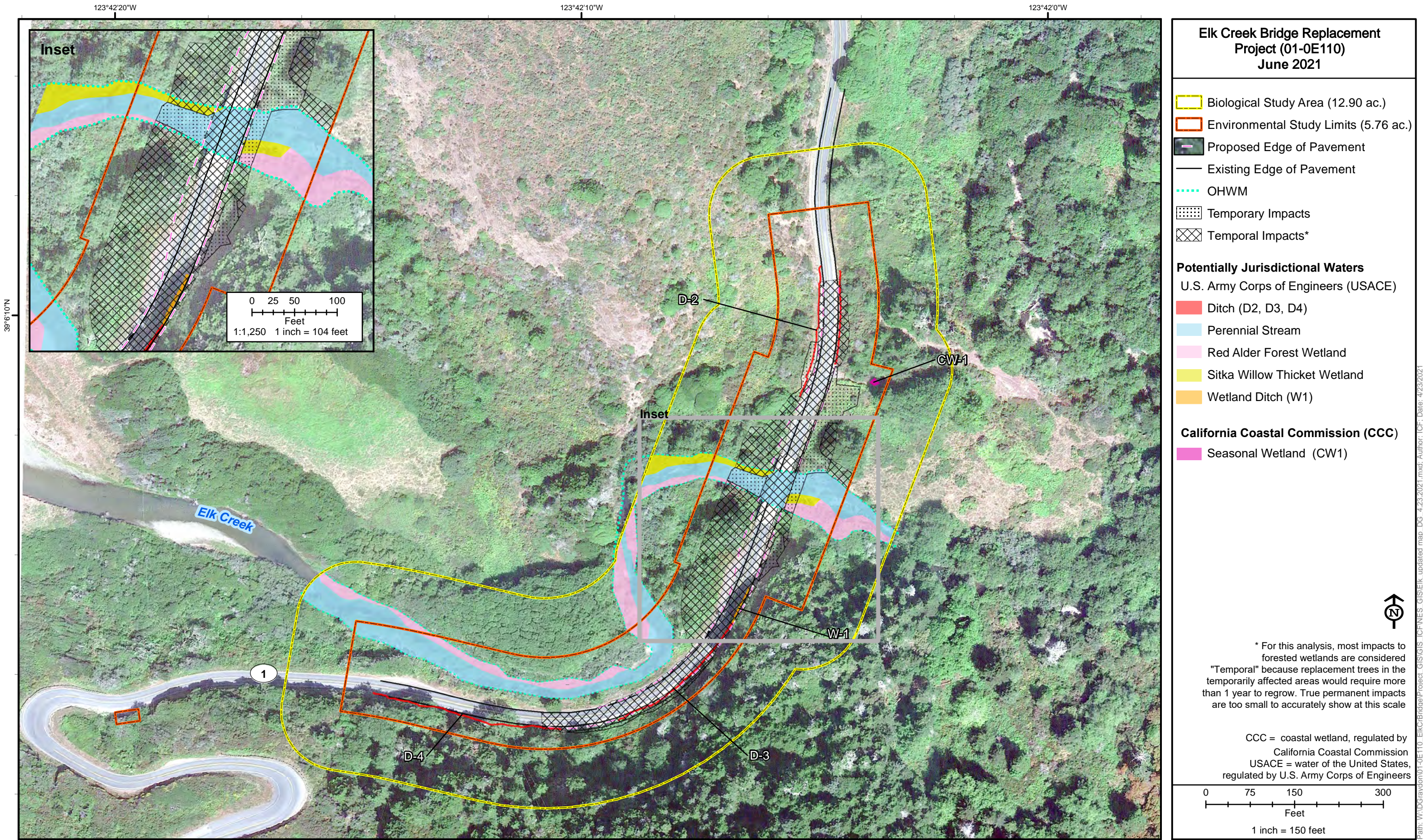


## Elk Creek Bridge Replacement Project - Site Map



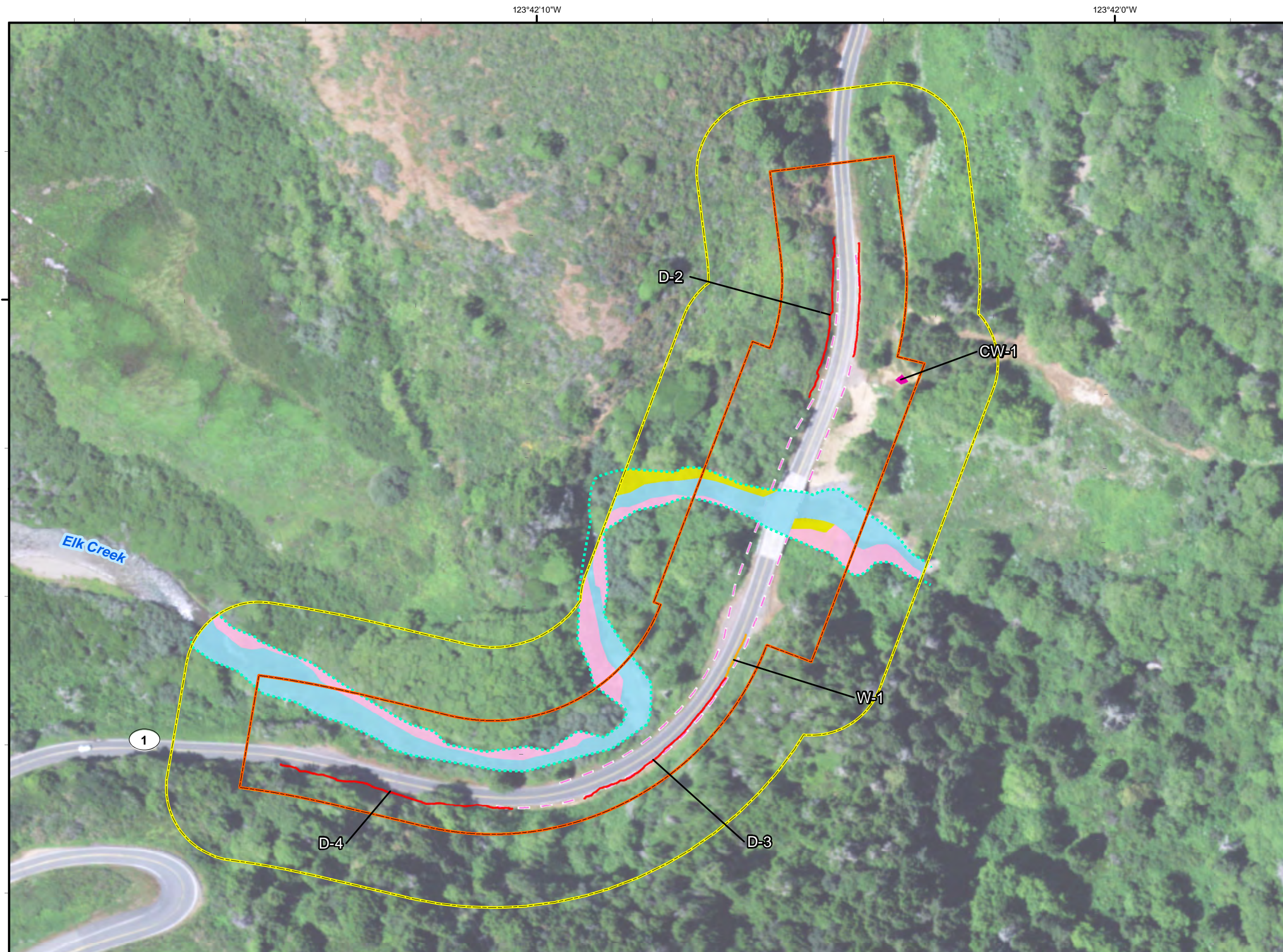


Elk Creek Bridge Project - Waters of the U.S./State Maps



Impacts on Potentially Jurisdictional Waters of the United States and Waters of the State





### Elk Creek Bridge Replacement Project (01-0E110)

June 2021

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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)

\* 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

|

|

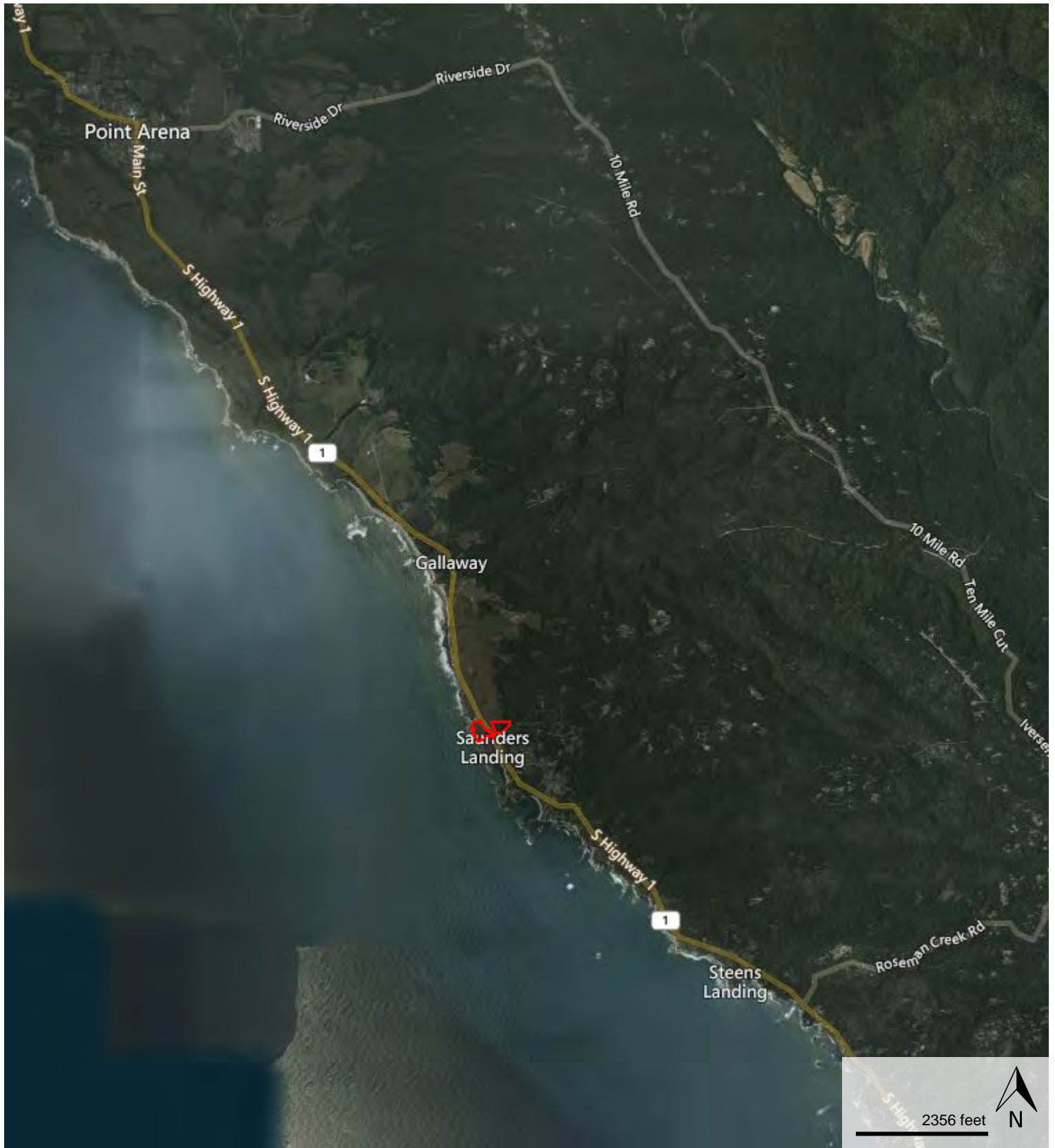
Feet

1 inch = 137.5 feet

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**

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**Joel Chaban**  
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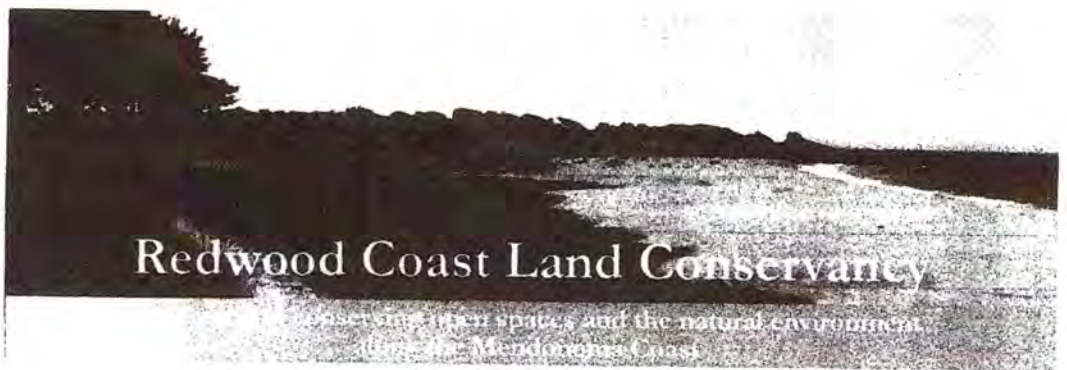
**Kathleen Chasey**

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Linda Bell  
Bill Clement  
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Mary Sue Ittner  
Robert Juengling  
Cindy Kennedy  
Irene Leidner  
Fred McElroy  
Susan Moon  
Dave Scholz  
Harmony Susalla

*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 include a Draft Offsite Habitat Mitigation and Monitoring Plan

CDP Application No. 1-22-0446 (Caltrans)

Elk Creek Bridge Replacement Project

Page 126 of 172



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

Laurie Mueller, President  
Redwood Coast Land Conservancy

6/7/2019

Date

Kenneth LaBoube

Kenneth LaBoube

6/22/2019

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.

2

## Letter of Mutual Interest

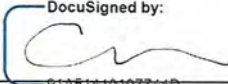


  
Conrad Kramer, Executive Director  
Mendocino Land Trust

5-17-2022  
Date

John Walton, President  
Redwood Coast Land Conservancy Board of Directors

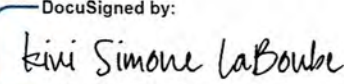
Date

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Stine LaBoube  
Co-Heir to estate of Kenneth LaBoube

5/15/2022

Date

DocuSigned by:  
  
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Kivi Simone LaBoube  
Co-Heir to estate of Kenneth LaBoube

5/16/2022

Date

2 Letter of Mutual Interest

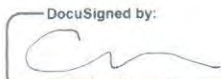


Conrad Kramer, Executive Director  
Mendocino Land Trust

Date

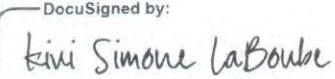
  
John Walton, President  
Redwood Coast Land Conservancy Board of Directors

5/16/22  
Date

DocuSigned by:  
  
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Stine LaBoube  
Co-Heir to estate of Kenneth LaBoube

5/15/2022

Date

DocuSigned by:  
  
11CAF3B38A9B451...  
Kivi Simone LaBoube  
Co-Heir to estate of Kenneth LaBoube

5/16/2022

Date





## Appendix C. CCC Mitigation Worksheets

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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 ( <i>Carex obnupta</i> ) – single-parameter coastal wetland	-	-	0.008	0.008		0.032	0.064	0.096				-	0.317	-				<u>Offsite Mitigation</u> 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				<u>Offsite Mitigation</u> 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				<u>Offsite Mitigation</u> 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-wetland 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				

						Mitigation Required (on and off site) - acres						Mitigation Proposed (on and off site) - acres										
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	in-kind ESHA			out-of-kind ESHA			Notes
		Temporary	Temporal	Permanent												Creation	Enhancement	Preservation	Creation	Enhancement	Preservation	
SNC/ESHA	Grand Fir Forest <i>(Abies grandis )</i>	-	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 <i>(Pinus muricata )</i>	-	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 <i>(Alnus rubra )</i>	-	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	2.240	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										
Jurisdictional Feature	Habitat Type	Impacts			Total "temporal +permanent" (wetland)	Total "temporal +permanent" (ESHA)	in-kind CWA/CCA wetland & other waters			in-kind ESHA			in-kind CWA/CCA wetland & other waters			in-kind ESHA			out-of-kind ESHA			Notes	
							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		
		Temporary	Temporal	Permanent																			
SNC/ESHA	Shrubland Alliance – Coastal Brambles ( <i>Rubus parviflorus</i> , <i>R. spectabilis</i> , <i>R. ursinus</i> )	-	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  <b>Total out-of-kind Other Sensitive Biological Habitats Proposed to be Preserved (in combination w/ riparian impacts below): 6.206-acres</b>  6.206-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  3.321 acres Coastal Terrace Prairie				<u>Onsite Mitigation</u> 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)  <u>Offsite Mitigation</u> 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	-	Proposed out-of-kind mitigation for Other Sensitive Biological Habitats preservation: 4.790-acres  <b>Total out-of-kind Other Sensitive Biological Habitats Proposed to be Preserved (in combination w/ non-riparian SNC impacts above): 6.206-acres</b>  6.206-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  3.321 acres Coastal Terrace Prairie	-	-	<u>Onsite Mitigation</u> 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)  <u>Offsite Mitigation</u> 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	
	Sitka Willow Thicket ( <i>Salix sitchensis</i> )	-	0.133	0.036		0.169					0.506	1.013	1.519										
	Shrubland Alliance – Coastal Brambles ( <i>Rubus parviflorus</i> , <i>R. spectabilis</i> , <i>R. ursinus</i> )	-	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									
Jurisdictional Feature	Habitat Type	Impacts			Total "temporal +permanent" (wetland)	Total "temporal +permanent" (ESHA)	in-kind CWA/CCA wetland & other waters			in-kind ESHA			in-kind CWA/CCA wetland & other waters			in-kind ESHA			out-of-kind ESHA			Notes
							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	
		Temporary	Temporal	Permanent																		
Wetland (Federal/State)	3-parameter State/Federal Wetland Ditch ( <i>Juncus patens</i> ) Prov. Herbaceous Alliance	-	-	0.002	0.002		0.008	0.016	0.024				0.002		0.018							<u>Onsite Mitigation</u> 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)  <u>Offsite Mitigation</u> 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	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 D. **CDFW Concurrence for On-Site Northern Bishop Pine Mitigation at Jack Peters Creek Bridge**

---



**From:** Olson, Jennifer@Wildlife <[Jennifer.Olson@wildlife.ca.gov](mailto:Jennifer.Olson@wildlife.ca.gov)>  
**Sent:** Monday, November 8, 2021 2:50 PM  
**To:** Walker, Tracy@DOT <[Tracy.Walker@dot.ca.gov](mailto:Tracy.Walker@dot.ca.gov)>  
**Subject:** RE: Jack Peters Creek - Grand Fir and Bishop Pine on-site replanting

**EXTERNAL EMAIL.** Links/attachments may not be safe.

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](mailto:Tracy.Walker@dot.ca.gov)>  
**Sent:** Tuesday, November 2, 2021 3:17 PM  
**To:** Olson, Jennifer@Wildlife <[Jennifer.Olson@wildlife.ca.gov](mailto:Jennifer.Olson@wildlife.ca.gov)>  
**Subject:** Jack Peters Creek - Grand Fir and Bishop Pine on-site replanting

**WARNING:** This message is from an external source. Verify the sender and exercise caution when clicking links or opening attachments.

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](mailto:Jennifer.Olson@wildlife.ca.gov)>  
**Cc:** Walker, Liza M@DOT <[liza.walker@dot.ca.gov](mailto:liza.walker@dot.ca.gov)>; Frederickson, Stephanie@DOT <[Stephanie.Frederickson@dot.ca.gov](mailto:Stephanie.Frederickson@dot.ca.gov)>; Wagner, Christina@DOT <[christina.wagner@dot.ca.gov](mailto: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](mailto: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](mailto:Jennifer.Olson@wildlife.ca.gov)>  
**Cc:** Walker, Liza M@DOT <[liza.walker@dot.ca.gov](mailto:liza.walker@dot.ca.gov)>; Wagner, Christina@DOT <[christina.wagner@dot.ca.gov](mailto:christina.wagner@dot.ca.gov)>; Eldridge, Kellie@DOT <[Kellie.Eldridge@dot.ca.gov](mailto:Kellie.Eldridge@dot.ca.gov)>; Frederickson, Stephanie@DOT <[Stephanie.Frederickson@dot.ca.gov](mailto: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 E. **Biological Resource Inventory and Invasive Species Summary for Saunder's Landing**

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# 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  
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May 31, 2020

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## Appendix A: Wetland Data Sheets

*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.



## Location Map

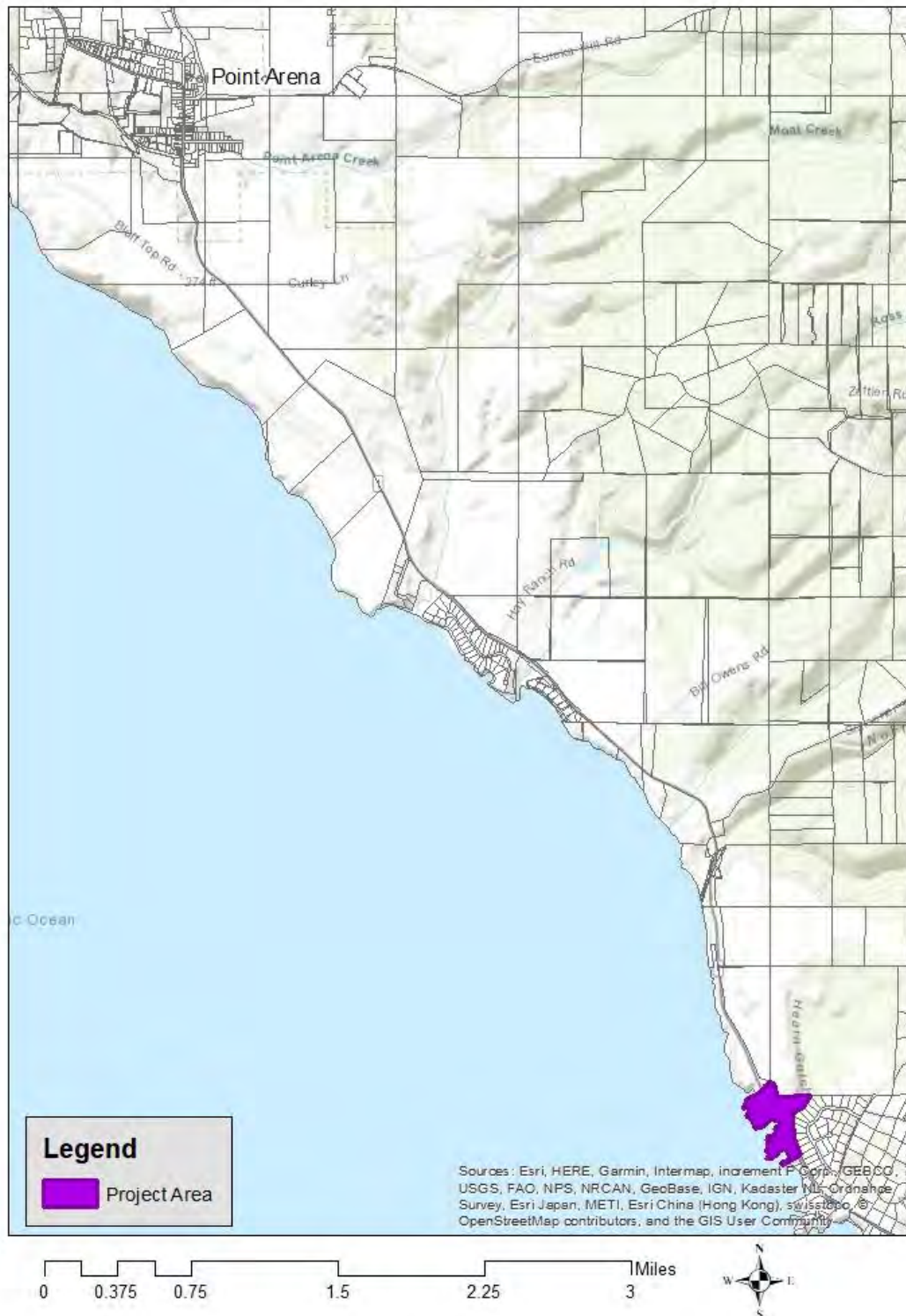


Figure 1. Project location map.

## 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:

#### LeBoube Properties Vegetation Alliances

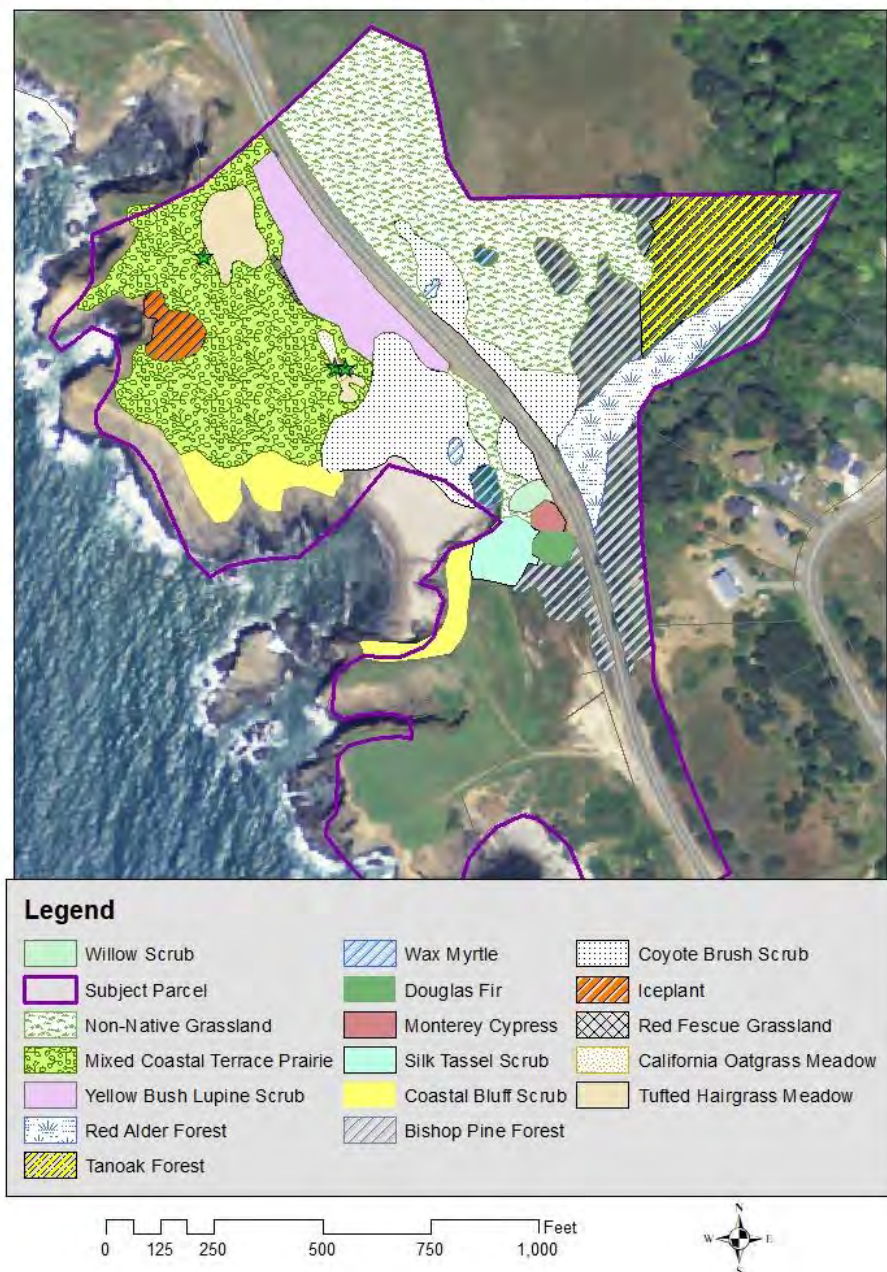


Figure 2. Vegetation alliances map.



**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 hordaceus*), 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.

## Presumed Wetlands

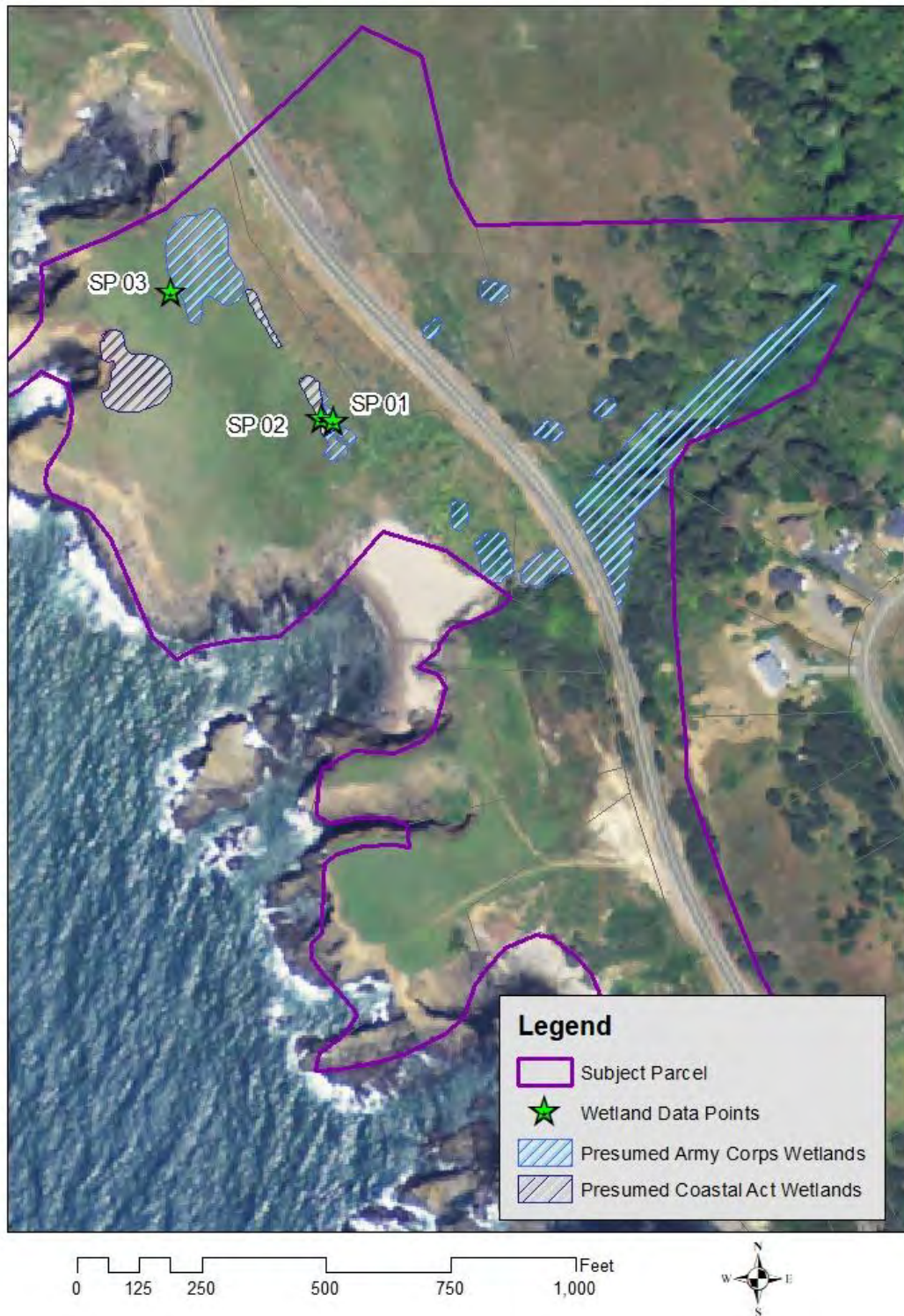


Figure 17. Presumed wetlands.

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.



## Restoration Potential



Figure 18. Potential restoration areas.

APPENDIX A  
Wetland Data Sheets

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Horn Gulch City/County: Mendocino Sampling Date: 25 MAY 2020  
 Applicant/Owner: LaBouche 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 <u>X</u>	No _____	Army Corps 3 Parameter Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u>	No _____	
Wetland Hydrology Present?	Yes <u>X</u>	No _____	
Remarks: <u>Within location dominated by native grasses and with some wetland indicator species such as coyote thistle and blue eyed grass</u>			

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. <u>None</u>				
2. _____				
3. _____				
4. _____				
<b>Sapling/Shrub Stratum (Plot size: <u>20'r</u>)</b> 1. <u>None</u> 2. _____ 3. _____ 4. _____ 5. _____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Herb Stratum (Plot size: <u>10'r</u>)</b> 1. <u>Deschampsia cespitosa</u> 30 Y FACW 2. <u>Danthonia californica</u> 5 N FAC 3. <u>Syrinchium bellum</u> 1 FACW 4. <u>Elygium aramatum</u> 5 FACW 5. <u>Plantago lanceolata</u> 3 FACU 6. <u>Carex rossii</u> 3 NI 7. <u>Briza maxima</u> 1 NI 8. <u>Prunella vulgaris</u> 3 FACU 9. <u>Hypochaeris radicata</u> 6 FACU 10. <u>Lotus corniculata</u> 1 FAC 11. <u>Lysimachia arvensis</u> 1 FAC 58 = Total Cover 29/11.6				
<b>Woody Vine Stratum (Plot size: <u>10'r</u>)</b> 1. <u>None</u> 2. _____ = Total Cover				
% Bare Ground in Herb Stratum <u>40%</u>				
Remarks: <u>Only dominant sp. in this location is Deschampsia cespitosa =&gt; needs dominance test</u>				

## Hern Gulch

Sampling Point: SAD 1

<b>Profile Description:</b> (Describe to the depth needed to document or confirm the absence of indicators.)							
<b>Depth (inches)</b>	<b>Matrix</b>		<b>Redox Features</b>			<b>Texture</b>	<b>Remarks</b>
	<b>Color (moist)</b>	<b>%</b>	<b>Color (moist)</b>	<b>%</b>	Type <sup>1</sup>	Loc <sup>2</sup>	
O-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	—

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.  
**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<sup>3</sup>:**

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>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 ☒ No ☐

**Remarks:** Meets F6 Redox dark surface

## HYDROLOGY

Wetland Hydrology Indicators:		
<div> <div>Primary Indicators (minimum of one required; check all that apply)</div> <div> <div> <input type="checkbox"/> Surface Water (A1)  <input type="checkbox"/> High Water Table (A2)  <input type="checkbox"/> Saturation (A3)  <input type="checkbox"/> Water Marks (B1)  <input type="checkbox"/> Sediment Deposits (B2)  <input type="checkbox"/> Drift Deposits (B3)  <input type="checkbox"/> Algal Mat or Crust (B4)  <input type="checkbox"/> Iron Deposits (B5)  <input checked="" type="checkbox"/> Surface Soil Cracks (B6)  <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)  <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) </div> <div> <input type="checkbox"/> Water-Stained Leaves (B9) (<b>except MLRA 1, 2, 4A, and 4B</b>)  <input type="checkbox"/> Salt Crust (B11)  <input type="checkbox"/> Aquatic Invertebrates (B13)  <input type="checkbox"/> Hydrogen Sulfide Odor (C1)  <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)  <input type="checkbox"/> Presence of Reduced Iron (C4)  <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)  <input type="checkbox"/> Stunted or Stressed Plants (D1) (<b>LRR A</b>)  <input type="checkbox"/> Other (Explain in Remarks) </div> </div> </div> <div> <div>Secondary Indicators (2 or more required)</div> <div> <input type="checkbox"/> Water-Stained Leaves (B9) (<b>MLRA 1, 2, 4A, and 4B</b>)  <input type="checkbox"/> Drainage Patterns (B10)  <input type="checkbox"/> Dry-Season Water Table (C2)  <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)  <input type="checkbox"/> Geomorphic Position (D2)  <input type="checkbox"/> Shallow Aquitard (D3)  <input type="checkbox"/> FAC-Neutral Test (D5)  <input type="checkbox"/> Raised Ant Mounds (D6) (<b>LRR A</b>)  <input type="checkbox"/> Frost-Heave Hummocks (D7) </div> </div>		
<div> <div>Field Observations:</div> <div> <div> <div>Surface Water Present?</div> <div>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></div> <div>Depth (inches): _____</div> </div> <div> <div>Water Table Present?</div> <div>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></div> <div>Depth (inches): _____</div> </div> <div> <div>Saturation Present?</div> <div>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></div> <div>Depth (inches): _____</div> </div> </div> <div> <div>Wetland Hydrology Present?</div> <div>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></div> </div> </div>		
<div>Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:</div>		
<div>Remarks:</div> <div> <p>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 =&gt; meets (B6). High clay content may shrink &amp; swell</p> </div>		



# 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 Boudre 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: W 123° 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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____	Coastal Act one parameter wetland
Hydric Soil Present? Yes _____ No <u>X</u>		
Wetland Hydrology Present? Yes _____ No <u>X</u>		
Remarks: <u>212 feet west of SP01 + composition of grassland abruptly changes between the two locations</u>		

## VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30'r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. <u>None</u>				
2. _____				
3. _____				
4. _____				
<b>Sapling/Shrub Stratum (Plot size: <u>20'r</u>)</b> 1. <u>None</u> 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Herb Stratum (Plot size: <u>10'r</u>)</b> 1. <u>Danthonia californica</u> 60 Y FAC 2. <u>Plantago lanceolata</u> 10 N FACU 3. <u>Grindelia stricta</u> 10   FACW 4. <u>Syntherisma bellum</u> +   FACW 5. <u>Hypochaeris radicata</u> 2   FACU 6. <u>Fragaria chiloensis</u> 4   FACU 7. <u>Prunella vulgaris</u> 1   FACU 8. <u>Stachys rigida</u> +   FACW 9. <u>Briza maxima</u> +   NI 10. <u>Festuca bromoides (Vulpia brom.)</u> 3   FAC 11. <u>Festuca perennis</u> +   NI 92 = Total Cover 46/18.4				
<b>Woody Vine Stratum (Plot size: <u>10'r</u>)</b> 1. <u>None</u> 2. _____ _____ = Total Cover				
% Bare Ground in Herb Stratum <u>10%</u>				
<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____				

Remarks: Meets Dominance test due to prevalence 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		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-17	7.5YR2.5/2	100	—	—	—	—	loam	sand grains visible
17-19+	7.5YR2.5/1	100	—	—	—	—	loamy clay	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils<sup>3</sup>:

- ☐ Histosol (A1)                      ☐ Sandy Redox (S5)  
☐ Histic Epipedon (A2)           ☐ Stripped Matrix (S6)  
☐ Black Histic (A3)                ☐ Loamy Mucky Mineral (F1) (except MLRA 1)  
☐ Hydrogen Sulfide (A4)          ☐ Loamy Gleyed Matrix (F2)  
☐ Depleted Below Dark Surface (A11) ☐ Depleted Matrix (F3)  
☐ Thick Dark Surface (A12)       ☐ Redox Dark Surface (F6)  
☐ Sandy Mucky Mineral (S1)       ☐ Depleted Dark Surface (F7)  
☐ Sandy Gleyed Matrix (S4)       ☐ Redox Depressions (F8)

- ☐ 2 cm Muck (A10)  
☐ Red Parent Material (TF2)  
☐ Very Shallow Dark Surface (TF12)  
☐ Other (Explain in Remarks)

<sup>3</sup>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 ☒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)                      ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)  
☐ High Water Table (A2)                ☐ Salt Crust (B11)  
☐ Saturation (A3)                        ☐ Aquatic Invertebrates (B13)  
☐ Water Marks (B1)                      ☐ Hydrogen Sulfide Odor (C1)  
☐ Sediment Deposits (B2)              ☐ Oxidized Rhizospheres along Living Roots (C3)  
☐ Drift Deposits (B3)                   ☐ Presence of Reduced Iron (C4)  
☐ Algal Mat or Crust (B4)               ☐ Recent Iron Reduction in Tilled Soils (C6)  
☐ Iron Deposits (B5)                    ☐ Stunted or Stressed Plants (D1) (LRR A)  
☐ Surface Soil Cracks (B6)              ☐ Other (Explain in Remarks)  
☐ Inundation Visible on Aerial Imagery (B7)  
☐ Sparsely Vegetated Concave Surface (B8)

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? Yes ☐ No ☒ Depth (inches):             
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

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 Bache 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: <u>Location chosen is 10ft outside and downhill of a Deschampsia cespitosa patch with shank cracks in soil that is assumed to be wetland similar to that described by SPADE</u>	

## VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'r</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33%</u> (A/B)
1. <u>None</u>				
2. _____				
3. _____				
4. _____				
<b>Sapling/Shrub Stratum (Plot size: <u>20'r</u>)</b> 1. <u>None</u> 2. _____ 3. _____ 4. _____ 5. _____ = Total Cover				<b>Prevalence Index worksheet:</b> 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 = _____
<b>Herb Stratum (Plot size: <u>10'r</u>)</b> 1. <u>Poa compressa</u> 15 Y FACU 2. <u>Plantago lanceolata</u> 20 Y FACU 3. <u>Grindelia stricta</u> 15 Y FACU 4. <u>Achillea millefolium</u> 2 N FACU 5. <u>Festuca bromoides (vulpia)</u> 10   FAC 6. <u>Fragaria chiloensis</u> 7   FACU 7. <u>Hordeum brachneothrum</u> 1   FACU 8. <u>Rumex acetosella</u> +   FACU 9. <u>Bromus hordeaceus</u> 7   FACU 10. <u>Bromus maritimus</u> 2 N 11. <u>Deschampsia cespitosa</u> 1 V FACW 80 = Total Cover 40/16				
<b>Woody Vine Stratum (Plot size: <u>10'r</u>)</b> 1. <u>None</u> 2. _____ = Total Cover				
% Bare Ground in Herb Stratum <u>20</u>				
Remarks: _____				

SOIL Hern GulchSampling Point: SP03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-21"	7.5YR2.5/1	100	—	—	—	—	loam	sand grains visible

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils<sup>3</sup>:

- |  |   |
|--|---|
| <input type="checkbox"/> Histosol (A1)                     | <input type="checkbox"/> Sandy Redox (S5)                         |
| <input type="checkbox"/> Histic Epipedon (A2)              | <input type="checkbox"/> Stripped Matrix (S6)                     |
| <input type="checkbox"/> Black Histic (A3)                 | <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) |
| <input type="checkbox"/> Hydrogen Sulfide (A4)             | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                 |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Matrix (F3)                     |
| <input type="checkbox"/> Thick Dark Surface (A12)          | <input type="checkbox"/> Redox Dark Surface (F6)                  |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)          | <input type="checkbox"/> Depleted Dark Surface (F7)               |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)          | <input type="checkbox"/> Redox Depressions (F8)                   |

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): None present to 21" deep

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)

Secondary Indicators (2 or more required)

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) | <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Salt Crust (B11)   | <input type="checkbox"/> Drainage Patterns (B10)                           |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Aquatic Invertebrates (B13)                              | <input type="checkbox"/> Dry-Season Water Table (C2)                       |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                               | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)         |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)            | <input type="checkbox"/> Geomorphic Position (D2)                          |
| <input type="checkbox"/> Drift Deposits (B3)                       | <input type="checkbox"/> Presence of Reduced Iron (C4)                            | <input type="checkbox"/> Shallow Aquitard (D3)                             |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)               | <input type="checkbox"/> FAC-Neutral Test (D5)                             |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A)                  | <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)                    |
| <input type="checkbox"/> Surface Soil Cracks (B6)                  | <input type="checkbox"/> Other (Explain in Remarks)                               | <input type="checkbox"/> Frost-Heave Hummocks (D7)                         |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) |   |  |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   |   |  |

Field Observations:

Surface Water Present? Yes \_\_\_\_\_ No \_\_\_\_\_ Depth (inches): \_\_\_\_\_

Water Table Present? Yes \_\_\_\_\_ No \_\_\_\_\_ Depth (inches): \_\_\_\_\_

Saturation Present? Yes \_\_\_\_\_ No \_\_\_\_\_ Depth (inches): \_\_\_\_\_  
(includes capillary fringe)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  
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 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	<i>Raphinus sativus</i>	Limited	10	45	
bull thistle	<i>Cirsium vulgare</i>	Moderate	2	9	
rattlesnake grass	<i>Briza maxima</i>	Limited	5	22.5	
wild oat	<i>Avena barbata</i>	Moderate	2	9	
sow thistle	<i>Sonchus asper</i>	Non Native	2	9	

B 500 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
Italian thistle	<i>Carduus pycnocephalus</i>	Moderate	1	5	
bird's foot trefoil	<i>Lotus corniculatus</i>	Non-Native	1	5	

C 1000 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
star thistle	<i>Centaurea sp.</i>	Mod to High	1	10	
wild radish	<i>Raphinus sativus</i>	Limited	1	10	
Italian thistle	<i>Carduus pycnocephalus</i>	Moderate	3	30	
field mustard	<i>Brassica sp.</i>	Limited to			

Exhibit 10

Draft Offsite Habitat Mitigation and Monitoring Plan

CDP Application No. 1-22-0446 (Caltrans)

Elk Creek Bridge Replacement Project

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D 1000 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
bull thistle	<i>Cirsium vulgare</i>	Moderate	15	150	
field mustard	<i>Brassica sp.</i>	Limited to Mod	20	200	

E 3500					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
ripgut brome	<i>Bromus diandrus</i>	Moderate	3	105	
Italian thistle	<i>Carduus pycnocephalus</i>	Moderate	4	140	
sow thistle	<i>Sonchus asper</i>	Non Native	2	70	
rattlesnake grass	<i>Briza maxima</i>	Limited	40	1400	
bird's foot trefoil	<i>Lotus corniculatus</i>	Non-Native	2	70	

F 1200 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
rattlesnake grass	<i>Briza maxima</i>	Limited	40	480	
wild oat	<i>Avena barbata</i>	Moderate	2	24	
sow thistle	<i>Sonchus asper</i>	Non Native	1	12	
Italian thistle	<i>Carduus pycnocephalus</i>	Moderate	2	24	
bird's foot trefoil	<i>Lotus corniculatus</i>	Non-Native	4	48	
wild radish	<i>Raphinus sativus</i>	Limited	30	360	

G 1850 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
rattlesnake grass	<i>Briza maxima</i>	Limited	25	462.5	
bird's foot trefoil	<i>Lotus corniculatus</i>	Non-Native	5	92.5	
sow thistle	<i>Sonchus asper</i>	Non Native	4	74	
Italian thistle	<i>Carduus pycnocephalus</i>	Moderate	2	37	

H 350 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
ripgut brome	<i>Bromus diandrus</i>	Moderate	4	14	
field mustard	<i>Brassica sp.</i>	Limited to Mod	3	10.5	
sow thistle	<i>Sonchus asper</i>	Non Native	1	3.5	
wild oat	<i>Avena barbata</i>	Moderate	1	3.5	
rattlesnake grass	<i>Briza maxima</i>	Limited	7	24.5	
bird's foot trefoil	<i>Lotus corniculatus</i>	Non-Native	3	10.5	
Italian thistle	<i>Carduus pycnocephalus</i>	Moderate	3	10.5	

I 475 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
bird's foot trefoil	<i>Lotus corniculatus</i>	Non-Native	9	42.75	
rattlesnake grass	<i>Briza maxima</i>	Limited	1	4.75	
bull thistle	<i>Cirsium vulgare</i>	Moderate	1	4.75	
sow thistle	<i>Sonchus asper</i>	Non Native	1	4.75	

J 6,500 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
bird's foot trefoil	<i>Lotus corniculatus</i>	Non-Native	50	3,250	

K 8,500 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
sow thistle	<i>Sonchus asper</i>	Non Native	5	425	

L 2,000 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
field mustard	<i>Brassica sp.</i>	Limited to Mod	3	60	
Italian thistle	<i>Carduus pycnocephalus</i>	Moderate	7	140	

M 1,000 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
Italian thistle	<i>Carduus pycnocephalus</i>	Moderate	35	350	
sow thistle	<i>Sonchus asper</i>	Non Native	4	40	
field mustard	<i>Brassica sp.</i>	Limited to Mod	2	20	

N 5,750 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
Italian thistle	<i>Carduus pycnocephalus</i>	Moderate	5	287.5	
field mustard	<i>Brassica sp.</i>	Limited to Mod	40	2300	
bull thistle	<i>Cirsium vulgare</i>	Moderate	2	115	

O 28,000 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
field mustard	<i>Brassica sp.</i>	Limited to Mod	30	8,400	

P 4,000 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
field mustard	<i>Brassica sp.</i>	Limited to Mod	25	1,000	
Italian thistle	<i>Carduus pycnocephalus</i>	Moderate	5	200	
bull thistle	<i>Cirsium vulgare</i>	Moderate	2	80	
poison hemlock	<i>Conium maculatum</i>	Moderate	3	120	

Q 3,750 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
Italian thistle	<i>Carduus pycnocephalus</i>	Moderate	7	262.5	
purple velvet grass	<i>Holcus lanatus</i>	Moderate	1	37.5	
field mustard	<i>Brassica sp.</i>	Limited to Mod	3	112.5	

R 15,225 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
iceplant	<i>Carpobrotus chilensis</i>	Moderate	60	9,135	

S 90 sf					
Common Name	Latin Name	Invasiveness	% in Polygon	sf coverage in polygon	
Monterey cypress	<i>Hesperocyparis macrocarpa</i>	Non native	100	90	

Sincerely,

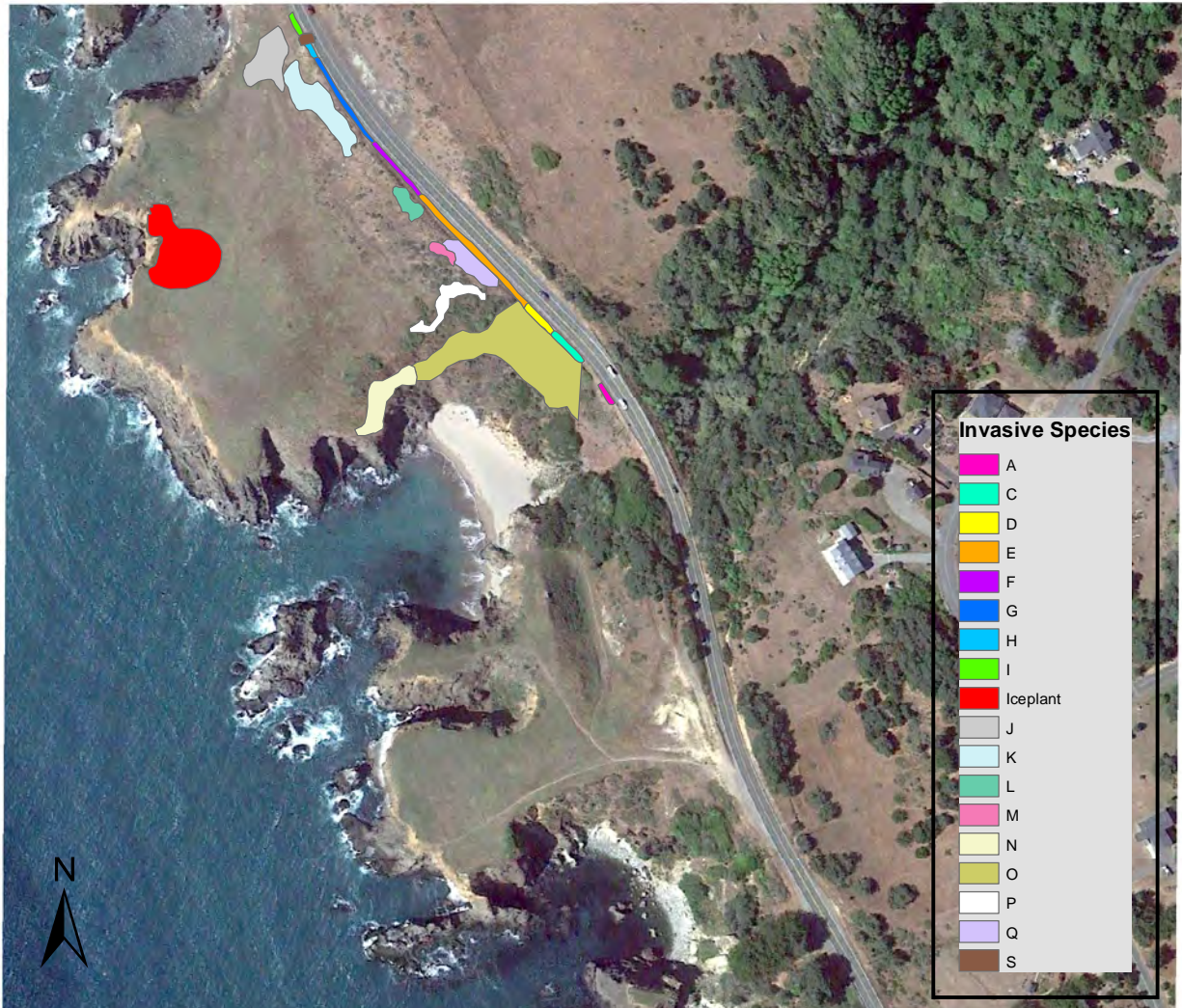


Teresa R Spade, AICP

Spade Natural Resources Consulting



# LaBoube Parcels Invasive Species





**DEPARTMENT OF TRANSPORTATION****NORTH REGION ENVIRONMENTAL**

1656 Union Street

Eureka, CA 95501

(707) 498-7483

[www.dot.ca.gov](http://www.dot.ca.gov)

TTY 711



*Making Conservation  
a California Way of Life.*

June 29, 2022

Melissa Kramer, North Coast District Manager  
California Coastal Commission  
1385 8<sup>th</sup> St, Suite 130  
Arcata, CA 95501

Attn: Peter Allen

**RE: Off-Site Habitat Mitigation Saunder's Landing as mitigation for The Roadway Projects**

Dear Ms. Kramer:

The California Department of Transportation (Caltrans) is providing this funding assurance letter, at the request of California Coastal Commission staff, for the *Off-Site Habitat Mitigation Saunder's Landing* (APNs 142-010-53 & 142-010-54). This letter, presented with the draft Habitat Mitigation and Monitoring Proposal (HMMP), submitted as part of the related Coastal Development Permit (CDP) application, further demonstrates Caltrans' commitment to meeting all CDP mitigation requirements pursuant to the California Coastal Act.

The HMMP, created in close collaboration with Coastal Commission staff, details the measures Caltrans will take to off-set impacts to jurisdictional resources associated with the following three projects, collectively referred to as the Roadway Projects: Cleone Shoulder Widening Project (01-0G600), Elk Creek Bridge Replacement Project (01-0E110), and Jack Peters Creek Bridge Widening Project (01-43484).

Typically, an HMMP sufficiently demonstrates Caltrans' commitment to fulfilling all CDP mitigation requirements, however Caltrans recognizes this situation is unique. The original property owner passed away during purchasing discussions; therefore, in light of the potential for the Saunder's Landing property to go through legal probate before acquisition can be completed, Caltrans is providing additional financial assurance to the Commission staff to demonstrate the feasibility of the planned mitigation. A letter of Mutual Interest expressing intent to sell from the daughters of the deceased property owner has also been acquired and provided to Commission staff (Attachment 1).

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

**California Department of Transportation — North Region Environmental**

**District 1**

1656 Union Street, Eureka, CA 95501

**District 2**1657 Riverside Drive, Redding  
1031 Butte Street, Redding, CA 96001

**Exhibit 11 – Funding Assurance and Mutual  
Interest Letters for Mitigation Property**  
CDP Application No. 1-22-0446 (Caltrans)  
Elk Creek Bridge Replacement Project  
Page 1 of 35

Caltrans is committed to funding the full cost of all measures to minimize and fully mitigate project impacts from the aforementioned Roadway Projects. Affected species and their habitats may include Bishop pine, wetlands and non-wetland waters, coastal terrace prairie, and riparian habitats at the designated mitigation ratios approved by the Coastal Commission and consistent with any other terms of special conditions related to mitigation requirements. Mitigation will include compensation for the temporary and permanent loss of habitat incidental to the construction of the Roadway Projects. Mitigation will be achieved through a combination of restoration and preservation, where the property will be purchased in the name of the Mendocino Land Trust. The purchase price of \$700,000 will be consistent with the amount assessed in the previously provided March 2022 appraisal (Attachment 2).

Caltrans looks forward to working with the California Coastal Commission to further plan, design, and implement the measures necessary to satisfy Caltrans' mitigation obligations for the Roadway Projects. This letter intends to formally acknowledge our obligation with the proposed mitigation described above.

Should you have any questions, please contact Lorna McFarlane, Sr. Coastal Liaison, at [Lorna.mcfarlane@dot.ca.gov](mailto:Lorna.mcfarlane@dot.ca.gov) or (707) 672-3593.

Sincerely,



Suzanne Melim  
Division Chief, North Region Environmental

c: Lorna McFarlane, Caltrans  
Stephanie Fredrickson, Caltrans  
Wesley Stroud, Caltrans  
Brandon Larsen, Caltrans  
Amber Leavitt, CA Coastal Commission  
Peter Allen, CA Coastal Commission

Attachments: 1. Letter of Mutual Interest  
2. Appraisal Report-Update, April 2022

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

**California Department of Transportation — North Region Environmental**



## 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.

2 Letter of Mutual Interest



A blue ink signature of Conrad Kramer, written in a cursive style.

Conrad Kramer, Executive Director  
Mendocino Land Trust

5-17-2022

Date

John Walton, President  
Redwood Coast Land Conservancy Board of Directors

Date

DocuSigned by:  
A blue ink signature of Stine LaBoube, written in a cursive style.

91A51410197744D...  
Stine LaBoube

Co-Heir to estate of Kenneth LaBoube

5/15/2022

Date

DocuSigned by:  
A blue ink signature of Kivi Simone LaBoube, written in a cursive style.

11CAF3B38A9B451...  
Kivi Simone LaBoube

Co-Heir to estate of Kenneth LaBoube

5/16/2022

Date

2 Letter of Mutual Interest

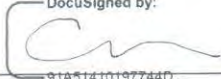


Conrad Kramer, Executive Director  
Mendocino Land Trust

Date

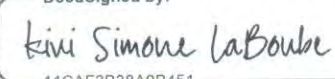
  
John Walton, President  
Redwood Coast Land Conservancy Board of Directors

5/16/22  
Date

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91A51410197744D...  
Stine LaBoube  
Co-Heir to estate of Kenneth LaBoube

5/15/2022

Date

DocuSigned by:  
  
11CAF3B38A9B451...  
Kivi Simone LaBoube  
Co-Heir to estate of Kenneth LaBoube

5/16/2022

Date

## APPRAISAL REPORT - UPDATE



THE IVERSON POINT - LABOUBE PROPERTY

EFFECTIVE DATE OF APPRAISAL: MARCH 31, 2022

PREPARED FOR:  
THE CALIFORNIA STATE COASTAL CONSERVANCY



A P P R A I S A L A S S O C I A T E S

*Real Estate Appraisal & Consultation Services*

April 14, 2022

Lisa Ames  
CA State Coastal Conservancy  
1515 Clay Street, 10th Floor  
Oakland, CA 94612

Re: The Iverson Point - LaBoube Property

Dear Ms. Ames,

At your request, the above referenced property appraisal has been updated with consideration for the market as of March 31, 2022. This appraisal update is based on the Narrative Appraisal Report performed by Appraisal Associates with an effective date of value as of August 14, 2019.

The intended use of the original appraisal was to develop an opinion of the Market Value to support the value of the subject property for proposed acquisition. The intended users of the original report were the client - the Redwood Coast Land Conservancy, as well as agencies involved in funding the proposed acquisition including the CA Department of General Services, the California State Coastal Conservancy and their affiliates.

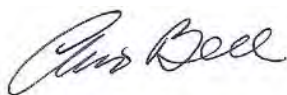
This letter update-addendum to the original report is made with the same intended use and for the same intended users. This letter update-addendum is to be considered a part of, and cannot be fully understood without the report dated September 13, 2019, with an effective date of value as of August 14, 2019.

Within this assignment, I have reviewed the original report, researched the market for new comparable properties and analyzed real estate market trends since the original date of value. The subject property was visited again for this assignment, most recently on March 31, 2022. There is reported to be no significant changes to the subject property since the original date of value. As a result, I have concluded that the updated fee simple market value of the subject property as of March 31, 2022, is in the amount of \$700,000.

This letter is to be viewed as an extension of the Appraisal Report noted above and should only be used in conjunction with said appraisal. To the best of my knowledge, the subject property has not undergone any significant changes since the 2019 Appraisal Report.

It has been a pleasure to assist you. If I may be of further service to you, please let me know.

Respectfully Submitted,



Chris Bell, MAI

California Certified General Appraiser, #AG023519

## SUMMARY OF SALIENT FACTS

CLIENT:	The California Coastal Conservancy
REPORT DATE:	April 14, 2022
SUBJECT PROPERTY:	The Iverson Point - LaBoube property includes a total of roughly twelve acres bisected by Highway One in coastal Mendocino County, at Iverson Point, just north of Hearn Gulch and the community of Gualala, and south of Point Arena.
INTENDED USERS:	The Client (namely the California Coastal Conservancy) is the intended user of this report. Other intended users include agencies involved in funding the proposed acquisition including the CA Department of General Services and its affiliates.
INTENDED USE:	The intended use of this appraisal update is to support the value of the subject property for proposed acquisition. The report is to be used to facilitate acquisition of the subject property by the California Coastal Conservancy. The client is the main intended user of the report. This appraisal update is not intended for any other use. The appraiser is not responsible for unauthorized use of this appraisal update.
ASSIGNMENT OBJECTIVE:	To develop an opinion of the Market Value of the subject property. This appraisal update report estimates the fee simple interest in the value of the subject property (land only). The definition of Market Value is included on page 10 of the original report.
UPDATED DATE OF VALUE:	March 31, 2022
INTEREST VALUED:	The Fee Simple interest is estimated in this appraisal update.
OPINION OF VALUE:	\$700,000  <i>Based on the Scope of Work cited within this report, as of the effective date of value, and subject to the extraordinary assumptions and hypothetical conditions listed.</i>

## Conditions of the Assignment

EXTRAORDINARY                      None

ASSUMPTIONS:

HYPOTHETICAL                      None

CONDITIONS:

## SCOPE OF WORK

SCOPE OF WORK:                      In preparing this appraisal update, the appraiser:

- Reviewed the original appraisal report, with a date of value as of August 14, 2019
- Discussed the subject property with the client and the property owner's representative
- Re-visited the subject property
- gathered information on comparable sales, listings and market data
- confirmed all comparables with at least one of the parties involved in the transaction and visited each sale
- analyzed data and applied the sales comparison approach to value.

VALUE APPROACHES USED:                      The income approach and the cost approach were not utilized in this appraisal update. It is believed that most market participants and most appraisers would agree that the cost approach and the income approach are not applicable to this type of property as a whole.

REPORT OPTION: This is an appraisal update of a Narrative Appraisal Report and is made in accordance with Standards Rule 2-2(b) of the Uniform Standards of Professional Appraisal Practice. As such, it presents discussion of the data, reasoning and/or analyses that were used in the appraisal process to develop the appraiser's opinion of value. Supporting documentation concerning the data, reasoning, and analyses is retained in the appraiser's work-file. The appraiser's opinions and conclusions set forth in this update are intended to be understood without additional information. This appraisal update should be considered as a part of the original appraisal, with a date of value as of August 14, 2019.

DATE OF INSPECTION: The subject property was re-inspected for this assignment most recently on March 31, 2022, which is the effective date of value for this appraisal update.



## CERTIFICATION OF THE APPRAISER

I hereby certify that, to the best of my knowledge and belief:

- the statements of fact contained in this report are true and correct.
- the reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are my personal, impartial, and unbiased professional analyses, opinions, and conclusions.
- I have no present or prospective interest in the property that is the subject of this report, and I have no personal interest with respect to the parties involved.
- I have performed no services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment, other than the Original Appraisal, dated September 13, 2019, with a date of value as of August 14, 2019.
- I have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.
- my engagement in this assignment was not contingent upon developing or reporting predetermined results.
- my compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value, or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.
- my analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the *Uniform Standards of Professional Appraisal Practice*.
- I have made a personal inspection of the property that is the subject of this report.
- no one provided significant real property appraisal assistance to the person signing this certification.
- the reported analyses, opinions and conclusions were developed, and this report has been prepared, in conformity with the requirements of the Code of Professional Ethics and the Standards of Professional Appraisal Practice of the Appraisal Institute.

- the use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.
- as of the date of the report, I have completed the requirements of the continuing education program of the Appraisal Institute.



Chris Bell, MAI

State of California General Real Estate Appraiser, Number AG 023519.

## THE ORIGINAL REPORT

This appraisal update is based on the original report with a date of value as of August 14, 2019. The original report was intended for the use of The Redwood Coast Land Conservancy, to assist the intended users in decision making regarding possible acquisition of the subject property.

The subject property includes an irregularly-shaped tract of land within two Mendocino County Assessor's parcels and includes a total of roughly twelve acres. The property is vacant, unimproved Ocean-front land, and is bisected by Highway One. The value conclusion for the subject property in the original report, as of August 14, 2019, was estimated to be in the amount of \$700,000.

The Highest and Best Use for the property was estimated to be for coastal residential development, subject to Mendocino County and State Coastal Commission requirements.

### Assessor's Parcel Numbers

Mendocino County, APNos. 142-010-53-00 and 142-010-54-00

### Aerial Image



## CHANGES TO THE SUBJECT PROPERTY

According to the client and the property owner's representative, there have been no physical changes to the subject property since the date of the original appraisal. The property was re-inspected for this appraisal update on March 31, 2022, which is the effective date of this appraisal update. Cindy Kennedy, representing the property owner, was afforded the opportunity to accompany the site visit.

The subject property includes a single rural homesite of roughly 12.0 acres (total) on both sides of Highway One, and with Pacific Ocean frontage. The property exists as a single rural parcel (even though it includes two, non-contiguous Assessor's parcels). The property is presently raw land, with no developed water or utilities, but with panoramic views to both the north and south along the Pacific Ocean frontage.

## UPDATED MARKET DATA SEARCH

Three new sales of Mendocino coastal rural properties in the subject's area, as well as one pending sale, were found for this update. Discussion with several brokers and real estate agents revealed that there is a very limited supply of Ocean-front properties for sale in the area, and there has been only a very limited amount of activity in the market over the past several years. The new sales are summarized in the table below. The Comparables are numbered 5 through 8, to coincide with the original report.

### MARKET DATA SUMMARY - COASTAL MENDOCINO HOMESITE SALES

Sale No.	Property	Sale Date	Price	Size	Remarks
5	23016 Hwy One Point Arena	9/20	\$635,000	4.8 Acres	Ocean-front parcel near Coast Guard Reservation within BLM Stornetta Public Lands south of Point Arena Lighthouse
6	35700 Hwy One Anchor Bay	6/21	\$829,000	5.1 Acres	Ocean-front parcel south of Anchor Bay, 2006 perc-test supported 10-unit B&B development
7	46071 Iversen Rd Point Arena	8/21	\$835,000	18.9 Acres	Inland coastal parcel within the Island Cove Estates. Private setting with frontage on Iversen Road
8	36420 Hwy One Gualala	Pending	\$575,000 Asking	1.7 Acres	Small Ocean-fronting parcel - pending sale.



**Comparable No. 5** was the September, 2020 sale of a 4.8-acre property with Ocean-frontage. The property sold for \$635,000 and included an “L”-shaped parcel adjacent to the former US Coast Guard Reservation, within the BLM Stornetta Public Lands preserve. The property is accessed from Hwy One via a roughly one-mile driveway through the Stornetta Public Lands. The site is open and winds-swept, but offers privacy due to the somewhat remote location. The property included undeveloped vacant land. Utilities were available from the neighboring Coast Guard property (which is no longer in use).

**Comparable No. 6** included a 5.1-acre, Ocean-fronting parcel that sold in June, 2021 for \$829,000. The property was located off of Hwy One, just south of the community of Anchor Bay. The property has a grove of Eucalyptus and Redwood that offers privacy from the Highway. There was no developed water, but the property had reportedly passed a perc test in 2006, indicating suitability for a ten-unit Bed & Breakfast development. Utilities were available from adjacent properties and lines that run along Hwy One.

**Comparable No. 7** was the August, 2021 sale of an 18.9-acre property off of Iversen Road that sold for \$835,000. The property was located inland from the coast, in the Island Cove Estates, and had the coastal influence and access to Ocean. The property fronts on Iversen Road and includes some tree cover, with a roughly 8-acre private meadow. There was no developed water or septic, but utilities were available from lines along Iversen Road and serving the Island Cove community.

**Comparable No. 8** is the pending sale of a small, 1.7-acre Ocean fronting parcel just north of Gualala. The property has been listed for sale since September, 2021 and is presently pending sale, due to close in mid April, 2022. The property has no developed water or septic, and there are utilities available from lines that run along Hwy One.

## DIRECT COMPARISON

Prior to any adjustment, the three new sales ranged in price from \$635,000 (Comp No. 5) to \$835,000 (Comp No. 7), and the fourth Comparable has a pending sales price of \$575,000. The sold properties all included a single coastal parcel acquired by an owner-user - who plan to develop the property to coastal residential use. The comparables ranged in size from about 1.7 acres (for the pending sale) to nearly 19 acres (for Comp No. 7). The following analysis explains the adjustments made to the comparables used to support the value of the subject property. The unit of comparison used in this analysis is the overall price paid for the property, which is the unit of comparison typically used in the market for rural residential properties.

All of the comparables included the fee simple interest in the sold property, and none of the properties included any financing that affected the sales prices - thus, no adjustments are made for **Property Rights Conveyed** or for **Financing**. No adjustments are made for **Conditions of Sale**, as all of the properties sold under normal sale conditions. It is noted that Comp No. 7 included a property that was listed and sold by the owner, who was a licensed real estate agent. The seller reported that she took a traditional commission as payment for listing/selling the property, and the property was sold under normal sales conditions.

None of the properties included any **Expenditures After the Sale** that required an adjustment. None of the properties included any **Non-Realty Components**.

**Market Conditions** have been fairly stable to slightly improving over the past several years, as the market comes out of the recent downturn. The sales date back to September, 2020, with the most recent sale still pending, expecting to close in mid-April, 2022. After consideration, none of the sales are adjusted for market conditions.

**Location:** This factor considers the physical location of the property as well as the access to the property and its setting. All of the comparables are considered to have similar overall locations compared to the subject, as all four properties are located in the rural coastal area of Mendocino County. All of the Comparables are considered to have similar access compared to the subject, as each of the properties (including the subject) has direct access from a well-traveled, county maintained road (typically Highway One). The subject's overall setting is somewhat less than desirable, mainly due to its open exposure and lack of privacy. However, the Ocean frontage is viewed as a positive, as there are very few properties with Pacific Ocean frontage. Three of the comparable sales also had Ocean-frontage. Comp No. 7 did not, although it had a much more private setting compared with the subject. Overall, adjustments to Comp No. 7 for location are off-setting (upward for its lack of Ocean frontage - downward for its better privacy). Additional discussion regarding differences in setting is included in the Physical Characteristics discussion below.

**Physical Characteristics:** Adjustments for physical characteristics are made after consideration for differences between the comparables and the subject. Most physical characteristics are considered similar, or have already been addressed under the "setting" discussion within the Location analysis. Although the properties differ in size, there is insufficient data to support quantitative adjustments for size differences, as each property included one rural homesite. Further, the subject includes an open, wind-swept, bluff-top setting, which is considered below average for Mendocino coastal homesites. Comp No. 5 also included an open, wind-swept set-

ting, but it was further removed from Hwy One, offering better privacy. Comp No. 6 had a better setting compared with the subject, offering privacy, protection from the wind and yet panoramic Ocean views. Comp No. 7 had better privacy and protection from the wind, but lacked the view shed found on the subject property. Comp No. 8 was smaller, but has some protection and privacy. Again, adjustments for differences in size and setting are difficult to quantify, but are noted with either a "+" or a "-" in the adjustment grid (on the following page).

After adjustments, the three sales had value indications of between \$635,000 and \$835,000, which supports the value conclusion from the original appraisal.

**Economic Characteristics** are considered similar between the sales and the subject and no adjustments are made. All of the comparables had rural homesite potential as their primary Use, and no further adjustments are made.

After comparison, each of the sales are adjusted for a variety of factors. After adjustment, the sales support an overall value range of roughly \$635,000 to \$835,000 for the subject parcel. The three sales are considered to provide an adequate range of value, as shown in the adjustment grid below. After adjustments, the estimated value for the subject property through direct comparison with the three recently sold comparables is estimated to be in the amount of \$700,000 (the same value estimated in the original report).

## CONCLUSIONS

The value of the subject LaBoube Property at Iversen Point has been updated after consideration for three new coastal sales and one current listing - pending sale. After consideration and re-analysis within the Sales Comparison Approach, the value of the subject property is estimated to be in the updated amount of \$700,000 - the same value estimated in the original report.

This appraisal update has been prepared for the client; the CA State Coastal Conservancy, for decision-making purposes related to acquisition of the subject property. This appraisal update is intended to be used only with the original Appraisal Report with a date of value as of August 14, 2019 and is considered an addendum to that original report. The appraiser cannot recommend any other use, by any other users.

## COMPARABLE ADJUSTMENT GRID

Property	LaBoube Property	Comp No. 5 23016 Hwy One	Comp No. 6 35700 Hwy One	Comp No. 7 46071 Iversen Rd	Comp No. 4 36420 Hwy One
Location	Iverson Point	Point Arena	Anchor Bay	Iversen Point	Gualala
Date of Sale		9/20	6/21	8/21	Pending
Sales Price		\$635,000	\$829,000	\$835,000	\$575,000
Size	12 Acres	4.8 Acres	5.1 Acres	18.9 Acres	1.7 Acres
Price per Acre		N/A	N/A	N/A	N/A
Property Rights Conveyed	Fee Simple	Fee Simple	Fee Simple	Fee Simple	Fee Simple
Financing Terms		Conventional	Cash to Seller	Cash to Seller	Cash to Seller
Sale Conditions		Normal	Normal	Normal	Normal
Expenditures		None	None	None	None
Non Realty Components		None	None	None	None
Market Conditions		Similar	Similar	Similar	Similar
Location		Similar	Similar	Similar	Similar
Adjusted Value		\$635,000	\$829,000	\$835,000	\$575,000
Physical Characteristics					
Size	12 Acres	4.8 Acres (+)	5.1 Acres (+)	18.9 Acres (-)	1.7 Acres (+)
Setting	Below Average	Similar	Superior (-)	Offsetting	Similar
Permits	None	Similar	Superior (-)	Similar	Similar
Economic Character.		Similar	Similar	Similar	Similar
Use		Similar	Similar	Similar	Similar
Net Adjustment		(+)	(-)	(-)	(+)
Indicated Value		\$635,000	\$829,000	\$835,000	\$575,000



# ADDENDUM

## EXHIBIT A

### BASIC ASSUMPTIONS AND LIMITING CONDITIONS

## BASIC ASSUMPTIONS AND LIMITING CONDITIONS

This appraisal is subject to the following assumptions and limiting conditions:

1. That the title to the property is marketable and free of all liens and encumbrances, except as noted in the report.
2. That no responsibility is assumed by the appraiser for the legal description or for matters including legal or title considerations.
3. That the descriptions and plats furnished are correct.
4. That information obtained from others is considered to be reliable, but no guarantee is made as to the absolute correctness of this information.
5. This appraisal report sets forth all of the limiting conditions affecting the analyses, opinions and conclusions contained in this report.
6. That there are no hidden or unapparent conditions of the property, subsoil, or structures that render it more or less valuable. No responsibility is assumed for such conditions or for arranging for engineering studies that may be required to discover them.
7. That there is full compliance with all applicable federal, state, and local environmental regulations and laws unless non-compliance is stated, defined, and considered in the appraisal report.
8. That all applicable zoning and use regulations and restrictions have been complied with, unless a nonconformity has been stated, defined, and considered in the appraisal report.
9. That all required licenses, certificates of occupancy, consents, or other legislative or administrative authority from any local, state, or national government or private entity or organization have been or can be renewed for any use on which the value estimate contained in this report is based.
10. Unless otherwise stated in this report, the existence of hazardous material, which may or may not be present on the property, was not observed by the appraiser. The appraiser has no knowledge of the existence of any such materials on or in the property. The appraiser, however, is not qualified to detect such substances. The presence of substances such as asbestos, urea-formaldehyde foam insulation, petroleum contaminants, or other potentially hazardous materials may affect the value of the property. The value estimate is predicated on assumption that there is no such material on or in the property that would cause a loss in value. No responsibility is assumed for any such conditions, or for any expertise or engineering knowledge required to discover them. The client is urged to retain an expert in this field, if desired.
11. The Americans with Disabilities Act (ADA) became effective January 26, 1992. A specific compliance survey and analysis of this property to determine whether or not it is in conformity with the various and detailed analysis of the requirements of the ADA is beyond the scope of this appraisal.

It is possible that a compliance survey of the property, together with a detailed analysis of the requirements of the ADA, could reveal that the property is not in compliance with one or more of the requirements of the Act. If so, this fact could have a negative effect upon the value of this property. Since no direct evidence relating to this issue was provided, this appraisal does not consider possible non-compliance with the requirements of the ADA.

12. That the utilization of the land and improvements is within the boundaries or property lines of the property described and that there is no encroachment or trespass unless noted in the report.
13. That the distribution, if any, of the total valuation in this report between land and improvements applies only under the stated program of utilization. The separate allocations for land and buildings must not be used in conjunction with any other appraisal and are invalid if so used.
14. Possession of this report, or a copy thereof, does not carry with it the right of publication. It may not be used for any purpose by any person other than the party to whom it is addressed without written consent of the appraiser, and in any event only with proper written qualification and only in its entirety.
15. Disclosure of the contents of this appraisal report is governed by the By-Laws and Regulations of the Appraisal Institute. Neither all nor any part of the contents of this report (especially any conclusions as to the value, the identity of the appraiser or the firm with which he is connected, or any reference to the Appraisal Institute or to the MAI designation) shall be disseminated to the public through advertising media, public relations media, news media, sales media, or any other public means of communication without the prior written consent and approval of the appraiser.
16. This appraisal report has been made in conformity with and is subject to the requirements of the Code of Professional Ethics of the Appraisal Institute.

## EXHIBIT B

### MARKET DATA SHEETS AND MAPS



## MARKET DATA SUMMARY - COASTAL MENDOCINO HOMESITE SALES

Sale No.	Property	Sale Date	Price	Size	Remarks
5	23016 Hwy One Point Arena	9/20	\$635,000	4.8 Acres	Ocean-front parcel near Coast Guard Reservation within BLM Stornetta Public Lands south of Point Arena Lighthouse
6	35700 Hwy One Anchor Bay	6/21	\$829,000	5.1 Acres	Ocean-front parcel south of Anchor Bay, 2006 perc-test supported 10-unit B&B development
7	46071 Iversen Rd Point Arena	8/21	\$835,000	18.9 Acres	Inland coastal parcel within the Island Cove Estates. Private setting with frontage on Iversen Road
8	36420 Hwy One Gualala	Pending	\$575,000 Asking	1.7 Acres	Small Ocean-fronting parcel - pending sale.

## MARKET DATA MAP - COASTAL MENDOCINO HOMESITE SALES



# Comparable No. 5

23016 S Highway One, Unincorporated Point Arena, Mendocino Co.

## SALES INFO:

**Buyer:** Thomas & Camilla Gilson  
**Seller:** Toriund Living Trust  
**Sale Date:** September 22, 2020  
**Sale Price:** \$635,000  
**Terms:** Cash to seller  
**Recording No:** 20-12419  
**Marketing Time:** Listed for sale in November, 2019 at \$695,000

## PROPERTY INFO:

**Location:** Coastal Mendocino County - adjacent to the old Coast Guard Reservation, south of Point Arena Lighthouse  
**APNo.:** 027-011-22  
**Site Size:** 4.8 Acres total  
**Access:** Good access over long road through Stornetta Ranch from Hwy One  
**Zoning:** AG  
**Water:** None developed  
**Utilities:** Available from adjacent property  
**Topography:** Open, gently sloping bluff-top land with Ocean frontage  
**Current Use:** Vacant  
**Proposed Use:** Coastal homesite

## SUMMARY

**Price/Unit:** Single coastal parcel  
**Remarks:** Single L-shaped parcel with Ocean frontage.  
Access is over a roughly one-mile easement across BLM Stornetta Public Lands - California Coastal National Monument. Property is adjacent to the former Coast Guard Reservation and barracks

**Verified:** Christine Krenos

**Date:** 3/22

**By:** CAB

Listing agent - Compass Realty  
Exhibit 11 - Funding Assurance and Mutual Interest Letters for Mitigation Property Acquisition

CDP Application No. 1-22-0446 (Caltrans)  
Elk Creek Bridge Replacement Project

*The information presented has been verified with sources considered reliable, but is not guaranteed*

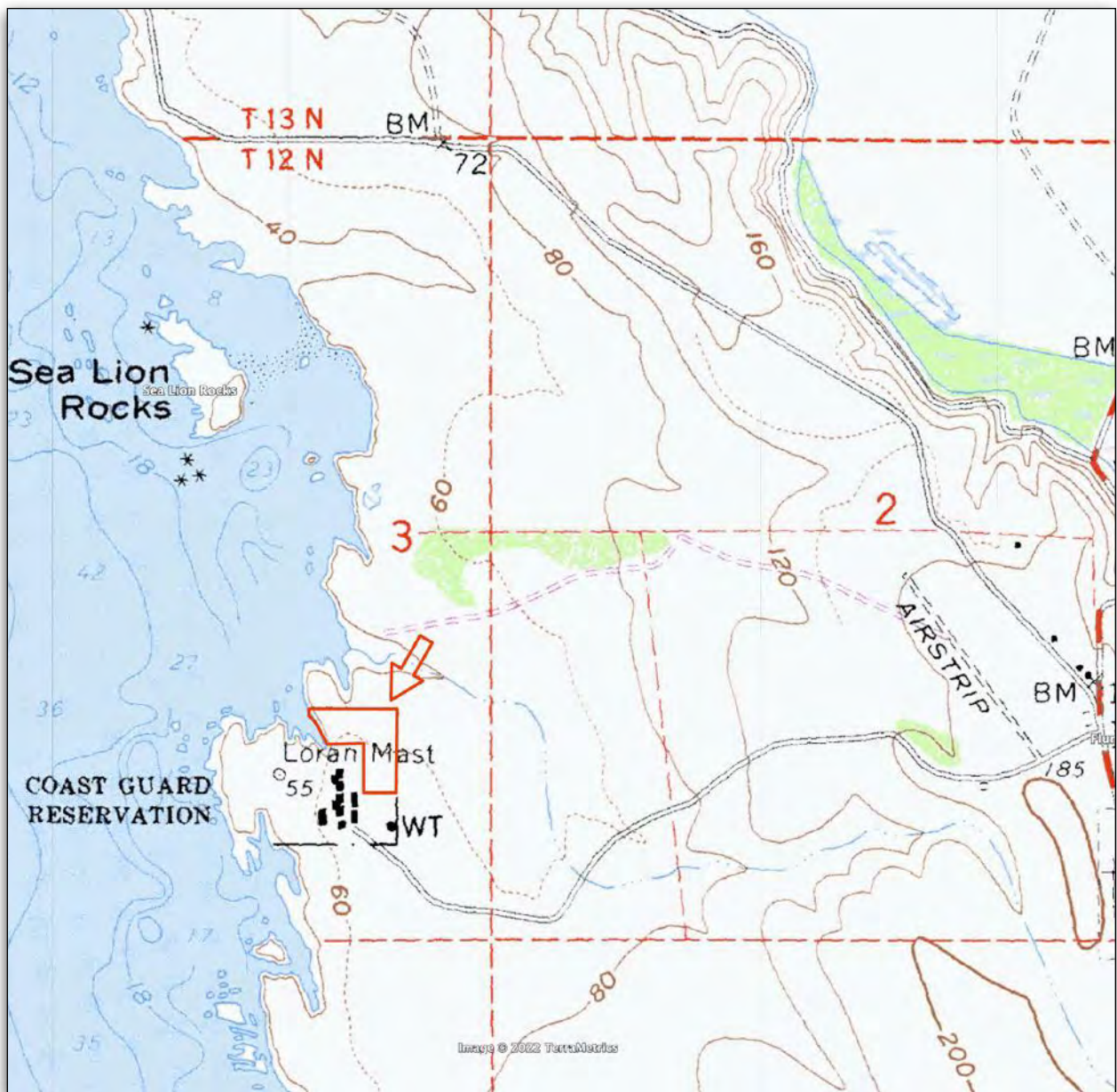
## Comparable No. 5



Overview of property from entry road



Drone image of sold property - MLS photo





# Comparable No. 6

35700 S Hwy One, Unincorporated Anchor Bay, Mendocino Co.

## SALES INFO:

**Buyer:** Bien Vie LLC  
**Seller:** Marilyn Mills-Haines  
**Sale Date:** June 2, 2021  
**Sale Price:** \$829,000  
**Terms:** Cash to seller  
**Recording No:** 21-008495  
**Marketing Time:** Listed for sale in November, 2020 at asking price of \$849,000

## PROPERTY INFO:

**Location:** Rural coastal Mendocino County - just south of Anchor Bay  
**APNo.:** 144-070-20  
**Site Size:** 5.1 Acres total  
**Access:** Good access from frontage on Hwy One  
**Zoning:** RR 5 - Property is within the Coastal Zone  
**Water:** None developed - potential well sites determined  
**Utilities:** Available from Hwy One frontage  
**Topography:** Sloping to bluff-top above Pacific Coast  
**Current Use:** Vacant  
**Proposed Use:** Rural residential development

## SUMMARY

**Price/Unit:** Single coastal parcel  
**Remarks:** Property included a single Ocean-front parcel just south of Anchor Bay.  
Property had a perc test allowing a 10-unit development in 2006 when previous owners were investigating a Bed and Breakfast development

**Verified:** Patty Bettega

**Date:** 10/21

**By:** CAB

Listing agent, Kennedy & Associates

Exhibit 11 - Funding Assurance and Mutual Interest Letters for Mitigation Property Acquisition

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## Comparable No. 6



Property at Ocean frontage - MLS photo



Inland view





# Comparable No. 7

46071 Iversen Road, Unincorporated Point Arena, Mendocino Co.

## SALES INFO:

**Buyer:** Randall and Millicent Wallenberg  
**Seller:** Diane Wilson  
**Sale Date:** August 2, 2021  
**Sale Price:** \$835,000  
**Terms:** Cash to seller  
**Recording No:** 21-011820  
**Marketing Time:** Listed for sale in June 2021 at \$835,000

## PROPERTY INFO:

**Location:** Coastal Mendocino County - in community of Iversen Point (Island Cove Estates) - inland from coast  
**APNo.:** 027-511-34  
**Site Size:** 18.9 Acres total  
**Access:** Good access from Iversen Road - developed interior access (dirt)  
**Zoning:** RMR 20  
**Water:** Developed well, seasonal creek  
**Utilities:** Available from Island Cove Estates community  
**Topography:** Sloping to gently sloping hillside land  
**Current Use:** Vacant  
**Proposed Use:** Rural residential development

## SUMMARY

**Price/Unit:** Single rural homesite  
**Remarks:** Property includes lot 34 of the Island Cove Estates - subject to CC&Rs and a \$150 annual association fee.  
Private, gently sloping parcel with young timber and roughly 8-acre open meadow

**Verified:** Wilson O'Connell

**Date:** 10/21

**By:** CAB

Listing agent, Liisberg & Company  
Exhibit 11 - Funding Assurance and Mutual Interest Letters for Mitigation Property Acquisition

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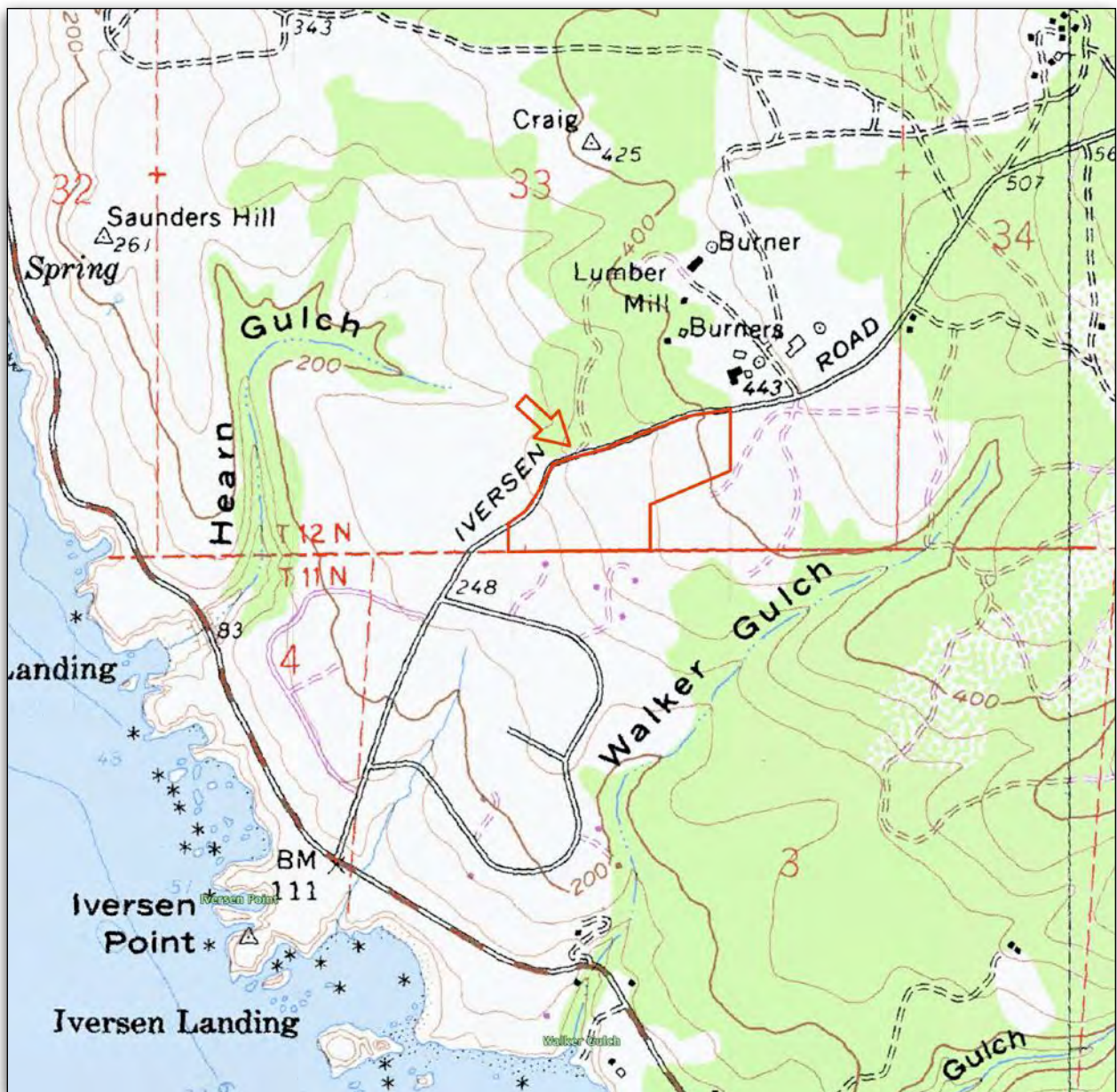
## Comparable No. 7



Entrance to property from Iversen Road



Open meadow on sold property





# Comparable No. 8

36420 S Highway One, Unincorporated Gualala, Mendocino Co.

## SALES INFO:

**Buyer:** N/A  
**Seller:** Jorg Hohnloser  
**Sale Date:** Pending  
**Sale Price:** \$575,000 - Asking price  
**Terms:** N/A  
**Recording No:** Pending Sale  
**Marketing Time:** Listed for sale in September 2021 for \$575,000

## PROPERTY INFO:

**Location:** Coastal Mendocino County - north of Gualala  
**APNo.:** 144-130-23  
**Site Size:** 1.7 Acres total  
**Access:** Good access from frontage on Hwy One  
**Zoning:** RR 5 - Property is within the Coastal Zone  
**Water:** None developed  
**Utilities:** Available from Hwy One frontage  
**Topography:** Sloping bluff-top parcel  
**Current Use:** Vacant  
**Proposed Use:** Rural homesite development

## SUMMARY

**Price/Unit:** Single Ocean-fronting parcel  
**Remarks:** Single Ocean-fronting parcel with access from frontage on Hwy One

**Verified:** Michaela Suess

**Date:** 3/22

**By:** CAB

Listing agent, Liisberg & Company  
Exhibit 11 - Funding Assurance and Mutual Interest Letters for Mitigation Property Acquisition

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## Comparable No. 8



Entry and frontage on Hwy One



Ocean front parcel



## EXHIBIT C

### QUALIFICATIONS OF THE APPRAISER

# QUALIFICATIONS OF

## Chris Bell, MAI

540 Swain Avenue,  
Sebastopol, California, 95472  
Phone: (707) 569-8891   CBBell.MAI@gmail.com

### *Educational Background*

University of Portland, B.S. Communication-Business Management, May, 1990

State of California Certified General Real Estate Appraiser #AG 023519

Licensed to appraise all types of real estate in the State of California

Designated Member of the Appraisal Institute (MAI designation), January, 2001

I have completed the requirements of the continuing education program of the  
Appraisal Institute

Updated Uniform Appraisal Standards for Federal Land Acquisitions      February, 2018

### Appraisal Institute Courses Completed for MAI designation:

Advanced Applications	October, 1997
Report Writing & Valuation Analysis	August, 1996
Advanced Sales Comparison & Cost Approaches	August, 1995
Highest & Best Use and Market Analysis	April, 1995
Standards of Professional Practice A & B	April, 1994
Advanced Income Capitalization	July, 1993
Basic Income Capitalization	April, 1993
Basic Valuation Procedures	September, 1992
Appraisal Principles	February, 1992

### *Experience*

Actively engaged in real property appraisal and analysis throughout Northern California since December 1991. Properties appraised include agricultural, commercial, industrial, ranch, rural residential, conservation easements and special-use properties in the counties of Sonoma, Marin, Mendocino, Napa, Lake, Trinity, Humboldt, Shasta, Siskiyou and Del Norte, and throughout the Northern California area.

April 2000 – Present: Owner/Sole Proprietor, Appraisal Associates

November 1998 – March 2000: Manager, Real Property Solutions/Appraisal Solutions

December 1991 – October 1998: Vice President, Harding Appraisal Co., Inc.

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## *Continuing Education:*

### *Most Recent*

Federal and CA Statutory and Regulatory Laws	December, 2021
Business Practice and Ethics	December, 2021
National USPAP Update 2022-23	December, 2021
Legal Parcels and Descriptions	August, 2020
National USPAP Update 2020-21	December, 2019
Uniform Appraisal Standards for Federal Land Acquisitions	February, 2018
National USPAP Update 2018-19	January, 2018
Advanced Concepts and Case Studies	September, 2017
Valuation of Conservation Easements	September, 2016
National USPAP Update 2016-17	February, 2016
Business Practice and Ethics	January, 2016
Appraising Conservation Easement Donations	May, 2015
Appraisal Litigation Conference	October, 2014
Federal and CA Statutory and Regulatory Laws	September, 2014
National USPAP Update 2014-15	February, 2014
New Technology for Real Estate Appraisers	November, 2013
Valuation of Conservation Easements and Taxes	November, 2013
National USPAP Update 2012-13	April, 2012
Appraisal Curriculum - General	December, 2011
IRS Valuation Summit II	June, 2011
Business Practice and Ethics	April, 2011
Small Vineyard and Estate Home Valuation	March, 2011
Uniform Appraisal Standards for Federal Land Acquisitions	December, 2010
Yellow Book Issues and Divided Partial Interests	October, 2010
Corridor Valuation	October, 2010
IRS Valuation Summit	June, 2010
National USPAP Update 2010-11	March, 2010
2009 Annual Fall Conference	November, 2009
National USPAP Update 2008-09	September, 2009
2007 Annual Fall Conference	November, 2007
Business Practice and Ethics	December, 2006
Scope of Work	July, 2006
CA Conservation Easements	November, 2005

Exhibit 11 - Funding Assurance and Mutual Interest Letters for Mitigation Property Acquisition

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Elk Creek Bridge Replacement Project

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