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STAFF REPORT: REGULAR CALENDAR

Application No.:	1-22-0446
Applicant:	California Department of Transportation (Caltrans)
Location:	Highway 1 at the crossing of Elk Creek (post mile 31.4), 2.5 miles south of the town of Elk, Mendocino County.
Project Description:	Replace the existing Highway 1 bridge over Elk Creek with a longer bridge with wider shoulders, a new separated bicycle and pedestrian path, and updated bridge and pedestrian railings; widen roadway approaches; replace and extend existing guardrail; and remove and replace existing rock slope protection on the northern creek bank with a root wad revetment.
Staff Recommendation:	Approval with Conditions

SUMMARY OF STAFF RECOMMENDATION

The California Department of Transportation (Caltrans) proposes to replace the Highway 1 bridge over Elk Creek in rural Mendocino County, approximately 2.5 miles south of the town of Elk. The existing Elk Creek Bridge was constructed in 1938, and recent inspections have revealed significant scour issues that threaten the stability of the bridge. In addition to the structural deficiencies of the bridge, the existing bridge also has narrow 2-foot-wide shoulders that do not provide safe access for pedestrians and cyclists and out-of-date, decayed bridge railings that do not meet current design safety standards.

Caltrans proposes to replace the existing 122-foot-long bridge with a longer, 140-foot-long, full-span, cast-in-place bridge structure founded on driven steel H-piles. The vehicular lanes would be widened from 11 feet to 12 feet, and bridge shoulders would be widened to 6 feet on both sides to provide space for cyclists and for disabled vehicles. A 6-foot separated pedestrian and bicycle pathway would be added to the western side of the bridge, adjacent to the southbound lane. The proposed project is therefore critical for maintaining and enhancing safe public access along this segment of the California coast. The project also proposes certain improvements within the Elk Creek channel, including the removal of concrete slope paving and two concrete piers and pier caps from the stream and the banks of the creek. Additionally, Caltrans proposes to remove existing unvegetated rock slope protection (RSP) on the northern bank of the creek and replace it with a bio-engineered and vegetated root wad revetment under and upstream of the bridge, which would primarily serve to restore and enhance available natural bank habitat for salmonids but would also help stabilize the bank and protect the new northern bridge abutment from erosion.

The project site is located in an area designated as “highly scenic” under the Mendocino County certified LCP. The visual character of the existing bridge will be altered slightly by the proposed project in that the existing bridge would be replaced with a wider bridge with updated railings and a separated accessway on the western side, however the bridge will remain largely the same visually and essentially in the same place, and the proposed changes in visual character will remain compatible with the existing visual character in the corridor and will maintain the highway in this area as a scenic two-lane road. To ensure the final colors and design of bridge railings and guardrail will be subordinate to the natural setting, minimize reflective surfaces, and blend in hue and brightness with their surroundings, staff recommends Special Condition 1 to require submittal of final design plans prior to commencement of construction, which will demonstrate consistency with these standards.

The project site is densely vegetated; therefore, the proposed project would have some temporary and permanent impacts to coastal wetlands, primarily riparian vegetation on the banks of the creek. The wetland impacts are allowable under section 30233(a)(4) of the Coastal Act as an incidental public service purpose, and staff believes that Caltrans has demonstrated that the proposed project is the least environmentally damaging feasible alternative. Staff recommends Special Conditions 1-17 to incorporate feasible mitigation measures to minimize adverse environmental effects.

To mitigate for unavoidable impacts to coastal wetlands, Caltrans has submitted an Onsite Revegetation Plan (Exhibit 9) describing proposed site restoration and revegetation efforts and additional wetland habitat enhancement as mitigation for anticipated impacts, including proposed monitoring procedures and success criteria. Caltrans proposes additional habitat mitigation offsite in the form of funding the acquisition of a private coastal blufftop property in Mendocino County in the name of a local land trust, enhancement of the existing habitat on the property via substantial invasive species removal, and protection of the habitat on the property in perpetuity under an open space deed restriction. Caltrans also proposes to provide funding for an

endowment for the land trust's long-term management of the parcel (see Draft Offsite Habitat Mitigation and Monitoring Plan, Exhibit 10). Staff believes that the proposed mitigation package is adequate to compensate for wetland impacts anticipated to result from the proposed project and recommends Special Conditions 8 through 11 to implement the proposed onsite and offsite mitigation plans as conditioned.

Finally, staff believes that Caltrans has appropriately identified, assessed, and designed the project to address sea level rise, tsunami, and other geologic and flood risks, and with recommended Special Condition 17 requiring submittal of a Seismic and Tsunami Hazard Response Plan, the project as conditioned avoids, minimizes, and mitigates the impacts of sea level rise and other coastal hazards, consistent with Coastal Act sections 30253 and 30270. Staff therefore recommends approval of CDP application number 1-22-0446, as conditioned. The motion to implement this recommendation can be found on page 5.

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LIST OF APPENDICES

LIST OF EXHIBITS

I. Motion and Resolution

Motion

I move that the Commission **approve** Coastal Development Permit Application No. 1-22-0446 pursuant to the staff recommendation.

Staff recommends a **YES** vote on the foregoing motion. Passage of this motion will result in conditional approval of the permit and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

Resolution

The Commission hereby **approves** the Coastal Development Permit for the proposed development and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the permit complies with the California Environmental Quality Act because either (1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or (2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

II. Standard Conditions

This permit is granted subject to the following standard conditions:

1. **Notice of Receipt and Acknowledgment.** The permit is not valid, and development shall not commence, until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. **Expiration**. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. **Interpretation**. Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.

4. **Assignment**. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. **Terms and Conditions Run with the Land**. These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

III. Special Conditions

1. **Final Construction Plans**. NOT LESS THAN 30 DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit for the review and written approval of the Executive Director, final site and construction plans that are consistent with the Project Description (Exhibit 4) and that substantially conform with the plans submitted to the Commission in the permit application and consistent with all special conditions of this CDP.

   A. The plans shall include, at a minimum the following required components:

      i Final engineering and design plans for all bridge and roadway elements and for the root wad revetment.

      ii Final specific locations of all construction areas, staging areas, and construction access corridors in site plan view.

      iii Final specification of all visual elements of the project including design, colors, and other aesthetic treatments of the bridge structure, bridge rails, guardrail, and any other visual elements of the development, which shall be designed to be subordinate to the natural setting through measures such as (but not limited to) visually permeable design, minimizing reflective surfaces, and use of colors that blend in hue and brightness with the surroundings.

      iv Final stormwater drainage plans that conform with the standards and requirements of the NCRWQCB approval.

      v Final construction schedule.

      vi Final Transportation Management Plan, which shall limit lane closures and be in substantial conformance with such limitations proposed in the application to the maximum extent feasible and provide for full and continuous access for pedestrians and cyclists through the work corridor, except during limited complete closures.

      vii The final construction plans shall include a narrative cover letter demonstrating that the final plans are consistent with all relevant terms of this Special Condition and any other relevant term or condition of this CDP and how the requirements of this CDP will be communicated to any contractor(s) implementing work under the plans.

B. The Permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission approved amendment to this CDP unless the Executive Director determines that no amendment is legally required.

2. **Construction Responsibilities Required to Protect Coastal Resources.** The Permittee shall undertake development in compliance with all conditions of CDP 1-22-0446 and with all proposed Avoidance and Minimization Measures (AMMs) and Best Management Practices (BMPs) attached here as Exhibit 5, except as supplemented or modified herein, including, but not limited to, the following:

A. **Construction Timing.** All work that has the potential to directly impact surface waters (including grading, cutting, and filling on the banks of Elk Creek, hoe-ramming, and pile driving) shall take place between June 15 and October 15 unless otherwise approved in writing by the Executive Director as having no substantial impacts to coastal resources because of timing. To avoid impacts to nesting bird habitat, vegetation removal shall be restricted to September 16 through January 31 (outside of the bird breeding season), unless a nesting birds survey is conducted consistent with Special Condition 4, below. Soil disturbing work shall be minimized to the extent feasible during the rainy season.

B. **Environmental Awareness Training.** PRIOR TO COMMENCEMENT OF ANY DEVELOPMENT, including major vegetation removal, a qualified biologist shall provide a pre-construction meeting with all construction personnel (contractors and subcontractors), consisting of 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 within the project area, locations of environmentally sensitive areas, and how to identify and report sensitive species within the project area. This shall be repeated each season of construction and, if there is worker turnover within the construction season, each new worker shall be advised on best practices. This information shall also be posted at the job site to ensure the importance of these measures are recognized.

C. **Flagging of Biologically Sensitive Areas.** PRIOR TO COMMENCEMENT OF ANY DEVELOPMENT, including major vegetation removal, a qualified biologist shall identify with flagging, orange construction barrier fencing, or other similar temporary means, the boundaries of riparian, wetland, and other Environmentally Sensitive Habitat Areas (ESHAs) within and adjacent to the project area, including any areas to be avoided as identified by the surveys required by Special Conditions 3, 4, 5, and 6, below. Construction equipment staging and laydown areas and all other project activities and authorized development shall avoid encroachment into delineated ESHAs, except as specifically authorized by this CDP. Demarcated areas shall be inspected throughout construction to ensure that they are visible for construction

personnel. Any fencing that is used shall be properly installed specialized wildlife (frog) exclusionary fencing to protect sensitive species of frogs from entering work zones during construction. If the fencing is removed, damaged, or otherwise compromised during the construction period, construction activities shall cease until the fencing is repaired or replaced.

D. **Water Pollution Prevention.** PRIOR TO COMMENCEMENT OF ANY DEVELOPMENT, including major vegetation removal, the Permittee shall ensure all temporary erosion, runoff, and sediment control BMPs are in place in accordance with the final Stormwater Pollution Prevention Plan (SWPPP), required to be prepared and implemented by Special Condition 15.

E. **Spill Prevention.** Fuels, lubricants, solvents, and other hazardous materials shall not be allowed to enter coastal waters or wetlands. Fueling and maintenance of construction equipment and vehicles shall be conducted off-site, if feasible. Any fueling and maintenance of mobile equipment conducted on-site shall take place at a designated area located at least 50 feet from coastal waters and sensitive habitat. The fueling and maintenance area shall be designed to fully contain any spills of fuel, oil, or other contaminants. Equipment that cannot be feasibly relocated to a designated fueling and maintenance area (such as cranes) may be fueled and maintained in other areas of the site, provided that procedures are implemented to fully contain any potential spills. Hazardous materials management equipment shall be available immediately on-hand at the project site, and a registered first-response, professional hazardous materials cleanup/remediation service shall be locally available on call. Any accidental spill shall be rapidly contained and cleaned up consistent with the final SWPPP required by Special Condition 15.

F. **Invasive Species Prevention.** All construction equipment (e.g., cofferdams, drill rigs, personal equipment, waders, etc.) shall be cleaned prior to entering the work site consistent with California Department of Fish and Wildlife (CDFW) protocols to minimize the potential for the transport of non-native vegetation seeds and plant material or invasive species. Rock, sand, or any material used during construction shall originate from local sources to avoid the inadvertent introduction of non-native plant species to surrounding environmentally sensitive areas. To prevent the spread of invasive plant species in disturbed soil after construction, all disturbed areas shall be seeded with native herbaceous species and straw, straw bales, seed, mulch, or other material used for erosion control or landscaping shall be free of noxious weed seed and propagules.

G. **Trash/Debris.** During construction, all trash and debris shall be properly contained, removed from the work site, and disposed of on a regular basis to avoid contamination of habitat during construction activities. Any debris inadvertently discharged into coastal waters or surrounding habitats shall be recovered immediately and disposed of consistent with the requirements of this CDP. All construction debris shall be disposed of in an upland location

outside of the coastal zone or at an approved disposal facility pursuant to the final Debris Disposal Plan required by Special Condition 16.

H. **Plastic Netting Prohibition.** To minimize wildlife entanglement and plastic debris pollution, the use of temporary rolled erosion and sediment control products with plastic netting (such as polypropylene, nylon, polyethylene, polyester, or other synthetic fibers used in fiber rolls, erosion control blankets, and mulch control netting) is prohibited. Any erosion-control associated netting shall be made of natural fibers and constructed in a loose-weave design with movable joints between the horizontal and vertical twines.

I. **Vegetation Removal.** Vegetation cutting and removal activities shall be done with the use of hand tools (including chainsaws) to the maximum extent feasible. To minimize the opportunity of spreading tree pathogens, all pine trees that would be cut down, and any trimmed branches or green woody material, shall be chipped to a size equal to or less than 6-inches in diameter and left on-site.

J. **Soil Protection.** To the extent feasible, vegetation within proposed access roads shall be cut back close to the ground with roots left undisturbed. Soils within temporarily disturbed areas shall be protected from compaction and tilling of native soils shall be avoided to the extent feasible. Any soil protection materials, barriers, or any additional road base shall be completely removed upon completion of construction. All areas of fill shall be amended with either locally sourced and as weed-free as feasible topsoil or with compost, to create conditions appropriate for planting and revegetation. Where feasible, existing topsoil shall be removed, stockpiled, and replaced on new fill. Fill slopes may also be amended by incorporating compost into the top layer. Topsoil shall not be stockpiled or redistributed from soils where invasive plant species are abundant.

K. **Revegetation.** Consistent with the final approved Onsite Revegetation Plan required by Special Condition 8, any temporarily disturbed areas shall be appropriately stabilized and revegetated following construction utilizing only regionally appropriate or locally grown or collected native plant seeds and shall not include any species listed as problematic and/or invasive by the California Native Plant Society (CNPS), listed as “high” or “moderate” by the California Invasive Plant Council, (Cal-IPC) or the State of California.

L. **Biological Monitoring.** A biological monitor shall be present onsite during initial equipment mobilization, site preparation, vegetation removal, ground disturbance, impact hammer activities, concrete pours, final construction demobilization, and all other actions that may reasonably result in adverse impacts to sensitive species, marine resources, and water quality, to advise the contractor on and to ensure compliance with the required sensitive resource protection measures of this permit. The monitor shall be a qualified biologist with the ability to recognize sensitive species and habitats in the

project vicinity. The monitor shall have the authority to stop work activities in any area if required to avoid adverse impacts to sensitive resources. The monitor shall maintain records of activities, observations, and communications with the Permittee and/or construction personnel. The monitoring logs shall be retained and made available for agency review upon request and shall be submitted to the Executive Director following completion of construction.

M. **Night Lighting.** If night work is required (i.e., due to accelerated work schedule to meet permit deadlines or reaching a critical juncture in work at a time when it would be infeasible to stop construction), the use of artificial lighting shall be temporary and of short duration and lighting shall be directed away from the channel, shielded and pointed downward, and focused specifically on the portion of the project area actively under construction to reduce potential disturbance to sensitive species.

N. **Protection of Wildlife.** To prevent the inadvertent entrapment of California red legged frogs and other special status wildlife, all excavated, steep-walled holes or trenches more than one foot deep shall be covered at the close of each working day by plywood or similar materials or, if that is infeasible, one or more escape ramps constructed of earthen fill or wooden planks shall be installed.

3. **Protection of Rare Plant ESHA.** All development shall avoid rare plant ESHA by complying with the following measures:

A. PRIOR TO THE COMMENCEMENT CONSTRUCTION, including removal of herbaceous vegetation or clearing and grubbing work, the Permittee shall conduct updated pre-construction surveys for Humboldt milkvetch (Astragalus agnicidus) and North Coast semaphore grass (Pleuropogon hooverianus) to confirm absence of both species in the project area. Surveys shall be conducted as close to the start of construction activities as possible, but also in the appropriate season for optimal species-specific detection (i.e., when plants are flowering). Survey methods shall comply with CNPS/CDFW rare plant survey protocols and shall be performed by qualified field botanists.

B. If surveys identify rare plants[1] in the project area, the plants shall be mapped and flagged for avoidance during construction activities, and no construction activities shall occur within 100 feet of the rare plant. The locations of any rare plant populations to be avoided shall be clearly identified in the contract documents (plans and specifications). Results of the surveys shall be

[1] Rare plants are those defined as having a global rarity ranking by NatureServe of G1-G3, as determined by the California Department of Fish and Wildlife, (CDFW) and CNPS, or a rare plant ranking by CNPS and the California Natural Diversity Database, (CNDDB), of 1A, 1B, 2A, 2B, 3 or 4. Also included are plant species listed as threatened or endangered under the Federal or State Endangered Species Acts. Rare habitats have been assigned a ranking of S1 – S3 by CNPS.

submitted to the Executive Director prior to the commencement of any development.

C. If the Permittee determines that it is not possible to avoid impacting rare plants that occur in the project site, the Permittee shall halt construction activities until the Permittee obtains an amendment to this CDP that authorizes modifications to the project, including any necessary mitigation for authorized, unavoidable impacts to rare plant ESHA, unless the Executive Director determines that no such permit amendment is necessary.

4. **Protection of ESHA for Raptors and Special Status[2] Species of Nesting Birds.** The Permittee shall undertake development in compliance with the proposed measures included in Exhibit 5 to protect habitat for nesting raptors and special status bird species, as supplemented or modified herein:

A. If any authorized development, including major vegetation removal, is undertaken during the bird nesting season (February 1 to September 15), NOT MORE THAN SEVEN DAYS PRIOR TO COMMENCEMENT OF SUCH DEVELOPMENT, a qualified biologist shall survey for active nests of raptors and special status bird species in and adjacent to the construction area according to current CDFW recommended survey protocol(s). The minimum survey area shall include the bridge structure, trees, and riparian vegetation within the development footprint and a minimum 300-foot buffer area, as determined by CDFW, around the development footprint. Surveys shall be repeated any time construction activities have ceased for more than seven days unless the work is occurring outside of the breeding season.

B. If any active nests for raptors or special status bird species are detected, the biologist, in consultation with CDFW, shall determine the extent of a construction-free buffer zone to be established around the nest, and construction in the buffer zone shall be delayed until after the young have fledged, as determined by additional surveys conducted by a qualified biologist. The construction-free buffer zone shall be a minimum of 300 feet for nesting raptors and a minimum of 100 feet for other special-status bird species.

C. If special status birds are found to be nesting on or around the bridge, a Bird Exclusion Plan consistent with the proposed BMPs in Exhibit 5 shall be prepared by a qualified biologist and submitted to the Executive Director for review and written approval prior to the commencement of construction. The Permittee shall implement the approved final Bird Exclusion Plan.

[2] Special-status species are those taxa listed under the state or federal Endangered Species Acts and/or those listed in the California Natural Diversity Database by the Department of Fish and Wildlife as "special animals" or "species at risk" or "special status species" (see https://wildlife.ca.gov/Data/CNDDB/Plants-and-Animals).

D. The Permittee shall submit to the Executive Director the results of the surveys required in subpart A above prior to commencement of construction, including a map that depicts the location(s) of any active nests identified, the associated buffer zones, and a narrative that describes the survey details (e.g., dates, methods, personnel and their qualifications), results, and measures proposed to avoid disturbance of environmentally sensitive nesting bird habitat areas.

5. **Protection of ESHA for Roosting Bats.** The Permittee shall undertake development in compliance with the proposed measures included in Exhibit 5 to protect habitat for roosting bats, as supplemented or modified herein:

A. The Permittee shall submit to the Executive Director the results of the proposed surveys for roosting bats prior to commencement of any development, including a map that depicts the location(s) of any bat roosts identified and the associated buffer zones and a narrative letter that describes survey details (e.g., dates, methods, personnel and their qualifications, etc.), results, and measures proposed to avoid disturbance of environmentally sensitive roosting bat habitat areas.

B. If surveys identify maternal colonies of roosting bats and/or special status individual roosting bats in the project area, the maternal roosting colonies and/or special status individual roosting bats shall be mapped and flagged for avoidance during construction activities, and no construction activities shall occur within 100 feet of the bat roosting colonies/special status bat individuals. The locations of any maternal roosting colonies and/or special status individual bats to be avoided shall be clearly identified in the contract documents (plans and specifications).

C. If special status bats or colonies are found to be roosting in the bridge, a Bat Exclusion Plan consistent with the proposed BMPs in Exhibit 5 shall be prepared by a qualified biologist and submitted to the Executive Director for review and written approval prior to the commencement of construction. The Permittee shall implement the approved final Bat Exclusion Plan.

6. **Protection of ESHA for Nesting Western Pond Turtles**. The Permittee shall undertake development in compliance with the proposed measures included in Exhibit 5 to protect habitat for Western Pond Turtles (WPT), as supplemented or modified herein:

A. If any construction activities, including vegetation removal and other site preparation activities, will occur during the species critical egg laying period (March–August), a preconstruction survey for WPT nests shall be conducted by a qualified biologist according to current CDFW recommended survey protocols. The Permittee shall submit survey results to the Executive Director prior to commencement of construction (e.g., clearing and grubbing).

Submitted results shall include details on surveyor qualifications, date(s) of survey(s), and a map of any detected WPT individuals and nests.

B. If surveys identify WPT nests in the project area, the nests shall be mapped and flagged for avoidance during construction activities, and no construction activities shall occur within 100 feet of the WPT nest. The locations of any WPT nests to be avoided shall be clearly identified in the contract documents (plans and specifications).

7. **Protection of Archaeological Resources.** The Permittee shall undertake development in compliance with the proposed measured included in Exhibit 5 to protect archeological resources (CR-1 and CR-2), as supplemented or modified herein:

A. Should any cultural resources be encountered during project activities, the Permittee shall cease all project activities that have the potential to uncover or otherwise disturb cultural deposits and an "exclusion zone" where unauthorized equipment and personnel are not permitted shall be established (e.g., taped off) in an area not less than a 60-foot-wide buffer around the discovery. The Permittee shall immediately notify the representatives of all potentially relevant tribes, as determined by the Native American Heritage Commission (NAHC). Construction may continue outside of the exclusion zone area.

B. If the Permittee seeks to recommence project activities within the sensitive area following discovery of cultural resources, the Permittee shall submit an Archaeological Protection Plan for the review and written approval of the Executive Director. The Archaeological Protection Plan shall be developed in consultation with the representatives of the relevant tribes, as determined by the NAHC. The Executive Director shall review the Archaeological Protection Plan for conformance with the terms and conditions of this CDP and with the Coastal Act requirements for the protection of coastal resources. If the Executive Director approves the plan and determines that the plan's recommended changes to the proposed development or mitigation measures are de minimis in nature and scope, project activities may recommence after this determination is made by the Executive Director in writing. If the Executive Director approves the plan but determines that the changes therein are not de minimis, construction may not recommence until after an amendment to this permit is approved by the Commission.

8. **Habitat Impact Mitigation Requirements.**

A. **Final Onsite Revegetation Plan (ORP).** NOT LESS THAN 30 DAYS PRIOR TO COMMENCEMENT OF ANY DEVELOPMENT, including major vegetation removal, the Permittee shall submit, for the review and approval of the Executive Director, a final revised ORP for revegetation of temporarily disturbed areas at the project site and additional habitat enhancement in the

form of invasive species removal. The final ORP shall substantially conform to the ORP titled “Onsite Revegetation Plan for the Elk Creek Bridge Replacement Project” dated May 2022 (Exhibit 9), except as supplemented or modified herein:

i The goals and objectives in the draft plan shall be modified to include prevention of establishment of disturbed areas by newly introduced species ranked as “High” and “Moderate” by the California Invasive Plant Council, excluding non-native annual grasses, and minimizing the spread of existing invasive species through the removal of invasive species during the minimum 5-year monitoring and maintenance period. Where feasible, invasive species shall be removed by hand, and any herbicide use shall be minimized and limited.

ii The definitions of temporary and permanent impacts in the final ORP shall be modified to be consistent with the following definitions: “Short-term temporary impacts” are those that are restored within 12 months of initial construction activity disturbance; “Long-term temporary impacts” are those that may occur for up to a 24-month period from the initial disturbance but require no more than 12 months from the conclusion of construction activity disturbance to fully recover. Any impacts that do not meet these parameters shall be considered permanent impacts and mitigated for pursuant to sub-section A-iii of this special condition.

iii Habitat impacts shall be mitigated onsite if feasible or offsite if necessary pursuant to the final approved Offsite Habitat Mitigation and Monitoring Plan (HMMP) required by Special Condition 9 in accordance with the following minimum ratios: Any impacts determined to qualify as short-term temporary shall be mitigated at a 1:1 ratio (acres of creation or substantial restoration/acres of impacts); long-term temporary impacts shall be mitigated at a 1.5:1 ratio; permanent impacts shall be mitigated at a minimum ratio of 3:1 for upland ESHA and riparian impacts and 4:1 for other wetlands, where these base ratios assume mitigation as habitat creation or substantial restoration and include no net loss of wetlands by a minimum 1:1 in kind habitat creation or substantial restoration. Alternatively, a functionally equivalent amount of habitat preservation and enhancement shall be met.

iv The final ORP shall include the following:

a. A revegetation map that shows the boundaries, habitat types, and acreages proposed for revegetation, as well as the proposed Cape ivy removal area and proposed new wetland;

b. Provisions for 1:1 replacement planting (using a combination of living installed, volunteer, and/or resprouting native woody plants), at a

minimum, of the total number of riparian trees and large shrubs that are cut or otherwise substantially impacted by construction;

c. A list of locally and genetically appropriate native species to be planted within the revegetation areas. The list shall also include native species expected to passively establish in the revegetation areas. The plant palette for revegetation shall be based on a pre-disturbance survey of what exists there currently. If the area to be impacted is non-native dominated, then a survey of plant composition in the surrounding area shall be conducted to derive an appropriate plant palette for revegetation;

d. A description of the size and approximate number of plants;

e. A schedule for implementation of the final plan, including erosion control measures, the removal of non-native invasive plants, installation (i.e., planting) of native plants, and ongoing maintenance and monitoring activities. Planting of native species shall take place in the fall/winter after, or just before, the onset of the rainy season;

f. Provisions for conducting regular (minimum annual) weeding and maintenance during the minimum 5-year period of post-construction monitoring;

g. interim success criteria and final success criteria consistent with subpart C below;

h. monitoring and reporting plans that include (i) plans for monitoring the onsite habitat restoration area for a minimum of five years, (ii) provisions for the submittal of annual and final monitoring reports to the Executive Director consistent with subparts D and E below; and (iii) a schedule for annual monitoring activities and report submittal dates;

i. provisions for submittal to the Executive Director, within 90 days of completion of construction, a final “as-built” onsite habitat impact report verifying that the extent and nature of actual construction impacts does not exceed the projected impacts listed in the final ORP. Impacts shall be defined per subsection A-ii above. If the extent and nature of actual construction impacts does exceed the project impacts, additional mitigation shall be required pursuant to subpart B below.

B. **Additional Mitigation for Unanticipated Onsite Impacts**. If the Executive Director determines the actual project impacts calculated in the as-built report required under subpart A-iv-i above substantially differ from anticipated impact amounts projected in the approved final ORP, the Permittee shall submit a revised ORP and/or supplemental mitigation plan for the review and

approval of the Executive Director proposing additional mitigation consistent with the mitigation ratios in subpart A-iii above for the additional habitat impacts. The revised or supplemental plan shall be processed as an amendment to this CDP, unless the Executive Director determines that no amendment is legally required.

C. **Success Criteria for Onsite Revegetation**. Final success criteria shall include, at a minimum: (a) for all impacted riparian areas except for the root wad revetment area, a minimum of 100% survival of replacement plantings (a combination of living installed, volunteer, and/or resprouting native woody plants) of riparian trees and large shrubs at the end of five years, except for any plantings that may be washed away due to the effects of natural fluvial erosion; (b) in the root wad bench area, a minimum of 85% survival of installed native woody plants, or if counting individual plantings is not feasible the success criteria shall be a minimum of 30% absolute cover; (c) for all areas disturbed during construction activities, equal to or less than 5% cover of newly introduced invasive plants rated “Moderate” and “High” by the California Invasive Plant Council except for nonnative annual grasses and approximately similar coverage of existing invasive plants compared with preconstruction conditions; and (d) for the wetland creation area, and the wetland delineation will be based on vegetation and hydrology using the routine methods of the Army Corps of Engineers. The final ORP shall also specify interim criteria which shall serve as benchmarks and guide adaptive management.

D. **Annual Monitoring and Reporting for Onsite Revegetation.** The final ORP shall include provisions for monitoring, maintenance, and remediation activities. The Permittee shall submit monitoring reports to the Executive Director for review and approval for Years 1, 3, and 5, beginning the first year after planting of vegetation and consistent with the monitoring schedule in the final approved ORP. Each report shall document the condition of the revegetation and invasive species removal with photographs taken from the same fixed points in the same directions; a “performance evaluation” section where monitoring results are used to evaluate the status of the revegetation and invasive species removal efforts in relation to the interim and final success criteria in the final approved ORP; and recommendations for work for the subsequent year needed to improve mitigation success.

E. **Final Monitoring Report for Onsite Revegetation.** A final monitoring report for Year 5 shall be submitted for the review and approval of the Executive Director at the conclusion of all onsite mitigation efforts consistent with the monitoring schedule in the final approved ORP. The final monitoring report shall be prepared by a qualified restoration specialist and must evaluate whether the revegetated areas conform to the goals, objectives, and success criteria set forth in the approved final ORP. The final monitoring report shall summarize prior reports and provide a timeline of the overall progress and success and include sufficient detail to evaluate comprehensive mitigation

compliance with the mitigation program and specified goals and success criteria set forth in the approved final ORP.

F. **Provision for Remedial Action**. If the final monitoring report indicates that the onsite revegetation and restoration efforts have been unsuccessful, in part or in whole, based on the approved success criteria, the Permittee shall submit within 90 days a revised or supplemental ORP for the review and approval of the Executive Director to compensate for those portions of the original program which did not meet the approved success criteria. The revised or supplemental ORP shall be prepared by a qualified restoration specialist and shall specify measures to remediate those portions of the original approved ORP that have failed or have not been implemented in conformance with the original approved ORP. The revised plan shall be processed as an amendment to this CDP, unless the Executive Director determines that no amendment is legally required.

G. **Consistency.** The Permittee shall undertake development in accordance with the approved final ORP. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission approved amendment to this CDP unless the Executive Director determines that no amendment is legally required.

9. **Final Offsite Habitat Mitigation and Monitoring Plan (HMMP).** NOT LESS THAN 30 DAYS PRIOR TO COMMENCEMENT OF ANY DEVELOPMENT, including major vegetation removal, the Permittee shall submit, for the review and written approval of the Executive Director, a final revised offsite HMMP for enhancement and preservation of ESHA as compensatory mitigation for construction impacts of the approved project. The final HMMP shall substantially conform to the draft Offsite Habitat Mitigation and Monitoring Plan titled “Saunder’s Landing Off-Site Draft Habitat Mitigation and Monitoring Plan” dated June 2022 (Exhibit 10) except as modified herein:

A. **Components of Offsite Habitat Mitigation and Monitoring Plan.** The final HMMP shall include, at a minimum, the following:

i **Plans for the Substantial Removal of Invasive Species.** The final plan shall include plans for the substantial removal of all Cal-IPC rated “High” invasive species over the whole mitigation parcel. The plans shall include implementation, monitoring, and reporting components, including at a minimum, the following:

a. Provisions for completing a seasonally appropriate survey of the eastern parcel for invasive plant species. Survey results shall be mapped, and the map shall be added to the final HMMP. Plans for the substantial removal of all Cal-IPC rated “High” invasive species on the entire parcel, except for non-native annual

grasses, including a description of the methods for invasive species removal activities, replanting palette if applicable (species and amounts to be planted if appropriate/necessary, which shall match the surrounding native vegetation composition), monitoring and maintenance plans, interim and final success criteria, and a schedule for implementation.

b. Provisions for monitoring annually for a minimum of five (5) years and submitting monitoring reports to the Executive Director in Years 1, 3, and 5, beginning the first year after invasive species removal and replanting of native vegetation and consistent with the monitoring schedule in the final approved HMMP. Each report shall document the condition of the invasive species removal areas and native plant revegetation progress, with photographs taken from the same fixed points in the same directions; a "performance evaluation" section where monitoring results are used to evaluate the status of the invasive species removal efforts and revegetation in relation to the interim and final success criteria in the final approved HMMP; and recommendations for work for the subsequent year needed to improve mitigation success. The final monitoring report shall be prepared by a qualified restoration specialist, shall summarize prior reports, and shall provide a timeline of the overall progress and success and include sufficient detail to evaluate comprehensive compliance with the specified goals, objectives, and success criteria set forth in the approved final HMMP.

c. Final success criteria shall include, at a minimum, less than 5% cover of invasive plants rated "High" by the California Invasive Plant Council, except for non-native annual grasses. If the final monitoring report indicates that the habitat enhancement activities have been unsuccessful, in part or in whole, based on the approved success criteria, the Permittee shall submit within 90 days a revised or supplemental HMMP for the review and approval of the Executive Director to compensate for those portions of the original mitigation efforts which did not meet the approved success criteria. The revised or supplemental HMMP shall be prepared by a qualified restoration specialist and shall specify measures to remediate those portions of the original approved HMMP that have failed or have not been implemented in conformance with the original approved HMMP. The revised plan shall be processed as an amendment to this CDP, unless the Executive Director determines that no amendment is legally required.

ii **Provisions for the Parcel Acquisition and Establishment of an Endowment Fund.** The final HMMP shall include provisions for the

transfer by the Permittee of 100% of the funds required for the purchase of the mitigation parcel in the name of Mendocino Land Trust (MLT) (or similar land management entity approved in the final HMMP) and the transfer by the Permittee of the final approved funding amount to an endowment account for the long-term management of the parcel by MLT, consistent with the final formal agreements required by Special Condition 10 below. The final HMMP shall identify the final amount of funding that the Permittee shall provide in a non-wasting endowment account to be used by MLT (or similar land management entity approved in the final HMMP) for the long-term management of the parcel. The final endowment funding amount shall be adequate to fund the long-term management activities described in the final approved HMMP, which shall ensure the habitat on the mitigation parcel is kept in good condition in perpetuity. The final HMMP shall include sufficient detail to support the determination that the final funding amount is adequate.

iii **Schedule.** A schedule for, at a minimum, (1) execution of the formal agreements consistent with Special Condition 10 below; (2) transfer of funds for the property acquisition and endowment consistent with all applicable special conditions of this CDP; (3) execution and recordation of the required open space deed restriction consistent with Special Condition 11 below; and (4) implementation of the habitat enhancement activities in the final approved HMMP and consistent with all applicable special conditions of this CDP.

iv **Acknowledgments.** The final HMMP shall acknowledge and by extension the Permittee and Mendocino Land Trust (or similar land management entity approved in the final HMMP) shall agree to protect the mitigation parcel in perpetuity consistent with the deed restriction required by Special Condition 11 below, with the final approved HMMP, and with all other applicable special conditions of this CDP. The final HMMP shall be signed by both the Permittee and Mendocino Land Trust (or similar land management entity approved in the final HMMP).

v **Provisions for Future Grazing on Mitigation Parcel**. The final HMMP shall state that in the event the Permittee, Mendocino Land Trust (or similar land management entity approved in the final HMMP), or subsequent landowner intends to use the parcel protected under the Deed Restriction in Special Condition 11 for grazing activities, the Permittee or landowner shall submit a Grazing Management Plan prior to the undertaking of any grazing for the review and approval of the Executive Director. The Grazing Management Plan shall be prepared by a qualified expert(s) in grazing management and restoration ecology, and shall consider the habitat enhancement, restoration, and management goals of the final HMMP in recommending a grazing regime that is compatible with those goals.

B. **Timing of Offsite Habitat Mitigation.** The final HMMP shall be implemented consistent with the following minimum requirements:

i **Property Acquisition and Funding Transfers**. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit documentation(s) in a form and content acceptable to the Executive Director of the successful transfer of funds to the State Coastal Conservancy (or a similar entity approved in the final HMMP) to cover 100% of the cost of the subject mitigation parcel acquisition consistent with all applicable special conditions of this CDP. The Permittee shall diligently pursue completion of the mitigation parcel transfer to MLT in accordance with the deadline required by subpart B-ii below for commencement of implementation of the habitat enhancement activities in the final HMMP. PRIOR TO COMMENCEMENT OF IMPLEMENTATION OF THE HABITAT ENHANCEMENT ACTIVITIES IN THE FINAL HMMP, the Permittee shall submit evidence in a form and content acceptable to the Executive Director of the transfer of the mitigation parcel to MLT (or similar land management entity approved in the final HMMP) and the transfer of the final approved funding amount to the endowment account established for the long-term management of the parcel, consistent with all applicable special conditions of this CDP.

ii **Implementation of Habitat Enhancement Activities.** WITHIN THREE (3) YEARS OF COMMENCEMENT OF CONSTRUCTION, the Permittee shall ensure commencement of implementation of the habitat enhancement activities in the final HMMP pursuant to a CDP issued by Mendocino County or a CDP amendment issued by the Commission, if required and as applicable. If any conditions of the CDP for the implementation of the offsite mitigation conflict with the final HMMP and/or special conditions of this CDP, the Permittee shall submit an application for an amendment to this CDP within 60 days, unless the Executive Director determines an amendment is not legally required. If implementation of the habitat enhancement activities in the final HMMP has not commenced within three (3) years of commencement of construction, the Permittee shall submit a revised or supplemental HMMP to compensate for the delay in mitigation.

The Executive Director may extend any deadline above if the Executive Director determines that the Permittee and designated land management entity (e.g., MLT) have: (1) been diligently pursuing the completion of the tasks and milestones, and (2) have demonstrated good cause for any identified delays.

C. **Consistency.** The Permittee shall undertake development in accordance with the final approved HMMP. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission approved amendment to this CDP

unless the Executive Director determines that no amendment is legally required.

10. **Offsite Habitat Mitigation Agreements and Non-Wasting Endowment Fund.**

A. **Mitigation Parcel Acquisition Funding Agreement.** PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit a signed formal agreement in a form and content acceptable to the Executive Director between the Permittee, Mendocino Land Trust (MLT), the State Coastal Conservancy (SCC), and/or other similar non-profit land management or state entities approved in the final HMMP, which shall provide for the transfer of 100% of the cost of the purchase of the mitigation parcel identified in the final HMMP from the Permittee to either 1) SCC, 2) MLT, or 3) another non-profit land management or state entity approved in the final HMMP.

B. **Long-Term Mitigation Parcel Management Agreement.** WITHIN 90 DAYS OF TRANSFERENCE OF THE MITIGATION PARCEL, the Permittee shall submit a signed formal agreement in a form and content acceptable to the Executive Director between, at a minimum, the Permittee, Mendocino Land Trust (or a similar approved land management entity responsible for managing the mitigation parcel long-term), and the National Fish and Wildlife Foundation (or a similar approved entity responsible for holding the endowment), who shall agree to the following minimum requirements:

i **Agreement for Acquisition**. The funding provided by the Permittee in accordance with the final HMMP and all special conditions of this CDP, shall be used for the acquisition of the mitigation parcel, to protect the mitigation parcel, and to implement the long term management plan in the final HMMP, or to transfer the funds to another entity approved by the Executive Director that will use the funds for the acquisition of the mitigation parcel, to protect the mitigation parcel, and to implement the long term management plan in the final HMMP.

ii **Responsibility**. The agreement shall acknowledge that although Mendocino Land Trust (or a similar approved land management entity) may implement components of the final HMMP such as the long-term management plan, the Permittee (Caltrans) shall remain ultimately responsible for successful implementation of the final HMMP and compliance with all terms and conditions of this CDP. The Permittee shall also be ultimately responsible for acquiring all permits and approvals necessary for implementing the habitat enhancement activities in the final HMMP, unless otherwise specified in the final approved HMMP.

iii **Endowment.** The agreement shall provide for the establishment of a non-wasting endowment funded by the Permittee to fund all of the long-

term management activities associated with protection of the habitat on the mitigation parcel and any other measures and purposes approved in the final offsite HMMP and required by special conditions of this CDP. The endowment shall be deposited into a separate interest-bearing account held by the National Fish and Wildlife Foundation (or a similar entity approved by the Executive Director). The endowment shall be in an amount sufficient to ensure the long-term maintenance and preservation of the mitigation parcel consistent with the final offsite HMMP and all special conditions of this CDP. The original endowment and any accrued interest shall be used solely for the purposes described in the final approved HMMP.

The Executive Director may extend any of the deadlines above if the Executive Director determines that the Permittee and designated land management entity (e.g., MLT) have: (1) been diligently pursuing the completion of the tasks and milestones, and (2) have demonstrated good cause for any identified delays.

11. **Open Space Deed Restriction.** WITHIN THREE (3) YEARS OF TRANSFERRANCE OF THE MITIGATION PARCEL, consistent with Special Conditions 9 and 10 above, the Permittee shall provide evidence that a deed restriction in a form and content acceptable to the Executive Director has been executed and recorded restricting the mitigation parcel in perpetuity, consistent with special conditions of this CDP and the following terms:

    A. **Allowed Uses and Development.** No development, as defined in section 30106 of the Coastal Act, shall occur on the mitigation parcel except for the following types of development if approved under separate CDP authorization: (a) grazing for habitat enhancement purposes consistent with Special Condition 9-A-v; (b) activities associated with habitat maintenance, enhancement, and restoration consistent with the final approved HMMP; and (c) construction and maintenance of the California Coastal Trail and associated features as a nature-study resource-dependent use.

    B. **Recordation.** The restriction shall be recorded free of prior liens and any other encumbrances that the Executive Director determines may affect the interest being conveyed, and it shall include formal legal descriptions of the entirety of the mitigation parcel, a metes and bounds legal description and graphic depiction, prepared by a licensed surveyor based on an on-site inspection, drawn to scale and approved by the Executive Director, of the deed restricted area. The deed restriction shall run with the land in favor of the People of the State of California, binding successors and assigns of the landowner in perpetuity.

    If the Permittee does not provide evidence of a recorded deed restriction that complies with this condition as described above, the Permittee shall submit an application to amend this permit to modify the deadline in this condition and

authorize any additional mitigation determined to be necessary due to the delay in compliance with this permit condition.

12. **Root Wad Revetment Monitoring Plan.** NOT LESS THAN 30 DAYS PRIOR TO COMMENCMENT OF CONSTRUCTION, the Permittee shall submit a Root Wad Revetment Monitoring Plan for the review and approval of the Executive Director.

    A. **Components.** The plan shall include, at a minimum, the following components:

        i Success criteria developed in consultation with CDFW including, at a minimum, criteria related to survival and cover of willows and other vegetation planted as part of the bio-engineered structure.

        ii Provisions for submittal to the Executive Director, within 90 days of completion of construction, final “as-built” plans verifying the installation of the structure as proposed and the removal of all of the existing unvegetated large diameter rock slope protection in the channel along the northern creek bank and below the ordinary high water mark (OHWM).

        iii Monitoring and reporting plans that include (i) plans for monitoring the root wad revetment structure and associated willow plantings for a minimum of five years, (ii) provisions for the submittal of annual monitoring reports in Years 1, 3, and 5, beginning the first year after completing construction of the root wad revetment, to the Executive Director; and (iii) a schedule for annual monitoring activities and report submittal dates. Monitoring reports shall document the condition of all components of the root wad revetment, with photographs taken from the same fixed points in the same directions, and shall evaluate ecological performance and progress towards success criteria. In addition to evaluating progress towards success criteria, monitoring reports shall include an evaluation by a qualified engineer of the performance of the root wad revetment as a bank stabilization strategy, such as regular surveys to evaluate movement of the revetment components and to quantify any observed erosion or scour. The monitoring reports shall also include any anecdotal information available concerning evidence of fish and wildlife presence/use of the root wad structure.

    B. **Provision for Remedial Action**. If the final monitoring report indicates that the root wad revetment structure has been unsuccessful, in part or in whole, based on the approved success criteria, the Permittee shall submit within 90 days a revised or supplemental plan for the review and approval of the Executive Director to compensate for those portions of the original program which did not meet the approved success criteria. The revised or supplemental plan shall be prepared by a qualified engineer and shall specify measures to remediate those portions of the original approved plan that have

failed or have not been implemented in conformance with the original approved plan. The revised plan shall be processed as an amendment to this CDP, unless the Executive Director determines that no amendment is legally required.

C. **Consistency.** The Permittee shall implement the final approved Root Wad Revetment Monitoring Plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission approved amendment to this CDP unless the Executive Director determines that no amendment is legally required.

13. **Temporary Creek Diversion System Plan.** The Permittee shall undertake development in compliance with the proposed measures included in Exhibit 5 to protect coastal resources during the temporary stream diversion activities, as supplemented or modified herein:

    A. NOT LESS THAN 30 DAYS PRIOR TO ANY CREEK DIVERSION OR DEWATERING ACTIVITIES, the Permittee shall submit a Temporary Creek Diversion System Plan for the review and approval of the Executive Director. The plan shall specify in graphic and narrative form, at a minimum: (a) the layout and footprint of stream diversion configurations used for each in-water season; (b) BMPs to minimize turbidity increases during installation and removal and to periodically monitor water quality while the diversion is in place; (c) details concerning the quantity, size, and layout of pass-through culverts or alternative fish passage method in the stream diversion that will be used to achieve permeability sufficient to accommodate fish passage, if feasible; (d) the methods for pumping, storing, and discharging water generated from diversion and dewatering activities, if any; and (e) methods for aquatic species guidance, capture, and relocation.

    B. The Permittee shall undertake development in accordance with the approved final Temporary Creek Diversion System Plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission approved amendment to this CDP unless the Executive Director determines that no amendment is legally required.

14. **Pile Driving Limitations and Hydroacoustic Monitoring.** The Permittee shall undertake development in compliance with the proposed measures included in Exhibit 5 to minimize the potential for exceedance of threshold sound levels and impacts to coastal resources during pile driving and hoe-ram operations, as supplemented or modified herein:

    A. Pile driving activities shall be conducted between June 15th and October 15th to avoid the primary salmonid migration season, unless an exception is

requested of and approved by the Executive Director and the federal resource agencies.

B. Vibratory pile driving shall be used in lieu of impact pile driving whenever feasible. Impact driving and hoe-ram operations shall be minimized to the extent practicable.

C. During impact driving, the contractor shall limit the number of strikes per day to the minimum necessary to complete the work and shall limit the total number of hammer strikes per day to stay below the cumulative sound exposure level (SEL) injurious to fish as established by the Fisheries Hydroacoustic Working Group (FHWG) or otherwise determined by conditions of other agency approvals. Pile-driving activities shall cease for the day if the noise levels approach specified thresholds.

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

E. If in-water pile driving is necessary, the area shall first by dewatered using a clear water diversion or a sound attenuation device shall be installed 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.

F. NOT LESS THAN 30 DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit, for the review and written approval of the Executive Director, a Hydroacoustic Monitoring Plan prepared by qualified personnel, 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. Prior to submitting the plan to the Executive Director, the Permittee shall submit copies of the plan to the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and the National Marine Fisheries Service for their review and consideration. The Permittee shall implement the Hydroacoustic Monitoring Plan during all construction activities that have the potential to produce impulsive sound waves, including pile driving, hoe-ramming, and jackhammering. The Permittee shall implement the final approved Hydroacoustic Monitoring Plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission approved amendment to this CDP unless the Executive Director determines that no amendment is legally required.

15. **Stormwater Pollution Prevention Plan.** NOT LESS THAN 30 DAYS PRIOR TO COMMENCEMENT OF ANY DEVELOPMENT, including vegetation removal, the Permittee shall submit, for the review and approval of the Executive Director, a Stormwater Pollution Prevention Plan. The plan shall include written confirmation

that the plan includes all proposed measures included in Exhibit 5, as supplemented or modified herein, and complies with all terms and conditions of this CDP.

A. The plan shall include, at a minimum, the following required components:

i A construction site map delineating the construction site and the location of all temporary construction-phase BMPs (such as silt fences, fiber rolls, straw wattle dikes, compost berms, and inlet protection), staging and stockpiling areas, vehicle and equipment maintenance and fueling areas, concrete washout areas, and dewatering facilities;

ii A description of the BMPs that will be implemented to minimize erosion and sedimentation, control runoff, and minimize the discharge of other pollutants as a result of construction activities, including temporary stream diversion and dewatering activities;

iii A description of how accumulated stormwater, groundwater, and surface water from excavations, temporary containment facilities, and dewatering operations would be handled and disposed of in a way that minimizes erosion and water quality impacts; and

iv A schedule for the management of all construction-phase BMPs (including installation and removal; training for construction personnel; and ongoing operation, inspection, maintenance, and monitoring and reporting).

B. The Permittee shall undertake development in accordance with the approved final Stormwater Pollution Prevention Plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission approved amendment to this CDP unless the Executive Director determines that no amendment is legally required.

16. **Debris Disposal Plan.** NOT LESS THAN 30 DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit, for the review and approval of the Executive Director, a plan for the disposal of excess construction debris and materials including excess fill, vegetated spoils, construction debris, and waste material.

A. The plan shall include, at a minimum, the following:

i A description of the anticipated excess fill, vegetated spoils, debris, and waste material expected, which shall identify any hazardous materials;

ii A site plan showing all proposed locations for the temporary stockpiling of construction debris, soils and vegetative spoils, excess materials, and any other debris and waste associated with the authorized work in

relation to wetland and riparian areas, project features, and property lines;

iii A schedule for removal of stockpiled materials from the construction site and identification of all authorized debris disposal sites that will be used for lawful disposal;

B. The Permittee shall undertake development in accordance with the approved final Debris Disposal Plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission approved amendment to this CDP unless the Executive Director determines that no amendment is legally required.

17. **Seismic and Tsunami Hazard Response Plan.** WITHIN 60 DAYS OF COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit, for the review and approval of the Executive Director, a plan for mitigating the risks to the public from the potential impacts of extreme tsunami and seismic events on the new bridge. At a minimum, the plan shall identify the steps that would be taken in the event of a tsunami and/or seismic event to: (a) warn the traveling public of possible hazardous conditions, (b) physically close the bridge, if necessary, (c) detour traffic to alternate routes, and (d) inspect the bridge for damage. The plan shall be developed in coordination with emergency response agencies, including Mendocino County and other relevant local governments.

18. **Other Agency Approvals.** PRIOR TO COMMENCEMENT OF ANY DEVELOPMENT, the Permittee shall submit to the Executive Director written evidence that all necessary permits, permissions, approvals, or authorizations for the approved project have been granted by all other applicable agencies, including at a minimum the California Department of Fish and Wildlife (CDFW), the Regional Water Quality Control Board (RWQCB), State Lands Commission (SLC), and the U.S. Army Corps of Engineers (USACE), or evidence that no such authorizations are required from each of these entities. The Permittee shall inform the Executive Director of any changes to the project required by any other authorizations. Any such changes shall not be incorporated into the project until the Permittee obtains an amendment to this CDP, unless the Executive Director determines that no amendment is legally required.

19. **Final Agency Consultations.** PRIOR TO COMMENCEMENT OF ANY DEVELOPMENT, the Permittee shall submit evidence, for the review and approval of the Executive Director, that the National Marine Fisheries Service (NOAA-Fisheries) has issued a final consultation document in support of the development authorized by this permit and that are consistent with all terms and conditions of this permit. The Permittee shall inform the Executive Director of any changes to the project required by the federal resource agencies. Such changes shall not be incorporated into the project until the Permittee obtains a Commission approved

amendment to this CDP, unless the Executive Director determines that no amendment is legally required.

20. **Authority to Implement Conditions of Approval.** PRIOR TO ISSUANCE OF CDP 1-22-0446, the Applicant shall submit for the review and approval of the Executive Director evidence that clearly demonstrates the legal right, interest, or entitlement to carry out the conditions of approval of CDP 1-22-0446, including but not limited to evidence the Applicant has acquired all necessary right-of-way and/or temporary construction easement(s) for properties on which the proposed development would be located.

21. **Assumption of Risk, Waiver of Liability, and Indemnity Agreement.** By acceptance of this permit, the Permittee acknowledges and agrees (A) that the site may be subject to hazards from tsunamis, storms, flooding, erosion, earth movement, and other natural hazards, which may worsen with climate change and sea level rise; (B) to assume the risks to the Permittee and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (C) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (D) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

22. **Liability for Costs and Attorneys' Fees.** By acceptance of this permit, the Applicant/Permittee agrees to reimburse the Coastal Commission in full for all Coastal Commission costs and attorneys' fees that the Coastal Commission may be required by a court to pay that the Coastal Commission incurs in connection with the defense of any action brought by a party other than the Applicant/ Permittee against the Coastal Commission, its officers, employees, agents, successors and assigns challenging the approval or issuance of this permit. The Coastal Commission retains complete authority to conduct and direct the defense of any such action against the Coastal Commission.

IV. Findings and Declarations:

A. Project Description

The California Department of Transportation (Caltrans) proposes to replace the Highway 1 bridge over Elk Creek (Bridge No. 10-0120) in rural Mendocino County. The Elk Creek Bridge is located approximately 2.5 miles south of the town of Elk between post miles 31.2 and 31.46, which is about 17 miles south of the town of Mendocino and 16 miles north of the City of Point Arena (Exhibit 02). The purpose of the project is to update the Elk Creek Bridge and approach roadways to improve safety and reliability of the bridge in the event of a collision or emergency incident, seismic event, or other

catastrophic failure; address critical scour issues; and to provide safe access for pedestrians and cyclists across the bridge, including on a separated pathway.

The existing Elk Creek Bridge was constructed in 1938 and seismically retrofitted in 1996. Following winter storms in 2016, an inspection revealed significant scour on both sides of the channel at Piers 2 and 3, as well as failure of the concrete slope protection at Abutment 4 (Exhibit 03). Caltrans ultimately determined that the bridge is scour critical[3] and required a full replacement.

In addition to the structural deficiencies of the bridge, the bridge does not meet present day safety and multimodal access standards. The nonstandard features on the existing bridge include narrow shoulder widths that do not provide sufficient area for disabled vehicles or safe access for pedestrians and bicyclists crossing the bridge; existing bridge railing that does not meet current design safety standards and is decayed; and raised concrete areas adjacent to the shoulders that are not compliant with the Americans with Disabilities Act (ADA) standards.

The proposed project and construction process is summarized below and described in detail in Exhibit 4 (Project Description).

Caltrans proposes to replace the existing 122-foot-long bridge with a longer, 140-foot-long, full-span, cast-in-place bridge structure founded on driven steel H-piles. The vehicular lanes would be widened from 11 feet to 12 feet, and the bridge shoulders, currently approximately 2 feet wide, would be widened to 6 feet on both sides and a 6-foot separated pedestrian and bicycle pathway would be added to the western southbound lane.

Table 1. Summary of Existing and Proposed Bridge Dimensions

Existing Bridge Dimensions			Proposed Bridge Dimensions			Increase in Bridge Dimensions		
Length (ft)	Width (ft)	Area (ft^2)	Length (ft)	Width (ft)	Area (ft^2)	Width (ft)	Area (ft^2)	Area (acre)
122	30.5	3,721	140	47	6,580	16.5	2,859	0.066

The new bridge would be in approximately the same location as the current bridge; however, the project would straighten out the curve of the roadway at this location slightly by constructing the new bridge slightly to the west and shifting the centerline of the roadway within the project area, thereby improving safety and reducing the potential for accidents and collisions on the bridge. The roadway approaches on both sides of the bridge would be widened to match the new bridge width before tapering down to match the existing roadway width north and south of the project site. Existing guardrail would

[3] 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.

be replaced with the current standard Midwest Guardrail System and extended along the southbound lane, and concrete vegetation control will be installed below the guardrail.

The project also proposes certain improvements within the Elk Creek channel, including the removal of concrete slope paving and two concrete piers and pier caps from the stream and the banks of the creek. Additionally, Caltrans would remove existing rock slope protection (RSP) on the northern bank of the creek and replace it with a bio-engineered root wad revetment, primarily under and upstream of the bridge, which would primarily serve to restore and enhance available natural bank habitat for salmonids but would also help stabilize the bank and protect the new northern bridge abutment from erosion. The revetment system would be constructed along approximately 160 feet of the northern 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 with materials such as willow stakes, bundles, or fascines, and sod mats. As part of the root wad revetment construction, a bankfull bench at approximately 12 feet in elevation would be constructed immediately behind the root wads 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.

As discussed in Section D (Wetlands), below, in addition to onsite mitigation efforts to compensate for unavoidable impacts to wetland habitat, Caltrans proposes an offsite habitat mitigation package in the form of funding the acquisition of a private coastal blufftop property in Mendocino County in the name of a local land trust, enhancement of the existing habitat on the property via substantial invasive species removal, and protection of the habitat on the property in perpetuity under an open space deed restriction. However, as described below, any development associated with implementing the offsite habitat enhancement activities would be authorized through a separate permitting process, if required.

Construction Methods and Timing

During construction Caltrans will construct a temporary, one-lane, 22.5-foot-wide, 140-foot-long bridge and temporary roadway approaches east of the current bridge and roadway alignment to accommodate alternating, one-way traffic control throughout the construction period. The temporary bridge would be offset two feet from the existing bridge and approximately four feet from the new bridge.

Project construction will also require vegetation clearing, grading, and other ground disturbing activities; construction of a temporary work platform over the creek, temporary stream diversions, and potentially temporary dewatering of the stream; demolition and removal of the existing bridge; and pile installation.

Currently, construction is anticipated to span three calendar years and approximately 24 months, with two in-water construction seasons. Work during the first year,

preconstruction site prep, would be limited to the fall/winter and would entail initial clearing of shrubs and trees within the project area. The second year would be the first in-water work season 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 would entail a second stream diversion, removal of the temporary bridge, completion of the new bridge, and installation of the root wad revetment.

Project Location and Environmental Setting

The project site is located in a rural, largely undeveloped area of the County, just south of the community of Elk (Exhibits 1 and 2). The highway within the project area is a two-lane facility classified as a rural minor arterial highway. Within Mendocino County, Highway 1 follows nearly the full coastline and is a popular choice for tourists using both motorized and non-motorized means of travel. Highway 1 is essential for travel up and down the coast and vital for the local community, broader region, and travelling visitors, as well as providing critical access to coastal recreation areas. No alternative routes provide sufficient public access up and down the coast, without significant detours and delays.

The land use within the broader highway corridor in the project area is primarily rural agriculture with natural areas and minimal urban development. North and south of the project location, the broader highway corridor is relatively straight for miles and is elevated on coastal bluffs with views of the Pacific Ocean to the west and forested mountains and ridgelines to the east.

The project site is located within the Elk Creek drainage where it dissects along the western edge of an uplifted marine terrace forming an approximately west trending canyon. Directly south of the project there are hairpin turns that wind steeply down to Elk Creek from the bluff tops. These turns provide views of the Elk Creek estuary and beach, as well as the Pacific Ocean, riparian forest, wetlands, and coastal bluff faces, although the bridge is not visible from this point as it is obstructed by the riparian forest. The road skirts the estuary, runs along Elk Creek and enters a forested area before reaching the bridge. Directly to the north of the project site, the road makes a wide arcing loop around the riparian forest to return to the shoreline and bluff tops.

The existing Elk Creek Bridge spans across the creek on approach embankments. (Exhibit 3). Elk Creek itself is a perennial stream with riparian mixed forest and is considered a wetland scenic corridor. The creek flows approximately west-northwest between the foothills of the coast range mountains to the east and a broad sandy beach and the Pacific Ocean to the west. The creek channel is armored by gravelly alluvium and typically flanked by near vertical creek banks of up to 10 feet in height exposing alluvium dominated by silty sands. These banks form the edges of a narrow floodplain across which the creek channel meanders through the project area. The creek can be somewhat viewed from the bridge to the east and west; however, under existing conditions, the riparian forest somewhat obstructs views as well as the natural bends of the creek and adjacent uplifted terraces. The limited views are somewhat difficult to see while driving, and no safe pedestrian access is currently available for viewing Elk Creek.

Habitat and Wildlife

The project site is densely vegetated with riparian habitat, including red alder forest, Sitka willow thicket, and coastal brambles. There is also an area of Douglas fir forest and a flat and previously disturbed floodplain area in the northeast portion of the project site. There are also two seasonal wetlands within the Biological Study Area[4] (BSA). One of the seasonal wetlands is in a roadside ditch; the other seasonal wetland occurs within the BSA in a dirt road northeast of the bridge. Potentially suitable habitat is present for two species of rare plants; however, no federal/state-listed or otherwise special-status plants have been documented within the project area.

Elk Creek and its surrounding habitat also provide habitat for a variety of wildlife, including, but not limited to, several special-status species such as foothill yellow-legged frog, California red-legged frog, northern red-legged frog, western pond turtle, Northern California steelhead, Central California Coast coho salmon, Pacific lamprey, and the western red bat. The bridge structure and riparian forest also provides nesting habitat for birds and roosting habitat for various species of bats.

B. Standard of Review

Portions of the proposed project will occur within the Coastal Commission's retained CDP jurisdiction, while the remainder of the project is located within the County of Mendocino's LCP jurisdiction. Under Coastal Act Section 30601.3, when a project requires a CDP from both a local government with a certified local coastal program and the Commission, the Commission may process a consolidated CDP application for the proposed development when the applicant, the local government, and the Commission's Executive Director agree to process the CDP as a consolidated CDP. In this case, the Mendocino County Board of Directors adopted a resolution (resolution no. 22-035) authorizing the consolidated coastal development permitting process on February 14, 2022, Caltrans provided a copy of the resolution to Commission staff with the subject CDP application and requested the consolidation as well, and the Commission's Executive Director agreed to the consolidation.

C. Other Agency Approvals and Property Acquisitions

As described below, Caltrans has acquired some other agency approvals, but others remain to be issued. To ensure that Caltrans obtains all necessary agency approvals, and that these approvals are consistent with the project authorized herein, the Commission attaches **Special Condition 18**, which requires the permittee to submit to the Executive Director evidence of all other agency approvals of the project prior to the commencement of construction activities. The condition requires that any project changes resulting from any other agency approval not be incorporated into the project until the permittee obtains any necessary amendment to this CDP.

[4] The BSA is the area of potential impacts of the project plus a 100-foot buffer area.

National Marine Fisheries Service (NMFS)

The project requires coordination with NMFS for potential impacts to Central California Coast (CCC) coho salmon and Northern California (NC) steelhead trout under the federal Endangered Species Act. Caltrans began consulting with NMFS regarding the project in November 2020 and received a Biological Opinion (BO) from the Service on May 5. 2022. The BO concludes that the Elk Creek Bridge Replacement Project, as proposed, is not likely to jeopardize the continued existence of CCC coho and NC steelhead. NMFS lists several "terms and conditions" under which the project must be implemented to protect the listed species. These are included in Exhibit 5.

Caltrans recently indicated that it had reinitiated consultation with the service for slight project changes. However, **Special Condition 19** requires that any project changes required by NMFS not be incorporated into the project until the permittee obtains any necessary amendments to this CDP.

U.S. Fish and Wildlife Service (USFWS)

The project also requires consultation with the U.S. Fish and Wildlife Service (FWS) regarding potential impacts to California red legged frog and tidewater goby under the federal Endangered Species Act. Caltrans began consulting with the USFWS regarding the project in March 2018 and received a Biological Opinion (BO) from the Service on February 28, 2022. The BO concludes that the Elk Creek Bridge Replacement Project, as proposed, is not likely to jeopardize the continued existence of the tidewater goby or the California red legged frog. The USFWS based its conclusion on several factors, including the proposed inclusion of several conservation measures in the project to protect the listed species. These are included in Exhibit 5.

California Department of Fish and Wildlife (CDFW)

The project requires a Section 1602 Lake and Streambed Alteration Agreement and California Endangered Species Act Section 2081(b) Incidental Take Permit. Copies of the agreement and permit have not yet been provided.

North Coast Regional Water Quality Control Board (NCRWQCB)

The project requires a Clean Water Act Section 401 Water Quality Certification. A copy of this approval has not yet been provided.

U.S. Army Corps of Engineers (USACE)

The project requires a Clean Water Act Section 404 Nationwide Permit and Rivers and Harbors Act of 1899 Section 10 Permit for Work in Navigable Waters. A copy of this approval has not yet been provided.

California State Lands Commission (SLC)

Caltrans has provided a letter from the SLC indicating that, based on the information available, a lease from the SLC for the project is not required at this time.

Private Property

The project would involve acquisition of permanent highway right of way (ROW) for the bridge replacement and a temporary construction easement (TCE) for bridge access and temporary bridge placement during construction of the replacement bridge. Specifically, approximately 0.29 acres would be temporarily acquired for use as staging areas and for construction of the temporary bridge and approximately 0.2 acres of land would be permanently acquired on the western side of Highway 1 for incorporation into the Caltrans ROW and approximately 0.12 acres of land would be permanently acquired on the eastern side of the bridge for cut and fill activities associated with the temporary bridge. All areas used as TCEs would be returned to their pre-construction condition following the construction period. The permanent ROW and TCE are both needed from the same property owner whose land the highway cuts though at this location. Caltrans has not yet submitted copies of the TCE and ROW acquisitions necessary to implement the project; therefore, **Special Condition 20** requires that copies of the acquisition or TCE, or other sufficient evidence of a legal right, interest, or other entitlement to use the property for the proposed development as conditioned, be submitted prior to the issuance of this permit.

D. Wetlands

Coastal Act Section 30233 states, in relevant part, as follows:

> *(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*
>
> [...]
>
> *(4) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.*
>
> […]
>
> *(b) Dredging and spoils shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation...*
>
> *(c) In addition to the other provision of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary...*

Section 30108.2 of the Coastal Act defines “fill” as “earth or any other substance or material, including pilings placed for the purposes of erecting structures thereon, placed in a submerged area.” Additionally, the Commission has long considered grading, excavating, and other ground-disturbing activities in coastal wetlands, riparian areas and estuaries to be a form of dredging or fill.

Habitat Description and Anticipated Impacts

The following proposed project construction activities[5] would involve dredging and filling within coastal wetlands and therefore must be found consistent with section 30233:

- Riparian vegetation removal and other construction area clearance and site preparation activities on the banks of the creek constitute wetland dredging.

- Construction of temporary access roads and temporary bridge and roadway approaches on the banks of the creek constitutes wetland dredging (grading) and temporary filling.

- Construction of replacement bridge and abutments walls and road widening on the banks of the creek constitute wetland filling.

While riparian habitats often meet the definition of Environmentally Sensitive Habitat Area (ESHA) under the Coastal Act, the riparian vegetation within the project area also meets the definition of a wetland under the Coastal Act due to its predominance by hydrophytic vegetation. Therefore, the proposed diking, dredging, and filling impacts to riparian and other wetland habitats at the site are analyzed herein.

Caltrans anticipates disturbing approximately 2.45 acres of soil for the proposed project, with a total anticipated cut of 570 cubic yards and total anticipated fill of 690 cubic yards, and this ground disturbance/grading (dredging) will occur primarily on the banks of the creek within coastal wetland habitat.

The proposed project also includes removal of some fill from the creek channel and enhancement to creek bank habitat. The proposed bridge will be a single-span structure with no piers in the stream channel. The existing pier walls and pier caps will be completely removed, and the bridge will be lengthened, resulting in an estimated 180-square-foot increase in active channel habitat below the ordinary high water mark (OHWM). The project additionally includes enhancements to wetland and stream habitat on the northern bank of the creek via the removal of existing unvegetated rock slope protection and replacement with a bio-engineered root wad revetment; this project component is more specifically discussed in Section E (stream alteration), below.

As mentioned above in Section A (Project Description), Elk Creek is an important fish-bearing stream that provides spawning and rearing habitat for a variety of salmonids and other sensitive aquatic species, including federally threatened Northern California steelhead (Oncorhynchus mykiss), federally endangered (FE) and state endangered Central California Coast (CCC) coho salmon (O. kisutch), state species of special concern (SSC) Pacific Lamprey (Entosphenus tridentatus), FE tidewater goby (Eucyclogobius newberryi), and FE/SSC California red-legged frog (Rana draytonii).

[5] Additional project activities that involve diking, dredging, and/or filling of wetlands include the construction of a root wad revetement on the northern bank of Elk Creek and the construction of a temporary dry work platform over the creek, a temporary cofferdam and stream diversion, and potential temporary dewatering of the creek during construction. However, these project activities are analyzed in Section E below for consistently with the more specific chapter three policy regarding stream alteration.

The riparian corridor surrounding Elk Creek provides foraging, nesting, and roosting habitat for a variety of riparian bird species including SSC yellow warbler (Setophaga petechia). The riparian habitat also provides potential foliage roosting habitat for SSC Western red bat (Lasiurus blossevillii).

Allowable Uses

The first test set forth above is that any proposed filling, diking, or dredging in wetlands must be for an allowable purpose as specified under section 30233 of the Coastal Act. The relevant category of use listed under section 30233(a) in this case is *incidental public service purpose*.

The primary purpose of the project is to maintain safe and reliable public access along coastal Highway 1. The development will not add vehicular lanes or a new route or otherwise increase vehicular capacity. The Commission has in many past actions, including for bridge projects, made a similar determination that dredging and filling for road safety improvement projects that do not increase vehicular capacity is an "incidental public service" pursuant to Coastal Act section 30233(a)(4). As the proposed dredging and filling is being undertaken by a public agency to serve the public, and therefore has a public service purpose, and the public safety purpose is incidental to the primary transportation purpose of the existing highway, the Commission finds that the proposed wetland dredging and filling is for an incidental public service purpose, an allowable use pursuant to Coastal Act section 30233(a)(4).

Alternatives Analysis

For projects involving dredging and filling of wetlands, the Commission must ensure that the approved project has no feasible less environmentally damaging alternative, consistent with section 30233 of the Coastal Act. Coastal Act section 30108 defines "feasible" as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social and technological factors." In this case, alternatives include: (1) the "no project" alternative; (2) an alternative bridge design; (3) alternative construction methods; and (4) replacement of the bridge on an alternative alignment.

The "No Project" Alternative

The "no project" alternative means that no repairs or improvements would be made to the existing bridge and roadway. As described in Section A (Project Description) this project is needed because the curve radius, shoulder and lane widths, and barrier rails on the existing Elk Creek Bridge do not meet current Caltrans safety and design standards and the bridge is scour critical. Additionally, the bridge currently lacks adequate, safe access for pedestrians and cyclists.

If the "no project" alternative is followed, the existing bridge would continue to not meet current Caltrans safety and design standards, the scour critical status would not be addressed, and the existing bridge would continue to lack adequate safe access for pedestrians and cyclists. Therefore, this alternative would not satisfy the purpose of and

need for the project. While the “no project” alternative would initially avoid the anticipated impacts described above, if the existing bridge failed and collapsed, the stream and surrounding wetland habitat could be more significantly impacted.

Additionally, the proposed project involves certain permanent enhancements to the stream and wetland habitat on the banks of the creek. But, if the “no project” alternative were followed, there would continue to be piers in the channel and abutments close together, restricting the stream channel, and there would also continue to be unvegetated rock slope protection armoring the north bank of the creek.

Therefore, the Commission finds that the “no project” alternative is not a feasible less environmentally damaging alternative to the proposed project, as conditioned.

Alternative Project Design

An alternative bridge design using a smaller bridge structure would likely involve smaller abutments and smaller roadway approaches and therefore less wetland fill and would also result in less vertical encroachment (shading) of wetlands.

While this alternative would likely have less impacts to wetlands, the narrower bridge design would not be sufficiently sized to allow the project’s proposed public access, multi-modal, and safety improvements, including the separated bicycle and pedestrian accessway and wider shoulders, which are intended to provide space for cyclists and for disabled vehicles. The proposed improvements have also been designed to incorporate the minimum width required to meet design and safety standards, including the American Disabilities Act (ADA) guidelines, for pedestrians and cyclists.

Although another bridge alternative could include the existing 11-foot wide lanes rather than new 12-foot wide lanes, the new bridge (only two feet less wide) would still require new, larger abutments to address safety issues and provide the separated bicycle and pedestrian accessway, so impacts to wetlands would not be significantly smaller.

Caltrans considered an alternative consisting of 12-foot lanes with 6-foot shoulders, which would have a smaller footprint in wetlands. However, this alternative was eliminated from further consideration because it did not include the 6-foot separated pedestrian and cyclist pathway, which is an important public access improvement.

The roadside wetland ditch that will be permanently filled as a result of construction of the southern bridge approach flanks the east side of the road. Avoiding this wetland by expanding the bridge approach further to the west, towards the creek, would require more impacts to the creek channel and surrounding wetland habitat than the proposed alternative of expanding into this small wetland ditch.

Overall, the selected alternative was designed to incorporate the smallest environmental footprint possible while still achieving the project purpose. Therefore, the Commission finds that use of an alternative design is not a feasible less environmentally damaging alternative to the proposed project, as conditioned.

Alternative Construction Methods

As described in Section A (Project Description), the proposed alternative involves construction of a temporary, 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 most of the construction period. The temporary bridge would be offset 2 feet from the existing bridge and approximately 4 feet from the new bridge. Therefore, the temporary bridge will be located as close as safely possible to the existing and replacement bridges to minimize the overall footprint of the project within stream and wetland habitat.

One alternative construction method Caltrans considered would have used a half-width construction strategy where one-way traffic control would have been maintained on one side of the bridge while the other side would have been demolished and reconstructed until the entire bridge was replaced. Although this alternative would have a smaller overall construction footprint within coastal wetland habitat, Caltrans eliminated this alternative from further consideration because the construction period would have been longer than the proposed alternative, which would have increased the duration and extent of construction related impacts to habitat, as well as public access.

Caltrans also considered an alternative that would have maintained traffic on the existing bridge, with construction of the new bridge to the east of the existing bridge using the Jack and Slide construction method, therefore reducing impacts associated with constructing the temporary traffic detour. However, Caltrans eliminated this alternative from further consideration because of significantly higher cost and additional adverse environmental impacts associated with this construction method.

Additionally, the selected alternative sizes the temporary construction access pathways that must be located within wetland habitat as conservatively as feasible based on type and size of construction equipment and the maneuvering room that will be required by the contractor to complete the work.

The proposed alternative minimizes wetland impacts from construction activities to the maximum extent possible. Therefore, the Commission finds that the use of alternative construction methods is not a feasible less environmentally damaging alternative to the proposed project, as conditioned.

Replacement on an Alternative Alignment

The proposed development largely maintains the existing road alignment, with a slight realignment to the west to straighten out the curve of the road to address safety issues. However, as the new, wider bridge requires the roadway approaches to the bridge be widened to conform to the wider bridge structure, this slight road realignment will not result in any more fill than if the existing alignment were to be maintained with the proposed project.

Replacing the bridge on a completely different alignment would not meet the Coastal Act definition of "feasible" as it would take an unreasonable period of time, would require significantly more public funds, and could have significant social and technological issues. Even changing the bridge alignment more significantly within the immediate vicinity of the existing bridge would likely result in substantially more wetland impacts. A much greater portion of the adjoining wetland habitat would be affected by realigning the bridge as the roadway would also need to be substantially realigned to connect to the bridge and therefore would involve significantly more habitat impacts than is expected with the proposed alternative.

Therefore, the Commission finds that an alternative bridge alignment is not a feasible less environmentally damaging alternative to the proposed project, as conditioned.

Based on the above alternatives analysis, the proposed project is the project alternative with the least impacts to wetlands. As proposed, the bridge widening design would also meet the purpose and need of the project. Therefore, the Commission finds that the proposed new bridge design minimizes disturbance to wetlands and is the least environmentally damaging feasible alternative available, consistent with section 30233(a).

General Impact Minimization and Mitigation Measures

Section 30233 further requires that feasible mitigation measures be provided to minimize adverse environmental effects of dredging and filling wetlands. Depending on the manner in which the proposed project is completed, the proposed dredging and filling within coastal wetland habitat could have significant adverse environmental effects on the quality and functional capacity of this habitat and the wildlife within these areas.

Caltrans proposes various standard construction-phase avoidance and minimization measures (AMMs) and best management practices (BMPs) (Exhibit 5) that will be implemented to generally protect wetland habitat and wildlife within these habitats in the project area during dredging and filling activities, including:

- Environmental awareness training for construction personnel;
- Pre-construction surveys for wildlife and biological monitoring by qualified personnel;
- Seasonal work windows;
- Use of barrier fencing to limit the construction footprint and prevent species from easily moving into work areas;
- Use of debris containment equipment and methods;
- Proper storage and disposal of construction waste;
- Preparation of a stormwater pollution prevention plan; and
- Maintenance of spill containment materials and equipment.

Impacts to wetland habitat would be further minimized through implementation of measures to minimize soil compaction and tilling of roots and control/reduce the spread of non-native, invasive species, including the use of mats to decrease soil compaction, seed collection and cuttings of native species, and topsoil stockpiling for on-site redistribution in compatible soil. Caltrans also proposes to avoid night work if feasible and to limit the use of artificial lighting if any night work is necessary.

To ensure these measures are implemented, the Commission attaches **Special Condition 2 (Construction Responsibilities).** The condition requires the permittee to undertake development in compliance with the proposed AMMs and BMPs, except as supplemented or modified by the special conditions of this CDP.

Mitigation for Wetland Impacts

The proposed diking, dredging, and filling project activities summarized above are currently anticipated to result in approximately 1.1 acres of permanent impacts to riparian and ditch wetland habitats; however, approximately 0.9 acre of the impacted riparian habitat will be restored onsite following completion of construction. In past actions by the Commission, the Commission has treated onsite habitat impacts which will be restored within one year to be "temporary." If restoration takes longer than a year to be fully restored, the Commission generally has treated such impacts as permanent due to the loss of habitat function during the time required for habitat regeneration after construction is complete and site restoration has commenced. In this case, the Commission's ecologist has reviewed the information concerning anticipated impacts to coastal wetlands and determined all 1.1 acres of anticipated impacts to coastal wetland habitat will take longer than a year to be fully restored. Therefore, the Commission finds these impacts should be treated as permanent for mitigation purposes. Caltrans proposes both onsite and offsite mitigation for wetland impacts, as discussed below

Proposed Site Restoration/Onsite Habitat Mitigation

Caltrans has submitted an Onsite Revegetation Plan (Exhibit 8), describing proposed site restoration and revegetation efforts and additional wetland habitat enhancement as mitigation for anticipated impacts, including proposed monitoring procedures and success criteria.

When construction is completed, the project work area will be restored by removing all construction debris and restoring all disturbed areas throughout the project footprint to a natural contour. 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.

While widening of the bridge abutments and roadway approaches is anticipated to permanently fill a small area of wetland habitat, the majority of impacted areas will be restored onsite at a 1:1 ratio. All temporarily impacted riparian areas would be replanted with the same native plant species palette that was removed, including red alder and willow species, and maintained and monitored to ensure successful restoration of

streambank shade and community re-establishment. Caltrans proposes to create a new 0.0015-acre wetland on the southeast quadrant of the bridge to compensate for loss of the wetland ditch of the same size in the same general location as a result of the necessary roadway approach widening. This small wetland would be located at the base of a cliff and would receive rainwater runoff and seepage from the cliff base. This area will be seeded during construction with appropriate wetland seed and augmented with container plants and/or plugs if needed. As this new wetland would not be a roadside ditch, which are subject to regular Caltrans maintenance activities such as scraping, the newly created wetland would represent a substantial functional improvement compared to the existing wetland.

Some of the existing riparian habitat adjacent to the bridge to the south is infested with invasive Cape ivy, covering an approximately 0.25-acre area. This plant species is considered to have “High” ecological impact by the California Invasive Plant Council (Cal-IPC). As additional habitat enhancement, Caltrans proposes to remove the Cape ivy from all areas to which they have access (all of their existing highway right of way which is about 0.18-acre, and potentially adjacent areas pending acquisition of the required Temporary Construction Easements and new, permanent highway right of way) to the greatest extent feasible for the duration of the maintenance and monitoring period. Currently, the Cape ivy is covering a rich understory, including sword fern and thimbleberry. Treatment would be performed by mechanical means and no herbicides would be used. After the initial treatment, the revegetation specialist will assess if the surviving understory could be augmented by supplemental planting.

Caltrans proposes a five-year maintenance and monitoring period, including watering, weeding, and protecting resprouting native vegetation. Caltrans will monitor annually, including survival counts, percent cover assessments, photo points, and wetland parameters, to assess progress toward the success criteria and identify remedial or adaptive management measures that may be required. Monitoring reports will be submitted to the Executive Director in years 1, 3, and 5.

Final proposed success criteria at the end of Year 5 include at least 100% of the number of riparian 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, except in the case of natural erosive stream impacts which may wash away some installed vegetation. If this occurs, the area will be revegetated as much as possible. In the root wad revetment *bench* (as opposed to the bank, which will be evaluated differently[6]) revegetation areas, Caltrans proposes that at least 85% of the number of native woody plants that were installed in Year 1 will be alive in Year 5. The Cape ivy treatment areas in the southeast and southwest quadrants will have 5% or less cover of Cape ivy, and recovering riparian tree, shrub, and herbaceous species will be present.

[6] The success criteria for the root wad revetment *bank* plantings, and the general success of the root wad revetment as a structure, will be addressed in a Root Wad Revetment Monitoring Plan, as discussed in Section E (Stream Alteration), below.

To ensure that the wetland, stream, and riparian areas temporarily disturbed by dredging and filling activities are restored as proposed, **Special Condition 8 (Habitat Impact Mitigation Requirements)** requires submittal of a final Onsite Revegetation Plan that substantially conforms with the draft plan (Exhibit 8). The final revised plan shall include modified goals and objectives that provide for removal of Cape ivy from the onsite restoration area during a 5-year post-construction monitoring period, as well as any other invasive species rated "Moderate" and "High" by Cal-IPC. Currently, various other invasive plants occur within the project footprint and have the potential to spread as a result of proposed ground disturbing project activities. Special Condition 8 also requires submittal of a final "as-built" habitat impact report after completion of construction verifying that the extent and nature of actual construction impacts does not exceed the projected impacts in the final ORP, in order to ensure there is adequate mitigation for all habitat impacts.

As the majority of wetland habitat disturbed during construction will be restored on site and would be small in scale as compared to the surrounding community, no change in the overall quality, characteristics or structure of these communities within the project vicinity or proliferation of invasive species are expected. However, there will be a temporal loss of function of these habitat areas during construction and during the time it will take for them to fully reestablish. Therefore, additional mitigation beyond that which is proposed onsite and discussed above is necessary to adequately compensate for anticipated impacts.

Additional Proposed Offsite Mitigation for Wetland Impacts

Given the limited space and opportunities for habitat enhancements within Caltrans' highway right of way at the location of the Elk Creek Bridge, Caltrans proposes offsite habitat mitigation in addition to the proposed onsite mitigation described above to compensate for temporal loss of the impacted wetland habitat. Caltrans proposes additional off-site mitigation through the purchase of a property on the Mendocino County coast, known as the LaBoube property or Saunders Landing, to provide for permanent habitat enhancement and preservation and the placement of that property under a conservation open-space deed restriction. As described in the draft Offsite Habitat Mitigation and Monitoring Plan (HMMP) submitted by Caltrans as part of their permit application (Exhibit 10), Caltrans also proposes to fund an endowment for the long-term maintenance of the habitat on the mitigation property. Initially, Caltrans identified several off-site mitigation projects that potentially could provide compensatory mitigation but ultimately determined that property acquisition/habitat preservation and restoration at the LaBoube property is the most appropriate feasible option to compensate for the project's anticipated habitat impacts (see feasibility matrix starting on page 55 of Exhibit 10).

As described in the following paragraphs, Caltrans proposes the Saunders Landing "mitigation package" for three separate Caltrans projects,[7] in this matter, the Commission is reviewing the mitigation proposal for whether it provides adequate mitigation for the subject Elk Creek Bridge Replacement Project only.

The LaBoube property (APNs 142-010-53 & 142-010-54) is a 12-acre undeveloped, oceanfront, blufftop site located along Highway 1 at approximately post mile 10.2, approximately 20 miles south of the Elk Creek Bridge. The property is bisected by Highway 1, containing a 7.5-acre area to the west (western parcel) and a 4.5-acre area to the east (eastern parcel). The adjacent parcel to the north of the western parcel is a lookout/rest area, within the Caltrans right of way. To the south of the western parcel is a parcel owned by the Redwood Coast Land Conservancy (RCLC). The western parcel is directly adjoined along its western and southern edges by the Pacific Ocean. Parcels to the north and south of the eastern parcel are privately owned. Directly south of the eastern parcel is a large subdivision (Iversen Subdivision) which contains approximately 80 residential lots. Directly north of the eastern parcel is a similar sized lot, although currently undeveloped, that appears to be dominated by non-native grasslands. Hearn Gulch, a perennial stream, runs through the eastern parcel and emerges directly south of the western parcel, bisecting the adjacent parcel owned by RCLC, and terminating at Hearn Gulch Beach.

The LaBoube property 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, which has led to the subject mitigation package and property being referred to as "Saunders Landing". The property is in an area designated as "highly scenic" under the Mendocino County certified LCP.

The LaBoube property is currently under private ownership and is believed to have been purchased with the intent to develop a residential dwelling, however a residence was never constructed. Currently, there is no active land use activity on the property; the site is uninhabited and unmanaged. As a result, the public uses the western parcel to access Hearn Gulch Beach via a Caltrans lookout/rest area located directly north of the western parcel. As this access is not formally authorized and there is no formal trail here, this public access is at risk of being lost. Additionally, because it is not restricted to a formal trail, the public access may be inadvertently impacting sensitive wetlands and other plant and animal species present on the western parcel. Importantly, the property is currently for sale, therefore there is a risk of potential new development impacting the sensitive habitat on the site and closing off the public's use of the site.

[7] The subject Elk Creek Bridge Replacement Project, the Jack Peters Creek Bridge Improvement Project, and the Cleone Shoulders Project. The Jack Peters Creek Bridge Improvement Project is anticipated to be scheduled for a Commission hearing later this year, whereas the Cleone Shoulders Project is fully within Mendocino County's LCP jurisdiction and was approved in 2021. The Commission will consider whether the mitigation also provides adequate mitigation for the Jack Peters Creek Bridge Replacement Project through a separate permitting process.

Within Mendocino County's certified LCP, the parcel is zoned as "range land"; however, no agricultural uses are present, no agricultural uses are known to have been present in recent years, and both passive recreation and fish and wildlife habitat management are principally permitted uses under the LCP on parcels zoned "range land". Moreover, the proposed habitat enhancement and preservation in this case would not necessarily preclude future potential agricultural use. If properly managed, grazing of certain ESHA types can be beneficial to the habitat (e.g., for invasive species control), and the Commission has approved managed grazing in habitat conservation areas in the past. As discussed below, grazing would continue to be allowed on the mitigation parcel, consistent with certain requirements to protect ESHA and the underlying intent of the project as habitat mitigation.

Biological surveys of the LaBoube property occurred in May 2020, which found that the 12-acre LaBoube property includes high-quality habitat containing special status plant species and rare vegetation alliances, including wetlands, non-wetland waters, riparian, and upland ESHA resources, such as coastal terrace prairie, northern bishop pine forest, northern coastal scrub, and coastal bluff scrub. Some sensitive wildlife species have been noted as occurring or likely occurring on the property as well, including Sonoma tree vole, shoulderband snails, and cormorant species. Detailed descriptions of the habitat present onsite can be found in the draft HMMP (Exhibit 10).

On June 26, 2022, Caltrans submitted an updated draft HMMP, the primary goals of which are to enhance certain habitat areas on the western LaBoube parcel via invasive species removal and preserve sensitive aquatic and plant resources present on the entire 12-acre parcel by providing 100% of funds for the acquisition and transfer of the parcel and long-term funding (via an endowment) to Mendocino Land Trust (MLT), a local non-profit land trust, for management in perpetuity.

Caltrans has provided a signed Letter of Mutual Interest (Exhibit 11) from the heirs to the property for the sale of the LaBoube property to MLT using the funding provided by Caltrans for the proposed habitat mitigation purposes. Following approval of the final HMMP, Caltrans proposes to transfer 100% of the funds for the parcel acquisition to the State Coastal Conservancy who has agreed to then award the funds to MLT to purchase the property.

The Commission finds Caltrans's proposed mitigation package adequate to compensate for wetland impacts anticipated to result from the Elk Creek Bridge Replacement Project, because the LaBoube property is at risk of potential new development impacting the sensitive habitat on the site and closing off the public's use of the site and the value of preserving the riparian and upland ESHA habitats on this property is enhanced by the larger contiguous undeveloped area surrounding it. Preservation and incorporation of the habitats into a long-term management plan, executed primarily by MLT, will ensure that sensitive plant and animal communities relying on protection from external threats such as development, unauthorized encroachment, invasive species, etc. will be protected in perpetuity.

Although certain aspects of the mitigation package need to be finalized and certain additional approvals obtained, Caltrans has submitted various documents and information to demonstrate that this mitigation package can be feasibly carried out: (1) a draft HMMP that describes the full scope of the proposal, which the Executive Director will work with Caltrans to finalize prior to commencement of construction; (2) a Letter of Mutual Interest from the heirs to the property, stating they plan to sell the property to MLT for the mitigation purposes discussed herein; and (3) a funding assurance letter from, Caltrans confirming that sufficient funds have been set aside for purchase of the parcel. Further details on the offsite mitigation proposal are included in Exhibit 10.

Although the habitat present on the LaBoube property is generally in good condition, an invasive species survey completed in June 2020 for the western parcel shows some "Moderate" and "High" ranked species by the California Invasive Pest Council, and the eastern parcel has not been surveyed for invasive species. Species ranked as highly invasive by Cal-IPC are those that are known to have "severe ecological impacts on physical processes, plant and animal communities, and vegetation structure" and "Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment." Therefore, **Special Condition 9** requires Caltrans to submit a final revised HMMP that substantially conforms with the proposed HMMP but which adds provisions for (1) surveying the eastern parcel for invasive species and including plans to remove all invasive species rated "High" by Cal-IPC over the entire property, including maintenance and monitoring procedures and success criteria, and (2) ensuring Caltrans remains responsible for completing all initial efforts to mitigate for the impacts resulting from the bridge replacement project, at a minimum, before transitioning to the long-term management that MLT will carry out.

To provide protection of the habitat on the parcel in perpetuity, **Special Condition 11** requires the recordation of an open space deed restriction, which will allow for the protection and restoration of habitat and, to the extent not inconsistent with these purposes, for open space, passive recreational public access, environmental education and research, managed grazing activities, and development of a trail for nature study purposes.

As mentioned above, Caltrans also proposes to provide funding for an endowment to be used by MLT for the long-term management of the property to ensure the habitat remains in good condition in perpetuity. The details of the funding transfer and parcel management responsibilities will be formalized in a cooperative agreement or similar binding agreements between the involved parties, including Caltrans, MLT, SCC, and the National Fish and Wildlife Foundation, who will hold the endowment. **Special Condition 10** requires that the cooperative agreement contain the provisions described herein and that a copy be submitted for the Executive Director's review and approval prior to being finalized, and a signed copy prior to commencement of construction of any development, including major vegetation removal, for the Elk Creek Bridge Replacement Project.

Under the proposal, Caltrans will be directly responsible for the initial habitat enhancement activities and MLT will implement the long-term management plan approved in the final HMMP. The purpose of the long-term management of the LaBoube Parcels 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. As discussed in more detail below, MLT has expressed a desire to assume ownership of the LaBoube Parcels as it will offer the opportunity to preserve sensitive coastal resources and eventually to provide formal public access to nearby coastal areas via an extension of the California Coastal Trail (CCT) through the property.

Part of the maintenance activities that will be funded by Caltrans via the endowment include, but are not limited to, ensuring long-term maintenance/removal of invasive plant species on the western LaBoube parcel and continued protection of preserved resources. Additional uses of the endowment include future development of exclusionary fencing along the future CCT extension to protect adjacent habitat, interpretive signage, etc.

Although certain details of the long-term management plan will be determined through the finalization of the HMMP, the plan generally includes annual inspections and photo documentation by qualified MLT personnel, concentrating on an evaluation of the following: erosion, trash accumulation, invasive species, evidence of unauthorized use of the site, and/or vandalism that jeopardizes the preserved habitat. MLT would submit a written report to the interested agencies every five years, which would summarize all long-term maintenance efforts, along with any potential land management changes. These measures, along with the endowment funded by Caltrans, will ensure the habitat is protected in perpetuity.

While not necessarily applicable for evaluation of this proposal as habitat mitigation, MLT plans to connect the LaBoube Parcels to the Redwood Coast Land Conservancy-owned preserve immediately adjoining the southern edge of the western parcel via the California Coastal Trail (CCT) and will work with Caltrans to acquire easements to connect the trail further north to Schooner's Gulch State Park. Therefore, as an ancillary benefit to the habitat preservation and enhancement, acquisition and transference of this parcel is critical to supporting the creation of an approximately 1-mile CCT extension along the coast at this location, connecting with existing segments of the CCT on both ends. Access to and through the site would be secured in perpetuity, but also on a designated pathway, with signage, to reduce impacts to sensitive resources from informal public access on the parcel. While the proposed acquisition of this parcel is a critical step, the development of the CCT at this location would be authorized through a separate, future permitting process under Mendocino County's LCP. The SCC has indicated they hope to award additional funding to MLT to plan the trail extension when they grant the funding provided by Caltrans to MLT to purchase the property.

Caltrans has described in the draft HMMP how they have allocated credits in the form of acreage of habitat on the LaBoube property that would be preserved as a result of the

property acquisition to each of the three projects for which this mitigation package is proposed, in order to demonstrate that the proposal would be adequate mitigation for all of the anticipated habitat impacts of the three projects. It is noteworthy that this is a larger mitigation project compared with the scale of anticipated impacts at the Elk Creek Bridge, which is only possible because it is a combined mitigation package for these three separate highway projects.

While this mitigation package is proposed to compensate for anticipated habitat impacts for the subject Elk Creek Bridge Replacement Project, as well as the other two Caltrans projects previously mentioned, implementation of the proposed habitat enhancement activities on the LaBoube property is not being authorized under this CDP. As discussed above, the mitigation activities appear consistent with the "Range Land" zoning of the parcel, but the consistency of this mitigation project with the LCP would be fully evaluated through a separate Coastal Development Permitting process under Mendocino County's certified LCP. **Special Condition 9** requires, in part, that a copy of the approval, or evidence that a CDP is not needed, be submitted to the Executive Director, to ensure that the mitigation project is authorized and that any special conditions of the CDP issued by the County do not conflict with the intended mitigation purposes in the final HMMP.

In the unexpected event that Caltrans is not able to complete acquisition of this property, Caltrans, in consultation with Commission staff, have identified potential alternative mitigation projects, such as those listed in the feasibility matrix mentioned above and included in the draft HMMP (Exhibit 10). **Special Condition 9** provides that in the event the LaBoube property acquisition and implementation of the final HMMP is unsuccessful, Caltrans will submit a new or revised mitigation proposal with increased mitigation ratios to reflect any significant delays and will seek an amendment to this CDP to authorize the alternative mitigation, unless the Executive Director makes a determination that no such amendment is necessary because the change is de minimis.

In conclusion, the Commission finds that the proposed acquisition of the LaBoube property and enhancement and preservation of its habitat is feasible and sufficient off-site mitigation for the anticipated impacts to wetland habitat as a result of the proposed bridge replacement project.

Measures to Avoid Significant Adverse Impacts to Wildlife in Wetlands

Although there will be a temporary loss of coastal wetland habitat for certain wildlife in the project area during construction and in the time it takes for vegetation to fully reestablish in disturbed areas, as discussed above, Caltrans proposes to fully restore most of the impacted habitat, and there will only be a minor amount of permanent loss of coastal wetland habitat necessary for the project. Caltrans also proposes certain significant habitat enhancements at the project site, including removal of invasive plant species and permanent fill in the creek channel and replacement of unvegetated rock slope protection with a root wad revetment. However, depending on the manner in which the proposed project is undertaken, the proposed bridge replacement activities within wetland habitats at the project site could have significant adverse impacts on

wildlife, include special status amphibians and reptiles, nesting birds, and roosting bats. The potential impacts to and measures to protect these sensitive species are discussed in the following paragraphs.

Avoidance of Impacts to Special Status Frog Species

The California red-legged frog (Rana draytonii) (CRLF) is a federally threatened species that has the potential to occur within the project area. Although California red-legged frogs typically remain near streams or ponds, studies show they will disperse to moist upland sites when breeding is complete or when breeding pools dry out, therefore they may occur within the stream channel or on the banks of the creek within the surrounding riparian vegetation. Northern red-legged frog is a state species of special concern that is highly aquatic and prefers shorelines with extensive vegetation, such as the setting of Elk Creek. The Northwest/North Coast clade of the foothill yellow-legged frog is designated a California species of special concern and has the potential to occur within the project area as well, although habitat for foothill yellow-legged frog at the project site is low quality.

Focused surveys for sensitive frog species were not conducted for this project; however, multiple red-legged frog individuals have been observed in Elk Creek during recent Caltrans work within and just west of the project footprint. No foothill yellow-legged frogs were encountered. The closest California Natural Diversity Database (CNDDB) occurrences for foothill yellow-legged frog are 1.5 and 1.8 miles southeast of the project site in South Fork Elk Creek and 2.2 miles north within Greenwood Creek.

Bridge replacement activities could potentially result in the injury and/or mortality of sensitive frog species if individuals are present within the work area during any phase of proposed construction. However, prior to any work within coastal wetlands of Elk Creek, Caltrans proposes to prepare an aquatic species relocation plan as part of the Temporary Stream Diversion System Plan discussed below in Section E (Stream Diversion), which will include provisions for a pre-construction survey for special status frogs by a qualified biologist, relocation methods for frogs discovered during surveys as well as during construction activities, and monitoring and reporting requirements by a qualified biologist. The biologist will be present during all phases of construction activities with the potential to impact surface waters, to assist with frog relocation efforts as they arise. To ensure this plan is developed and implemented as proposed, the Commission attaches **Special Condition 13 (Temporary Stream Diversion System Plan),** which requires, in part, that the plan be submitted for the review and approval of the Executive Director.

Caltrans also proposes to install special exclusionary fencing to minimize the likelihood of frogs entering the work areas. Furthermore, to prevent adverse impacts such as desiccation from accidental entrapment of frogs during construction, Caltrans proposes that all excavated, steep-walled holes or trenches more than one foot deep shall be covered at the close of each working day by plywood or similar materials or, if that is infeasible, one or more escape ramps constructed of earthen fill or wooden planks shall

be installed. The Commission incorporates these additional measures to protect sensitive frogs into **Special Condition 2 (Construction Responsibilities)**.

Avoidance of Impacts to Western Pond Turtle

Western pond turtle (Actinemys marmorata) is a state species of special concern with the potential to occur within the project area. Caltrans did not conduct focused surveys for Western pond turtle for this project; however, no Western pond turtles have been observed by Caltrans during habitat assessments or previous work at the site. The nearest CNDDB occurrence is approximately 10 miles south of the BSA in the Garcia River Estuary.

Despite no known previous observations of the Western pond turtle at the project location, Elk Creek and the adjacent riparian areas represent suitable habitat for the species, which could be impacted by various project activities. Therefore, to minimize the potential for impacts, Caltrans proposes a preconstruction survey for WPT by a qualified biologist if work begins during the species critical egg laying period (March–August). If any Western pond turtle nests are observed in the project footprint, consultation with the Executive Director would occur and an appropriate course of action would be carried out with guidance from CDFW. To ensure this measure is implemented as proposed, the Commission attaches **Special Condition 6 (Protection of Western Pond Turtles)**. Biological monitoring and implementation of the aquatic species relocation plan that will be included as part of the Temporary Stream Diversion System Plan, discussed above, during construction will further ensure that potential impacts to Western pond turtle are minimized.

Avoidance of Impacts to Raptors and Other Nesting Birds

Various bird species have the potential to be present in the project area for foraging or nesting during proposed construction, including raptors such as the White-tailed kite, a state fully protected species. Focused surveys for nesting birds were conducted in April and June 2018, and while various nesting birds were observed, there were no observations of white-tailed kite. The closest CNDDB occurrence for the species is 6.7 miles northwest of the BSA, upslope of Big Salmon Creek.

Removal of riparian vegetation that may support bird nests could result in direct mortality of adults or young birds and the destruction or abandonment of active nests if conducted during the nesting bird season (generally February 1 to September 15). Indirect impacts such as increased noise and visual human activity associated with construction activities could result in the disturbance of normal nesting behaviors, reduction in prey availability, and degradation of overall nesting habitat. These disturbances could cause nest abandonment and death of young or loss of reproductive potential at active nests located in or near the study area.

However, potential adverse impacts to nesting birds as a result of the proposed coastal wetland dredging and filling activities are not anticipated because in addition to the general protective measures proposed and discussed above, Caltrans proposes to

avoid vegetation removal during the nesting season or to conduct surveys for nests if vegetation removal must occur during the nesting season and to establish appropriate buffers around each active nest.

To ensure that Caltrans undertakes development in compliance with the various proposed measures to protect raptors and other nesting birds, the Commission attaches **Special Condition 4 (Protection of ESHA for Raptors and Nesting Birds)**.

Avoidance of Impacts to Roosting Bats

The riparian habitat surrounding Elk Creek Bridge provides suitable roosting habitat for colonies of non-special-status bats as well as the Western red bat (Lasiurus blossevillii), a state species of special concern. The removal of riparian trees could result in the injury and mortality of sensitive bats if they are occupying these trees at the time of vegetation removal. Additionally, noise and activity from project construction activities could also result in auditory and visual disturbance, which could alter foraging and breeding behavior of any individuals near the project footprint.

No focused emergence surveys have been conducted to monitor or record bat use of the riparian habitat of the BSA, including for Western red bat, although the bridge structure has previously been surveyed, as will be discussed in Section G (ESHA), below. The nearest CNDDB record for Western red bat is approximately 52 miles northeast of the BSA. However, because bat species are hard to detect without proper equipment, occurrences of these animals are likely greatly underreported as compared to other sensitive animal species; therefore, where suitable habitat exists, these species should be presumed present.

In addition to the generally protective measures mentioned above, Caltrans proposes to conduct seasonally-appropriate emergence surveys of the riparian areas prior to vegetation removal. If any roosts are detected, Caltrans would postpone tree removal, implement buffers if appropriate, and implement a phased vegetation removal approach. The Commission attaches **Special Condition 5** (**Protection of ESHA for Roosting Bats)** to ensure these measures are implemented as proposed and modified herein. Additional measures to protect sensitive bats are discussed in Section G (ESHA) below.

Maintenance and Enhancement of Biological Productivity and Functional Capacity of Wetlands

Another general limitation set by section 30233(c) of the Coastal Act is that any proposed dredging or filling in existing coastal wetlands must maintain or enhance the functional capacity of the wetlands.

Vegetation removal, ground disturbance, and other dredging and filling activities within the wetland habitat on the banks of Elk Creek have the potential to increase turbidity, sedimentation, and temperatures and release certain pollutants, thereby adversely affecting water quality and impacting the functional capacity of the wetlands as a result. However, the various BMPs to protect water quality proposed by Caltrans as modified

and reimposed as special conditions of this CDP would minimize the magnitude and duration of these potential impacts during construction and would provide for site stabilization post construction. These measures are primarily discussed in Section F (Protection of Marine Resources and Water Quality), below. Following completion of construction, the stream bed and banks would be regraded to natural contours and all trash, debris, and other construction-related materials would be fully removed from the site. The anticipated permanent loss of riparian vegetation is minimal, and a majority of the disturbed areas would be restored to pre-project conditions, if not enhanced through the implementation of invasives species removal activities in the final approved Onsite Revegetation Plan discussed above. Overall, the avoidance, minimization, and mitigation measures incorporated into the project and required by the special conditions discussed herein will ensure that the project will not have significant adverse impacts on coastal wetland habitat in and around the project vicinity.

Additionally, as mentioned above, the project includes certain permanent enhancements to coastal wetlands. All of the existing unvegetated rock slope protection armoring the north bank of the creek would be removed and replaced with a vegetated root wad revetment, which would provide significantly more valuable fish and wetland habitat than the existing condition of the north bank. Additionally, the proposed replacement bridge would be a single-span structure with no piers in the stream channel, the existing pier walls and pier caps would be removed, and the bridge would be lengthened, resulting in an estimated 180 square foot increase of active channel habitat below the ordinary high water mark.

Therefore, the Commission finds that the project, as conditioned, will maintain and enhance the functional capacity of wetlands consistent with the requirements of Coastal Act section 30233(c).

Conclusion

For all of the reasons set forth above, the Commission finds that the project, as proposed and conditioned, is an allowable use, that there is no feasible less environmentally damaging alternative, that feasible mitigation will be provided to minimize all significant adverse impacts associated with the dredging and filling of coastal wetlands, that wetland habitat values will be maintained or enhanced, and that coastal water quality will be protected. Therefore, the Commission finds that the proposed development, as conditioned, is consistent with section 30233 of the Coastal Act.

E. Stream Alteration

Coastal Act Section 30236 states:

> *Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (1) necessary water supply projects, (2) flood control projects where no other method for protecting existing structures in the flood plain is feasible and where*

> *such protection is necessary for public safety or to protect existing development, or (3) developments where the primary function is the improvement of fish and wildlife habitat.*

The permanent construction of the root wad revetment structure along the north bank of the creek constitutes "substantial alteration" of the stream and must be found consistent with the provisions of section 30236. In addition, the necessary construction of a temporary work platform and associated temporary stream diversion and potential dewatering activities also constitute alteration of the stream and must be found consistent with 30236.

Root Wad Revetment

As noted in sections above, Caltrans proposes to remove the approximately 400 square feet of existing unvegetated large diameter rock slope protection ("RSP", also known as rip rap) along the northern creek bank and below the ordinary high-water mark (OHWM) installed as part of previous emergency scour countermeasures and to replace it with a root wad revetment. The root wad revetment will be constructed along approximately 160 linear feet of the north bank of Elk Creek at the bridge site using 10 to 12 conifer root wads with 10 to 20 feet of attached trunk that would project into the water column. The root wads will be secured with anchor stones and header and footer logs and backfilled with soil. The bank of the root wad revetment, with a 1.5:1 slope and a flat bench at approximately 12 feet in elevation, will tie into the downstream channel bank and extend upstream beyond the bridge. The upstream end of the revetment will conform to the existing floodplain. The revetment bench, which will vary in width between approximately 1.5 and 18 feet, will be constructed behind the root wads to function as an intermediate floodplain during flows around the bank-full stage. The root wad revetment's bank will be densely planted during construction with materials such as willow stakes, bundles, or fascines, and sod mats. Draft plans for the root wad revetment are included as Exhibit 8.

The primary function of the root wad revetment is to provide for the improvement of fish and wildlife habitat, while also providing bank stabilization and scour protection for the bridge. Caltrans proposed the removal of the existing unvegetated RSP and replacement with the root wad revetment as mitigation for anticipated direct and indirect impacts to special status fish and their habitats resulting from the temporary stream diversions, fish relocation efforts, and construction operations required to replace the Elk Creek Bridge.

Riparian vegetation and large woody debris, such as root wads, play important roles in stabilizing stream channels and creating and maintaining diverse high-quality habitats for salmonids and other fishes. Riparian vegetation directly influences the quality of fish habitat, affecting cover, food, habitat complexity, streambank stability, and water temperature. In general, root wads and large woody debris in streams can create hydraulic complexity, such as pools, undercut banks, and slow velocity edges that provide refuge, protection from predation, cover and food sources (e.g., algae, micro-invertebrates) for fish and other aquatic species. Additionally, in-stream large woody

debris structures may allow separation of territorial units to reduce density related competition. Replacing the existing unvegetated RSP with a vegetated root wad revetment which incorporates effective permanent erosion control measures (riparian planting per the Onsite Revegetation Plan) is also anticipated to result in decreased surface erosion and increased stream shading; resulting in long-term positive impacts in reducing water temperature and greatly increasing allochthonous inputs (leaf litter, insects, nutrients).

Given that the stream alteration that would result from the construction of the root wad revetment is a development intended for the improvement of fish and wildlife habitat, it is consistent with Section 30236(3). Section 30236 also requires that any such substantial alterations shall incorporate the best mitigation measures feasible. As previously discussed, various proposed construction related BMPs and mitigation measures are proposed and reinforced as special conditions to protect water quality, sensitive habitats, and wildlife during construction.

Caltrans is working with the resource agencies to finalize the details of the root wad revetment plans; therefore, **Special Condition 1 (Final Construction Plans)** requires submittal of the final plans to the Executive Director prior to commencement of construction. In addition, given the relatively new usage of a root wad revetment for fish habitat improvements and scour protection, there is some uncertainty in how the structure will perform over time. Caltrans has therefore proposed to prepare a Root Wad Revetment Monitoring Plan to monitor and ensure the success of the root wad revetment bank plantings and the general success of the root wad revetment as a structure. **Special Condition 12 (Root Wad Revetment Monitoring Plan)** requires submittal of the final Root Wad Revetment Monitoring Plan prior to commencement of construction for the review and approval of the Executive Director. The plan shall include final success criteria developed in consultation with CDFW and CCC staff that include, at a minimum, provisions for a minimum of five years of monitoring for (1) presence and distribution of fish species using the root wad structure, and (2) survival and cover of willows and other vegetation planted as part of the bio-engineered structure. The plan also is required to include provisions for submittal of as built plans (including provisions for verifying installation of vegetative plantings and removal of all of the existing large diameter RSP along the north bank), annual monitoring reports, and a final monitoring report. If the final monitoring report indicates that the root wad revetment structure has been unsuccessful, in part or in whole, based on the approved success criteria, Caltrans shall submit within 90 days a revised or supplemental plan for the review and approval of the Executive Director to compensate for those portions of the original program which did not meet the approved success criteria.

Temporary Work Platform, Stream Diversion, and Dewatering

Construction of the proposed project will require foot and equipment access within the stream channel and enough space for equipment and construction staff to work safely. To provide adequate space, Caltrans proposes that the contractor may elect to install an elevated work platform or a gravel pad system, which would be used to facilitate equipment access, expedite removal of the existing bridge, and construction of the new

bridge while also catching debris and protecting waters below. Construction of the temporary work platform and debris catchment system would require a temporary stream diversion to provide a dry work area.

The temporary work platform would be constructed in a way that protects the stream and allows it to flow freely through the work area. However, Caltrans has not selected a specific design for the stream diversion but instead has described a few possible alternatives that their contractor may choose between. Specifically, the contractor may elect to place K-rail or large concrete blocks to restrict the creek through the work area and may place fabric and temporary fill within the creek and use steel plates or small steel beams with timber decking to create a more effective work area and debris catchment below the existing bridge structure. Alternatively, a gravel pad with a culvert stream diversion could be placed across the creek and used as a work platform and debris catchment system.

The stream diversion in the first year of construction will likely span the entire channel width (an average of approximately 45 feet) and potentially extend from downstream of the proposed construction access point, below the bridge, and extend upstream under the temporary bridge for an estimated 120 linear feet of the channel length. A second season of work will be required to install the proposed root wad bank revetment, which will require access to the north bank of the creek for an estimated total of 120 linear feet again, starting 20 feet downstream of the new bridge structure and extending 80 feet upstream. However, since access is only needed on the north side of the creek bed in the second construction season, a series of water-bladders may be the appropriate diversion method for this season. As discussed below, the final diversion method will be determined prior to commencement of construction.

Installation of the temporary stream diversions is anticipated to result in seasonal disturbance to, and losses of, open water and benthic habitat, with an estimated footprint of 0.12 acre. However, as no permanent losses of aquatic habitat will occur, the temporary steam diversion and work platform or gravel pad will be removed between construction seasons and at the completion of construction, and the affected area will be contoured to pre-project conditions, these impacts are considered temporary and do not constitute “substantial alteration” of the stream; therefore, these temporary impacts are consistent with section 30236 of the Coastal Act.

Caltrans proposes to prepare and submit a Temporary Creek Diversion System Plan prior to any stream diversion or dewatering activities, which would include various specifications, including details of the layout and footprint of the stream diversion configurations to be used each construction season, how permeability for fish passage will be maintained, and methods for the relocation of sensitive aquatic species. The stream diversion and measures to minimize impacts to water quality and sensitive fish species is discussed in more detail in Section F (Protection of Marine Resources and Water Quality), below. To ensure the impacts of the temporary work platform, stream diversion, and potential dewatering are temporary and insubstantial as anticipated, the Commission attaches **Special Condition 13** which requires submittal of the Temporary

Creek Diversion System Plan for review and approval prior to commencement of construction.

The Commission thus finds, for the reasons discussed above, that the proposed substantial alterations of Elk Creek are for an allowable use (primary function is for improvement of fish and wildlife habitat), and the development as conditioned incorporates the best feasible mitigation measures feasible consistent with section 30236 of the Coastal Act.

F. Protection of Marine Resources and Water Quality

Section 30230 of the Coastal Act states as follows:

> *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes*.

Section 30231 of the Coastal Act states as follows:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

Section 30232 of the Coastal Act states as follows:

> *Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.*

The proposed project involves work within, over, and adjacent to a tidally influenced creek, thus construction-phase activities and post construction stormwater management have the potential to impact marine resources and the biological productivity and quality of coastal waters. Therefore, the Commission must find that the project is consistent with the provisions of sections 30230, 30231, and 30232.

Elk Creek is a perennial stream that originates in the Coastal Mountain Range of Mendocino County and flows in a northwest direction approximately 11 miles to the bridge location, draining 27 square miles. The bridge location is at an elevation of approximately 20 feet (NAVD88) and is located about 1800 feet from the Pacific Ocean. A large sand bar exists at the mouth of the creek, forming an estuary about 2000 feet in

length. As discussed above, the stream provides habitat to various sensitive fish species as well as certain aquatic species.

Proposed construction activities could have indirect, adverse impacts on marine resources and water quality in Elk Creek, including:

- Temporary increases in turbidity, suspended sediment, and contaminant risk during construction and demolition activities, including temporary dewatering and stream diversion.
- Ongoing water quality impacts as a result of contaminated runoff from the bridge and roadway approaches post construction.
- Potential injury and mortality of fish from exposure to various construction activities, including stream diversion and impact pile driving and impact hammer noise exceeding established thresholds for the onset of injury.

Avoidance of Construction-related Impacts to Water Quality

The primary potential water quality impacts from proposed construction activities fall under two general categories: (1) increased turbidity in coastal waters during installation and removal of the stream diversion, excavation around pier footings and abutments, and clearing and grubbing of vegetation on the banks of the creek, and (2) accidental spills or releases of pollutants and debris, such as concrete and equipment fluids, contaminated sediments, and other construction debris into creek waters.

The operation of heavy equipment, drilling rigs, cranes, and other construction equipment in or near the creek can result in accidental spills and leakage of fuel, lubricants, hydraulic fluids, and coolants. Other sources of contaminants include wet concrete, asphalt, and discharges from vehicle and concrete washout facilities, as well as mobilization or release of pollutants that occur at the bridge site, such as soil contaminated with aerially deposited lead and treated wood and lead paint debris from the existing bridge structure.

Caltrans proposes to implement various standard measures to minimize the magnitude and duration of any turbidity increases, provide for site stabilization and debris containment during and post construction, and ensure proper handling and storage of contaminants to avoid accidental spills or mobilization into coastal waters, including: frequent checks for equipment leaks; cleaning equipment before and after entering the project site to minimize the potential for spread of invasive species; fueling equipment away from the creek as feasible; perimeter erosion control BMPs such as fiber rolls; use of a geo-synthetic fabric barrier, such as a plastic, to prevent discharge into the creek; and use of a catchment system under the bridge during construction to prevent debris from falling into the creek. Based on the proposed timing of construction activities primarily outside of the rainy season and implementation of various standard BMPs, elevation of turbidity and sedimentation events associated with construction are

expected to be minor and transient in nature, and not lead to measurable impacts on sensitive fish or critical habitat.

Caltrans proposes and **Special Condition 15 (Stormwater Pollution Prevention Plan)** reinforces that a Stormwater Pollution Prevention Plan (SWPPP) be prepared prior to commencement of construction. The SWPPP shall demonstrate compliance with the proposed water quality protection BMPs listed in Exhibit 5. Special Condition 15 also requires that the SWPPP include: (a) a construction site map identifying the location of all temporary construction-phase BMPs; (b) a narrative description of the BMPs to be implemented; and (c) a schedule for the management of all BMPs.

Although erosion and sediment control products classified as temporary are designed to degrade with time, several temporary erosion and sediment control products with plastic netting are commonly left in place permanently. The length of time it takes for plastic netting to begin to degrade depends on the netting composition and the environmental conditions, but the netting can remain intact many years after installation. When plastic netting does eventually fall apart, plastic fragments may be blown or washed into waterways and the ocean, creating an entanglement and ingestion hazard for marine life. Plastic netting also has been found to entangle terrestrial wildlife, including reptiles, amphibians, birds, and small mammals. Therefore, the Commission attaches **Special Condition 2-H (Plastic Netting Prohibition)**, which prohibits the use of temporary erosion and sediment control products (such as fiber rolls, erosion control blankets, mulch control netting, and silt fences) that incorporate plastic netting (such as polypropylene, nylon, polyethylene, polyester, or other synthetic fibers).

Potential Turbidity Impacts from Stream Diversion

As described above, various construction activities within the creek channel and on its banks could result in disturbance of soil and creek bed sediments, potentially resulting in temporary increases in turbidity and suspended sediments in and downstream of the affected waters. However, in-water construction activities (e.g., installation and removal of K-rail system, any temporary cofferdams, water bladders, culverts, and temporary fill) may have the greatest potential for causing increases in turbidity.

Depending on the concentration and duration of exposure, suspended sediment can cause lethal, sublethal, and behavioral effects on fish. Increased sedimentation above natural levels can also result in modification of habitat such as filling of pools, filling of the interstitial spaces within the substrate, altering invertebrate communities (a primary food source for fish and other aquatic and terrestrial organisms), and adversely affecting the quality of spawning and rearing habitat. Fine sediment in suspension can also affect the availability of food in streams by reducing primary production; increases in turbidity have been shown to reduce light penetration in both lakes and streams, resulting in decreased primary production, decreased abundance of food organisms (secondary production), and decreased production and abundance of fish.

At the beginning of each in-water construction season, installation of the stream diversions could result in periodic increases in turbidity and suspended sediment in the

creek as the barriers (sheet piles, K-rails, or water bladder) and any fill (clean spawning size gravel) are placed in the creek. However, a slow, incremental process would be used to install the barriers and fill, resulting in only minor, localized disturbances of the bed and downstream water column at any given time. A similar process would be used to remove the gravel fill and barriers at the end of each in-water construction season. Brief periods of increased turbidity and suspended sediment are anticipated to occur during removal of the barriers and restoration of flow to the reactivated portion of the creek bed. Installation of temporary or new permanent piles and removal of existing bridge piles and piers would occur on land (above the OHWM) or within the confines of a temporary cofferdam.

As discussed in Section E (Stream Alteration), above, Caltrans proposes to develop a Temporary Stream Diversion Plan and **Special Condition 13 (Temporary Stream Diversion Plan)** requires that the plan include measures to minimize turbidity increases and procedures for monitoring water quality during stream diversion placement and removal as well as periodically while the diversion is in place. Therefore, the stream diversion as conditioned will not adversely impact water quality.

Pollutant and Debris Containment and Disposal

The proposed project involves ground disturbance, dewatering, pouring and curing concrete, paving, demolition/deconstruction of contaminated bridge materials, and the use of construction equipment that could result in debris or hazardous materials entering coastal waters and impacting sensitive aquatic species and their habitat. The project area also generally has the potential for hazardous materials in the form of lead-based paint (LBP) in utility openings or on steel portions of the bridge structure; treated wood waste (TWW) in metal beam guardrails to be removed and replaced; and aerially deposited lead (ADL) along the highway within the project area. Therefore, if not properly managed, construction activities could result in the release of hazardous materials into the creek and adverse effects on water quality and marine organisms.

Aerially deposited lead (ADL) can be found in the surface and near-surface soils along nearly all roadways due to the historical use of tetraethyl lead in motor vehicle fuels. Soil determined to contain lead concentrations exceeding stipulated thresholds must be managed under an agreement between Caltrans and the California Department of Toxic Substances Control (DTSC). Caltrans conducted a study of the unpaved shoulders of the project area and determined that ADL is present in the surface soils on the road shoulders north of the bridge; soils in that area qualify as regulated materials subject to special handling. Under the ADL agreement with DTSC, soil excavated from the surface to a depth of one foot can be reused within the Caltrans ROW, if covered with at least one foot of clean soil or pavement structure. If soil excavated from the top one foot would not be reused within the Caltrans right of way, then the excavated soil will be managed and disposed of as a California hazardous waste

In addition to ADL, Caltrans anticipates disposing of approximately 10,500 pounds of treated wood waste (TWW) during construction from the removal of existing guardrail. TWW comes from old wood that has been treated with chemical preservatives that help protect the wood from insect attack and fungal decay while it is being used. As with the

ADL soil, Caltrans follows regulations adopted by DTSC when managing TWW to prevent releases of hazardous chemical preservatives, scavenging, and harmful exposure to people, aquatic life, and animals. Therefore, potential impacts resulting from TWW would be reduced through implementation of Caltrans' standard BMPs, including specifications for handling, storing, transporting, and disposal.

Lead based paint (LBP) was identified on the existing structure within the painted bridge barriers. Standard measures are proposed to reduce the risk associated with these regulated materials as well. Demolition of a deteriorating LBP component will require waste characterization and appropriate disposal. Intact LBP on a component is currently accepted by most landfill facilities; however, contractors are responsible for segregating and characterizing waste streams before disposal.

During construction, hazardous materials (e.g., gas, oil, and solvents) will not be stored within the bed, bank, or channel of the creek, large equipment will be checked daily for leaks, and hazardous material clean-up kits will be onsite at all times. In addition, standard BMPs are proposed to be used during and after construction to minimize any potential water quality impacts associated with stormwater runoff and erosion, and all temporarily disturbed areas will be revegetated with native species, consistent with the Onsite Revegetation Plan required by Special Condition 8.

The SWPPP discussed above and required by Special Condition 15 will include details of the BMPs that will be used to properly handle, stockpile, and dispose of construction waste and debris generated by project construction to prevent the accidental release of pollutants. The plan would also include measures to report, contain, and mitigate for any accidental spills during construction. Further, the plan would identify a schedule for management of all of the construction-phase BMPs.

Special Condition 13 also requires that the proposed Temporary Stream Diversion Plan discuss methods for properly disposing of potentially contaminated waters pumped from the creek during stream diversion and dewatering activities.

In addition to hazardous waste, the project will generate non-hazardous waste and debris during bridge demolition and construction activities. For example, and as mentioned above in Section D (Wetlands), Caltrans anticipates disturbing approximately 2.45 acres of soil for the proposed project, with a total anticipated cut of 570 cubic yards and total anticipated fill of 690 cubic yards. Excavated material will either be used as needed backfill material during construction or hauled away to an authorized disposal site. Temporary storage of excavated material may also be necessary.

Although Caltrans has proposed to dispose of all trash and debris at an appropriately permitted upland disposal facility, they have not provided any specific details on debris disposal for the project, including the names of authorized disposal site(s) where materials may be lawfully disposed of and a schedule for when materials would be removed from the construction site, as this information normally is determined by the Caltrans contractor at the time of construction. Thus, to avoid potential adverse impacts to coastal waters and marine resources from unlawful disposal and discharges of

debris, **Special Condition 16 (Debris Disposal Plan)** requires submittal of a plan for the review and approval of the Executive Director prior to the commencement of construction for the disposal of excess construction debris and hazardous materials. The plan must list the names of all authorized disposal site(s) where materials will be lawfully disposed of and that describes the manner and schedule by which the materials will be removed from the construction site and transported for disposal.

Post-Construction Stormwater Management

As discussed above, permanent erosion control features will be incorporated in the project, including erosion control fabric or netting and hydroseeding to stabilize newly graded slopes and revegetation of temporarily disturbed areas. However, stormwater runoff from the highway could lead to water quality impacts overtime if not filtered or otherwise treated before reaching Elk Creek. Contaminants generated by traffic due to wear of tires, brakes, and pavement, as well as exhaust emissions and fluid leaks deposited on impervious roadway surfaces, may be carried by stormwater runoff into the creek, resulting in chronic to acute effects on marine and aquatic organisms depending on the concentration and duration of contaminant inputs.

The project will result in an increase of approximately 0.248 acre of impervious surfaces. This increase in impervious road surface area means less infiltration of water in areas adjacent to the roadway and more accumulated runoff, thereby leading to a slight increase in accumulated pollutants during precipitation events.

Caltrans proposes certain modifications to the existing drainage system features at the project site. The majority of existing roadside ditches would be filled and then reconstructed onsite to maintain existing water collection from vegetated hillside and recreate similar flow patterns. One roadside ditch that qualifies as a wetland will be permanently filled as discussed above, in Section D (Wetlands); however, a new wetland will be created adjacent to the filled wetland. The existing bridge has scuppers, which allows the bridge to drain directly to the creek. The proposed project would improve upon this as the new bridge would not have scuppers, and stormwater would flow off of the bridge and be discharged on the southwest side of the bridge.

An estimated 38% of stormwater runoff within the project area would discharge onto native riparian soils with low gradient slopes (< 2%); runoff from this area would need to travel through the riparian zone for approximately 50-75 feet before reaching the top of bank elevation. An additional estimated 29% of stormwater runoff would be conveyed through a drainage system at the northwest end of the bridge; runoff associated with this system would be directed over native soils of variable slope for approximately 75 feet to top of bank, and a total distance of greater than 100 feet before reaching OHWM of Elk Creek. All native soil areas would be de-compacted after construction and planted with native riparian vegetation in accordance with the final Onsite Revegetation Plan, discussed above in Section D (Wetlands); 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, estimated at 33% within the project area, would be runoff from the southern portion of the project area. In order to reduce the potential for direct discharge of stormwater from this area to Elk Creek, several improvements over existing conditions would be implemented. Approximately 160 feet of existing roadside dike would be removed, which 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 at one location, the proposed overside drain (OSD) that would be located here. An infiltration ditch would be placed at the outlet of the proposed OSD to allow the remaining 23% of stormwater to infiltrate into the road shoulder rather than discharge directly to Elk Creek.

Caltrans has not yet received project approval from the North Coast Regional Water Quality Control Board for its proposed drainage plans, and the NCRWQCB may require certain additional improvements or modifications to Caltrans' proposed drainage plans. The Commission therefore attaches **Special Condition 1 (Final Construction Plans)**, which requires, in part, submittal of final stormwater drainage plans that conform with the standards and requirements of the NCRWQCB for water quality protection. Any project modifications required by the regional water board must not be incorporated into the project unless the applicant obtains an amendment to this CDP.

Avoidance of Impacts to Sensitive Fish Species (Protection of Marine Organisms)

As described above, Elk Creek supports several species of special status fish, including Northern California (NC) steelhead, Central California Coast (CCC) coho salmon, Pacific lamprey, and possibly tidewater goby. The proposed project is not expected to generate ongoing impacts to sensitive fish species; however, the project does have the potential to impact sensitive fish species during construction activities as a result of increases in turbidity and sedimentation; direct injury associated with stream diversion activities including capture and relocation of fish; pile driving and demolition noise; and habitat impacts, including temporary loss of creek habitat, including riparian vegetation shaded riverine aquatic cover. Caltrans concluded in their adopted Initial Study with Mitigated Negative Declaration/Environmental Assessment with Finding of No Significant Impact that the proposed project, as a whole, would not negatively impact the long-term viability of Elk Creek populations of listed salmonids; however, Caltrans reached a determination of "may affect, likely to adversely affect" for both NC steelhead and CCC coho salmon.

In addition to the various general BMPs and AMMs to protect water quality and marine resources as well as the surrounding habitat and other sensitive species in the project area discussed in various sections above, to protect the most vulnerable life stages of sensitive fish species that occur within the project area, Caltrans proposes to restrict work that has the potential to directly impact surface waters to the period between June 15 and October 15, which correlates to the period of the year when juvenile salmonid abundance is at its lowest. Specifically, construction activities restricted to this period would include any work below the Ordinary High Water Mark (OHWM) of the creek, particularly construction of the temporary water diversion and construction access points, installation of the debris containment systems, demolition of the existing bridge,

and construction of bridge falsework and new abutments. Additionally, construction activities occurring above the OHWM, but with the potential to produce significant sources of sound waves in adjacent waters such as pile driving for bridge construction or hydraulic hoe-rams for bridge demolition, would also be restricted to the period between June 15 and October 15.

To ensure this seasonal work window is followed as proposed, the Commission includes **Special Condition 2 (Construction Responsibilities).**

More specific potential impacts to sensitive fish species and measures to mitigate them are discussed in the following paragraphs.

Stream Diversion and Dewatering

As discussed in Section E (Stream Alteration), several options may be used to direct the creek flow and dewater the work area including culverts, K-rail, concrete blocks or cofferdams, and water-bladders. In addition, dewatering may be required to remove the existing pier foundations using a cofferdam consisting of vibrated and driven sheet piles. The proposed stream diversions and dewatering could potentially affect fish passage, depending on the methods used to direct flow through or around the construction site. The specific method and type of stream diversion used would likely change between the first and second in-stream work seasons and would be reviewed and approved by the Executive Director via the submittal of the Temporary Stream Diversion Plan proposed by Caltrans and reinforced with Special Condition 13.

Under existing summer conditions, much of the creek bed that would be occupied by these temporary features is characterized by run and riffle habitats in months when the sandbar is open, and shallow and deep pools in years of low flow when the sandbar closes. Although the temporary loss of this area would have temporary effects on rearing habitat availability and food production, they constitute a very small fraction of the total amount of living space and creek bed area in Elk Creek and would be of relatively short duration. Therefore, these losses are not likely to have measurable effects on the overall quantity or quality of rearing habitat available in lower Elk Creek, and no permanent losses of aquatic habitat would occur. Following construction, the temporary steam diversion and work platform or gravel pad would be removed, and the affected area would be contoured to pre-project conditions. Furthermore, as mentioned above, a significant benefit of the project is the removal of the old bridge would result in a net increase of approximately 0.003 acre of aquatic habitat because the new bridge would completely span the Elk Creek channel and the existing piers would be removed.

As discussed in the portion of Section E (Wetlands) above regarding protection of sensitive frogs, as part of the Temporary Stream Diversion System Plan required by Special Condition 13, Caltrans proposes to prepare and implement a plan for the relocation of aquatic species, which will include fish guiding, capture, and relocation measures to minimize potential direct injury and stranding of fish associated with the temporary stream diversion and dewatering during construction. Fish capture and

relocation will be required for any fish that remain in the area of work proposed for dewatering following fish guiding activities.

Despite adherence to standard measures developed to reduce potential harm and diligent efforts by qualified biologists, some amount of injury to fish during installation of diversions, dewatering, and fish relocation is anticipated. Caltrans estimates that dewatering and relocation activities could potentially result in mortality of up to 6 juvenile coho over a period of two consecutive construction seasons. CDFW requires full mitigation for incidental take of state-listed species as part of an Incidental Take Permit or Consistency Determination on a federal Biological Opinion pursuant to CESA. Therefore, although Caltrans has not yet received its project approval from CDFW, as mitigation for incidental take of CCC coho salmon, Caltrans is proposing the removal of all of the existing rock slope protection along north bank of the creek and replacement with the root wad revetment discussed above, which is intended to provide salmonid habitat within the creek. The benefits of the proposed root wad revetment for salmonids are discussed more below.

Noise Impacts on Sensitive Fish

Among the construction activities likely to generate noise, the use of impact hammers for pile installation or demolition poses the greatest risk to fish because the levels of underwater noise produced by impulsive types of sounds can reach levels of sufficient intensity to injure or kill fish. Factors that may influence the potential for injury include species, life stage, and size of fish; type and size of pile and hammer; frequency and duration of pile driving; site characteristics (e.g., water depth); and distance of fish from the source.

The primary source of potential noise impacts from the project to sensitive fish would be driving the twenty-eight 10-inch steel H-piles for the temporary construction falsework, the sixteen 14-inch steel H-piles for the temporary bridge abutments, and thirty-six 14-inch steel H-piles for the permanent bridge abutments with an impact hammer. These activities are expected to produce sound levels that could exceed the currently established injury thresholds for fish. In addition, demolition of the existing bridge piers and abutments with an excavator-mounted hydraulic hammer (hoe-ram) could potentially generate underwater noise levels of sufficient intensity to cause injury or mortality of fish.

Dual interim criteria representing the acoustic thresholds associated with the onset of physiological effects in fish have been established to provide guidance for assessing the potential for injury resulting from pile driving noise. Pile driving with an impact hammer generates hydroacoustic pressure impulses and particle velocities that can cause effects on fish ranging from altered behavior, hearing loss, and tissue injuries, to immediate mortality. These underwater sound impacts can be measured by “Peak Sound Pressure Level (SPL),” the maximum value of an instantaneous sound pressure, such as noise generated by a single strike on a pile by a pile driver, and “Cumulative Sound Exposure Level (SEL),” the summation of the sound energy associated with all pile strikes that occur over a given time period”. These criteria have

been established for impact pile driving only. Other pile driving methods, such as vibratory, oscillatory, and drilling methods, generally produce more continuous, lower energy sounds below the thresholds associated with injury.

As described above, all in-channel work will occur after the stream is diverted and the work areas dewatered; therefore, all pile driving and hoe ram operations would be conducted when the stream diversion is in place and therefore when the water channel is removed some distance from the noise source. Although not anticipated, if in-water pile driving is deemed necessary, Caltrans would require the contractor first dewater the area 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. Types of sound attenuation system include, but are not limited to confined bubble curtain, unconfined bubble curtain, and isolation casings.

Underwater noise produced by impact pile driving and demolition activities are expected to periodically reach levels that exceed the injury thresholds for fish in Elk Creek. Based on measured noise levels for similar types of pile driving and demolition activities and worst-case assumptions regarding the use of impact driving and a standard sound attenuation rate, the potential for injury would occur over an estimated 10 days during impact pile driving and 6 days during demolition activities.

As most pile driving and all demolition activities that could result in injury would occur during the proposed in-water construction season of each year (June 15 to October 15), these activities would avoid the most sensitive juvenile life stages and the primary migration periods of adult and juvenile steelhead in Elk Creek. Although juvenile steelhead may be present after June 15 and possibly subject to potential injury from pile driving and demolition noise during the summer construction season, potential effects would primarily be limited to the small proportions of juveniles that rear in the BSA through the summer. The only anticipated exception would be during spring of the first construction season when piles for the temporary bridge abutments are proposed to be installed in May, when a greater number of juvenile salmonids may be migrating downstream and through the project BSA. In addition, small numbers of juvenile salmonids in areas adjacent to the work site may leave protective cover in response to general construction noise and visual disturbances, potentially resulting in an increased risk of predation. Even though the average source levels for a hoe ram are low, as compared to pile driving, there is a potential to exceed the daily cumulative SEL criteria due to the large number of blows.

Even with the proposed seasonal work window and stream diversion/dewatering, the potential exists for sensitive fish species in Elk Creek to be injured or killed by exposure to underwater noise and vibratory forces generated by construction-related pile driving and hoe ram (i.e., impact hammer) activity if unabated. In addition to the proposed seasonal work window, Caltrans would minimize the potential for adverse effects by limiting impact driving to daylight hours only (avoiding peak migration periods at night) and providing a minimum of 12 hours cessation of impact driving to permit recovery of any fish that remain within the affected areas for more than one day.

Caltrans proposes to prepare a Hydroacoustic Monitoring Plan prior to construction, which would be implemented during all construction activities that could potentially produce impulsive sound waves in Elk Creek (e.g., demolition of the existing bridge and installation of piles) to ensure noise thresholds would not be exceeded, and to provide opportunities to adopt alternative construction methods to avoid or minimize project impacts where feasible. Pile driving activities may cease for the day if the SELcumulative approaches the specified threshold. Furthermore, as described above, stream diversion and fish relocation protocols would be carefully employed to reduce potential for injury or stranding to all aquatic species.

To ensure that the least impactful feasible method of pile driving is used and the hydroacoustic monitoring plan is prepared and implemented with all of the proposed measures to protect sensitive fish species described above and included in Exhibit 5, at a minimum, the Commission attaches **Special Condition 14 (Pile Driving Limitations and Hydroacoustic Monitoring)**. The special condition requires Caltrans to submit the plan prior to commencement of construction for the Executive Director's review and approval, including provisions for submitting hydroacoustic monitoring reports.

Conclusion

For all the reasons discussed above, the Commission finds that the development, as conditioned, will maintain marine resources and the biological productivity and quality of coastal waters consistent with Coastal Act sections 30230, 30231, and 30232.

G. Environmentally Sensitive Habitat Areas

Section 30240 of the Coastal Act states as follows:

> (*a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.*
>
> *(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas and shall be compatible with the continuance of those habitat and recreation areas.*

The Coastal Act defines environmentally sensitive habitat areas (ESHAs) as areas in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments (Section 30107.5).

In addition, though not the standard of review, Chapter 3 of the Mendocino County certified Land Use Plan lists the following (in part) as types of ESHA in the County:

> *In Mendocino County, environmentally sensitive habitat areas include: anadromous fish streams, sand dunes, rookeries and marine mammal haulout*

> *areas, wetlands, riparian areas, pygmy vegetation containing species of rare or endangered plants, and habitats of rare and endangered plants and animals…*

Caltrans searched online databases and literature, consulted with resource agency personal and species experts, and conducted field surveys to identify existing habitat types, rare species, and factors indicating the potential for rare species (i.e., presence of suitable habitat) within the project footprint and within a 100-foot buffer around the entire project footprint (i.e., the Biological Study Area or BSA). The surveys found that construction of the proposed project will have temporary and permanent impacts to riparian vegetation, wetland ditches, and the Elk Creek aquatic environment, and could also potentially impact roosting bat and nesting bird ESHA on the bridge structure itself as well as in the surrounding vegetative environment. There also is the potential for rare plants to be present in the area, and areas where rare plants occur may qualify as ESHA. The Commission's ecologist has reviewed the various biological studies and ESHA reports and agrees that these areas with riparian vegetation, nests and roosts for sensitive birds and bats (as well as maternal roosts of non-sensitive bats), and rare plant habitat areas meet the definition of ESHA under the Coastal Act.

Riparian ESHA

Riparian habitat within the project area qualifies as environmentally sensitive habitat areas because the area is especially valuable due to its role in the ecosystem of providing essential habitat for a diverse assemblage of sensitive species. Since these areas constitute ESHA, the proposed project conflicts with the portion of section 30240(a) of the Coastal Act that states that "only uses dependent on those resources shall be allowed within those areas" and would likely result in significant disruptions of ESHA habitat values.

However, section 30233 allows for dredging and fill of wetlands despite impacts to ESHA, subject to certain criteria and importantly including that such projects incorporate feasible mitigation measures. As stated in *Bolsa Chica Land Trust v. Superior Court*,

> ...the ESHA protections provided by section 30240 are more general provisions and the wetland protections provided by section 30233 are more specific and controlling when a wetland area is also an ESHA.... Section 30240, a more general policy, also applies, but the more specific language in the former sections is controlling where conflicts exist with general provisions of Section 30240.

((1999) 71 Cal.App4th 493, 515.) As such, the aspects of the proposed project which result in or are related to the dredging and fill of wetlands that are also considered ESHA may be allowed under section 30233 if all requirements of that section are met.

As discussed in Section D (Wetlands), the project as conditioned is consistent with the use limitations and requirements of section 30233. Although the project does not comply with section 30240(a) of the Coastal Act, the project as conditioned is consistent with section 30240(b) of the Act because it will avoid and mitigate potential impacts to adjacent ESHA in several ways. First, **Special Condition 8** requires submittal of a final

Onsite Revegetation Plan that, among other requirements, will require the removal of invasive species to verify the success of the onsite habitat restoration to prevent impacts to significantly degrade adjacent ESHA and to restore riparian areas disturbed by project construction. Second, **Special Condition 2** requires flagging of sensitive areas prior to commencement of development to avoid construction encroachment into surrounding sensitive habitats. Third, Special Condition 2 also includes various requirements for water quality protection, spill prevention, and to control the spread of invasive species. And finally, **Special Conditions 9-11** requires development and implementation of a final offsite Habitat Mitigation and Monitoring Plan to adequately offset the project's riparian and wetland impacts. Therefore, the Commission finds that although the project is not fully consistent with section 30240 of the Coastal Act, it may be approved because it meets all of the requirements of section 30233 of the Act authorizing dredging and filling of wetlands.

Roosting Bat ESHA

Colonies of roosting non-special-status bats as well as the Western red bat (Lasiurus blossevillii), a California species of special concern, have the potential to occur on and within the existing Elk Creek Bridge structure, as well as in riparian trees and snags within the project area as discussed in Section D (Wetlands). Bats use bridge cavities for roosting during the day and for bearing and rearing young (i.e., maternal roost) typically from May through August. They may also use bridges in winter as hibernacula. At night, bats often roost in the open on the concrete undersides of bridges.

In recent surveys of the bridge structure, a single bat has been observed day roosting on the underside of the bridge and small amounts of bat guano and staining have been observed below the expansion joints of the bridge and under the southern abutment, indicating that the bridge is also used for night-roosting bats. The nearest CNDDB record for the Western red bat is approximately 52 miles northeast of the BSA. However, because bat species are hard to detect without proper equipment, occurrences of these animals are likely greatly underreported as compared to other sensitive animal species; therefore, where suitable habitat exists, these species should be presumed present. Still, the existing Elk Creek Bridge structure currently provides only minimal day roosting habitat and no colonies of day roosting bats have been observed using the structure. Similarly, evidence of night roosting in summer months is observed under the bridge in several locations, but guano and staining observed indicates only a relatively small number of bats use this bridge at any given time. The loss of night roosting habitat would be temporary as the new concrete bridge would be expected to provide similar habitat.

Construction activities, such as bridge demolition and construction noise and vibrations could result in direct effects on roosting bats, including the disruption of normal behaviors, destruction of active roosts, the loss of individuals, or roost failure if maternal bat colonies occur within the project area. Although common bats do not have special-status, the loss of known roosting habitat, especially a bridge, could affect local populations, and there is the potential for the Western red bat to occur within the project area as well. Roosting bats are most vulnerable during the summer maternity season

(May through July) when holes and crevices may be used as maternal colonies for rearing young; whereas, during the winter months most of these species roost individually or in small numbers.

Caltrans therefore proposes a number of minimization and avoidance measures. (Exhibit 5). These measures include to conduct pre-construction surveys prior to vegetation removal. If any roosts are detected, Caltrans would postpone tree removal, possibly implement buffers if appropriate, and implement a phased vegetation removal approach. Caltrans also proposes to prepare a Bat Exclusion Plan that includes provisions for installing exclusion devices prior to construction designed not to trap or entangle bats but to exclude them from the work area. Exclusion devices would be installed at the direction of a qualified biologist after the maternity season and before hibernation (generally Sept 16 – Nov 15) in the year prior to construction. Caltrans also proposes to seal cracks once the bridge is determined unoccupied to prevent reentry of crevices by bats prior to construction.

To ensure the development would avoid any potential bat roosting ESHA, the Commission attaches **Special Condition 5 (Protection of Roosting Bat ESHA)**, which requires pre-construction surveys, submittal of survey results, and submittal for Executive Director review and approval a Bat Exclusion Plan to ensure that Caltrans' proposed bat exclusion measures occur outside of the bat maternity season to prevent seasonal nesting habitat from becoming established during the construction period.

Therefore, the Commission finds that the proposed project, as conditioned, will protect roosting bat ESHA from significant disruption of habitat values consistent with section 30240.

Nesting Bird ESHA

As discussed in Section D (Wetlands), various bird species have the potential to be present in the project area for foraging or nesting during proposed construction, including raptors such as the White-tailed kite. Birds also have the potential to nest on the underside of the Elk Creek Bridge structure, as was observed in surveys for nesting birds conducted for the proposed project in 2018.

Removal of vegetation that may support ESHA nesting habitat for special status bird species could result in direct mortality of adults or young birds and the destruction or abandonment of active nests if conducted during the nesting bird season (generally February 1 to September 15). In addition, elevated noise from construction during the nesting season could interfere with avian mating and territorial defense calls, possibly inhibiting or delaying breeding. Construction noise and activities and human presence could result in nest abandonment or neglect or could disrupt foraging activity, reducing reproductive success. Proposed pile driving and hoe ram activity at Elk Creek Bridge would produce airborne noise above ambient noise levels, and this elevated noise has the potential to lead to temporary hearing loss. Additionally, pile driving and hoe

ramming would occur between June 15 and October 15, during the majority of the bird breeding season.

As previously discussed, the project is not expected to significantly disrupt ESHA nesting bird habitat because Caltrans proposes a number of minimization and avoidance measures (see Exhibit 5) including avoiding vegetation removal during the nesting season, conducting surveys for nests if vegetation removal must occur during the nesting season, and establishing appropriate buffers around each active nest. In addition, Caltrans proposes to develop and implement a Bird Exclusion Plan to prevent birds from creating nests within the project area during construction activities. The 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 and would be installed outside of the breeding season (September 16 through January 31) to eliminate the re-occupancy of existing structures by bird species that may attempt to nest on the structure during construction. To ensure these measures are implemented as proposed, the Commission attaches **Special Condition 4 (Protection of ESHA for Raptors and Nesting Birds)**. With the inclusion of this special condition, the Commission finds that the proposed project, as conditioned, will protect sensitive nesting bird ESHA from significant disruption of habitat values consistent with section 30240.

Rare Plant ESHA

Seasonally appropriate botanical surveys were conducted in 2018 to document probable absence or presence of sensitive plant species within the project footprint as well as a 100-foot area around the project footprint. No federal/state-listed or otherwise special-status plants have been documented within the project area; however, potentially suitable habitat is present for the state endangered Humboldt County milk-vetch (Astragalus agnicidus) and the state-listed threatened North Coast semaphore grass (Pleuropogon hooverianus). No Humboldt County milk-vetch or North Coast semaphore grass plants or any other special-status plants were observed during the field surveys, and no occurrences of special-status plants have been previously reported within the BSA. Therefore, Caltrans determined that construction of the proposed project would have no impact on this sensitive species and did not propose any additional surveying or other specific avoidance or minimization measures.

However, Caltrans has not completed updated surveys for Humboldt County milk-vetch or other rare plants in 4 years, and due to the proximity of the endangered species to the project site there is a still the potential for special status plant species to occur within the project area. (The nearest documented milk-vetch population is in the Elk Creek watershed 3 miles to the southeast.) Therefore, the Commission attaches **Special Condition 3 (Protection of Rare Plant ESHA)**, which requires Caltrans to complete updated rare plant surveys prior to commencement of construction (including removal of herbaceous vegetation or clearing and grubbing work), to confirm absence of both milk-vetch and semaphore grass (and other rare plant species) in the project area. Any populations of rare plants that are detected shall be mapped and flagged for avoidance. If it not possible to avoid rare plants that are detected within the project footprint,

Caltrans shall submit in the survey evidence the rare plant areas do not constitute ESHA, or if the Commission's Executive Director determines the rare plant areas are ESHA, Caltrans must obtain a Commission amendment to this CDP to propose changes to the project that could be implemented to avoid rare plant impacts, or to authorize a the development in ESHA that would be involved with the necessary salvage and removal of rare plants from the construction impact zone, unless the Executive Director determined no CDP amendment is legally required. The CDP amendment also would establish appropriate mitigation for any rare plant ESHA impacts that may be approved under the CDP amendment.

With the inclusion of this special condition, the Commission finds that the proposed project, as conditioned, will protect rare plant ESHA from significant disruption of habitat values consistent with section 30240.

Wildlife Passage/Connectivity

While no natural landscape blocks or essential connectivity areas were identified by the California Essential Habitat Connectivity project[8] in or adjacent to the project site, the habitat within the project footprint and in the broader Elk Creek watershed provide corridors for terrestrial wildlife movement. However, the steep topography within the project site, in combination with the presence of the highway and Elk Creek itself, may reduce suitability for movement through the site by many terrestrial wildlife species. Elk Creek itself provides a suitable movement corridor for amphibians and fish species (anadromous salmonids). The proposed project would remove the existing in-channel piers, the new bridge would be longer, and the existing unvegetated rock slope protection (RSP) on the northern creek bank would be removed. This RSP currently presents a potential barrier for movement of mammals, particularly for ungulates such as deer or elk. These various beneficial aspects of the project will provide more space for wildlife to cross below Elk Creek Bridge at low flows by using the dry gravel bed or the restored natural bank, rather than being forced to cross on the roadway and risking collision with vehicles.

Night work

Night work is not anticipated; however night work may occasionally be necessary and project impacts to sensitive species within ESHA could occur as the result. However, Caltrans proposes, and Special Condition 2-M reinforces, measures to minimize the potential impacts to ESHA and sensitive species within these areas, such as by

[8] The California Essential Habitat Connectivity Project (CEHC) was commissioned by Caltrans and the CDFW to identify and describe wildlife movement corridors in California (Spencer et al., 2010) with the goal of integrating natural resource considerations into transportation and land use planning processes. Essential connectivity areas and natural landscape blocks consist of large parcels of intact habitat or natural landscape that support native biodiversity and areas essential for ecological connectivity between them. Additionally, the CEHC models links between the essential connectivity areas that are important for use as wildlife corridors.

directing light downward and away from the channel, focused specifically on the portion of the project area actively under construction.

Conclusion

The AMMs and BMPs (Exhibit 5) proposed by Caltrans, all of which are required by special conditions of this CDP will protect ESHA, prevent impacts that would significantly degrade adjacent ESHA around the project site, and ensure the development is compatible with the continuance of the various types of ESHA. Therefore, for the reasons discussed above, the Commission finds that the proposed project as conditioned is consistent with section 30240 of the Coastal Act.

H. Hazards

Section 30253 of the Coastal Act states, in applicable part, as follows:

> *New development shall do all of the following:*
>
> *a. Minimize risks to life and property in areas of high geologic, flood, and fire hazard.*
>
> *b. Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs …*

Section 30270 of the Coastal Act states as follows:

> *The commission shall take into account the effects of sea level rise in coastal resources planning and management policies and activities in order to identify, assess, and, to the extent feasible, avoid and mitigate the adverse effects of sea level rise.*

In addition, Coastal Act section 30421 more broadly requires state and regional agencies, including the Coastal Commission and Caltrans, to "identify, assess, and, to the extent feasible and consistent with their statutory authorities, avoid, minimize, and mitigate the impacts of sea level rise."

The proposed project entails development of important and necessary infrastructure in an area subject to high geologic and flood hazards, including strong earthquake shaking and tsunami forces. As discussed in the following paragraphs Caltrans has designed the proposed bridge consistent with state and federal standards to ensure stability and structural integrity for a 75-year design life.

Seismic Hazards

Seismic hazards that could affect the bridge include surface fault rupture, seismic ground shaking, and seismically induced landslide, liquefaction, and related types of

ground failure events, such as differential settlement and lateral spread. Preliminary information regarding site characteristics was obtained by Caltrans from published geologic maps, previous geotechnical investigations, and subsurface exploration performed at the site.

The project area lies within the Coast Ranges Geomorphic Province, which is characterized by northwest trending mountain ranges controlled by movement along a system of similarly trending faults. Therefore, the project site is located in a seismically active region in which large earthquakes may be expected to occur during the life span of the structure. The seismicity of the area is dominated by the presence of the San Andreas Fault system, which forms the boundary between the Pacific and North American plates. Elk Creek is a meandering, alluvial, incised channel with moderate slope and velocity. The average depth of the creek is approximately 8 to 10 feet, and the project site elevation range is approximately 5 feet in the creek bed and from 17 to 20 feet[9] on either side of the creek. The project area is underlain by recent alluvium (stream deposits), which overlie undivided Cretaceous marine rocks (Franciscan Coastal Belt). The stream deposits consist of materials deposited by Elk Creek and consist of gravel, sand, silt, and clay. The Franciscan Coastal Belt rocks are represented at the project site by sheared shale and sandstone rocks.

The bridge structure is not located within or 1000 feet from any major earthquake fault zone and there is no risk for surface fault rupture. However, unlike surface rupture, ground shaking is not confined to the trace of a fault, but rather propagates into the surrounding areas during an earthquake. The intensity of ground shaking typically diminishes with distance from the fault, but ground shaking may be locally amplified and/or prolonged by some types of substrate materials. The project area is prone to strong ground shaking due to its proximity (3 miles) to the San Andreas Fault, which could cause damage to the bridge.

In designing this replacement bridge, Caltrans used its Seismic Design Criteria consistent with its Highway Design Manual standards to guide the design of the structural project components to withstand seismic hazards, including ground-shaking and liquefaction. Under the current Highway Design Manual standards, Caltrans designed the proposed bridge to avoid collapse due to ground-shaking during a 975-year Average Return Period (ARP) earthquake event (as well as a 975-year ARP tsunami event, as discussed below). A “975-year ARP” event has a 5% probability of occurring within a 50-year time period. This approach is intended to ensure minimal probability of collapse during an extreme event, and to ensure that any damage is minimal, evidently visible, and repairable. Thus, the project design minimizes the seismic risks associated with an extreme seismic event. However, larger earthquake events are possible and could result in damage to the bridge and service disruptions. Therefore, additional measures needed to safeguard the function of this important transportation corridor are discussed below.

[9] All elevations are in reference to NAVD88.

Liquefaction is the process in which loose, saturated soils and sediments lose shear strength and fail during or following seismic ground shaking. Shallow groundwater was discovered within five feet of the ground surface and loose soils are present, therefore Caltrans conducted an analysis of the liquefaction potential and determined that the risk of seismically induced liquefaction and related types of ground failure is low to none; the site is stable and soils on site are not prone to this type of failure. The bridge piles would be founded on rock and the abutments would be compacted during construction, which will prevent settling and spreading as a result of loose soil in the abutments and approaches, thereby minimizing liquefaction risks.

The project is also located in an area highly prone to landslides due to the presence of steep slopes and unstable soils; this hazard is exacerbated by the potential for strong ground shaking during an earthquake. However, there are no steep hillsides adjacent to the bridge that are susceptible to landslides that could directly impact the proposed bridge, and Caltrans analyzed the capability of the adjacent hillsides to support the proposed cut heights and slopes required for the new bridge approaches and concluded that the proposed slope of one foot of run for each foot of rise with cut banks of a height of 10 feet would perform well in the material at the bridge site. Caltrans also designed the bridge abutments to be founded on driven piles because of the presence of loose compressible soil near the surface. Additionally, the roadway approaches that will be widened to accommodate the new bridge width will be excavated to at least four feet below road surface and compacted as they are refilled to provide the necessary support for the roadway. Therefore, the project as designed minimizes landslide-related risks to the structure

Caltrans has designed the bridge to be seismically safe under current federal and state standards. However, as noted above, there is still some risk from extreme seismic events and given the vital connection north and south along the coast that Highway 1 provides here, and the difficulty of alternative routes in this area, emergency planning for the event of bridge closure is important. In general, in such emergencies, Caltrans will work in coordination with the local governments, local emergency services, and the state highway patrol, to close the bridge while it is evaluated for damage. If the bridge is determined to be safe, the highway is reopened, and otherwise repairs are undertaken.

Nonetheless, as there are potential risks from exposure to extreme seismic events causing damage to the bridge and because Elk Creek Bridge is an important route for ingress and egress during and after emergencies, the Commission attaches **Special Condition 17 (Seismic and Tsunami Hazard Response Plan)**. Special Condition 17 requires Caltrans to submit a Seismic and Tsunami Hazard Response Plan within 60 days of commencement of construction. The Special Condition requires that the plan include procedures to respond to a major seismic and tsunami event that could result in damage to or closure of the Elk Creek Bridge, including procedures to warn the traveling public of the possible hazardous conditions, coordinate with local authorities on emergency responses, ensure adequate alternative evacuation routes, and, afterwards, to evaluate the condition of the bridge.

Scour and Erosion Hazards

As described in Section A (Project Description), there is a history of scour[10] issues in recent years at the project site which resulted in the emergency placement of rock slope protection (RSP) to stabilize the creek banks and protect the road and bridge.[11]

In Caltrans' May 2020 Maintenance Report, several scour problems were noted with the existing structure, and the structure was determined to be scour critical, 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. Due to the difference in floodplain width and the length of the bridge, contraction scour is produced during large storm events. Water speed velocities were analyzed upstream and under the proposed bridge which determined a live-bed scour condition. A live bed scour condition occurs when there is transport of bed material in the upstream reach into the bridge cross section during large storm events. Contraction scour is the main component of the scour experience at this bridge. Abutments 1 and 2 or the proposed bridge are the only bridge elements susceptible to scour.

Caltrans has determined that in general, the streambed appears to be stable and even shows a pattern of aggregation on the south end of the bridge, and that historically the scour experienced by the north end of the bridge has been due to an impinging flow along the north bank, which has been addressed with the RSP placed in 2019 and appears to be stable over time. Based on this information, Caltrans determined that degradation is negligible for this bridge. Caltrans also determined that due to the impinging flow along the north bank, thalweg (lowest elevation of the creek) migration is a possibility if countermeasures along the north bank were to ever fail.

To address the scour issues experienced by the existing bridge, Caltrans has designed the replacement bridge to be a longer, full-span bridge. Increasing the span length by 18 feet and removing piers from the streambed will increase hydraulic capacity and remove bridge elements susceptible to scour.

The design of the replacement bridge meets Caltrans' hydraulic requirements, and effectively eliminates many of the historic scour problems experienced at this location. However, as discussed above, due to the history of scour along the north abutment/embankment, some stabilization of the bank is still needed. Rather than retaining the existing unvegetated RSP armoring the north bank of Elk Creek, Caltrans proposed to remove all of this rock and replace it with a bio-engineered root wad revetment (bank support system) that would primarily provide fish habitat improvement but would also stabilize the embankment, protect the new bridge abutment on the north side from scour and direct stream flow towards the center of the creek. As discussed in Section E (Stream Alteration), this is a beneficial change and will provide habitat for

[10] Bridge scour typically refers to the erosion or removal of sediment, such as sand and gravel, from around bridge abutments or piers. Scour, caused by swiftly moving water, can scoop out scour holes, compromising the integrity of a structure.

[11] Due to severe winter storms in 2018-2019, Governor Gavin Newsom declared a State of Emergency in Mendocino County in February 2019. Caltrans installed rock armoring along the banks of Elk Creek pursuant to emergency authorization procedures of Section 30600 (e)(1).

salmonids and other wildlife. **Special Condition 12 (Root Wad Revetment Monitoring Plan)** requires Caltrans to monitor the revetment and submit reports. Among other components, the plan shall include methods to evaluate the performance of the root wad revetment as a bank stabilization strategy, such as regular surveys to evaluate movement of the revetment components and to quantify any observed erosion or scour. Therefore, the project as conditioned minimizes erosion and scour risks to the structure.

Flooding Hazards

As described in Section A (Project Description), Elk Creek originates in the Coastal Mountain Range of Mendocino County and flows in a northwest direction approximately 11 miles to the bridge location, draining 27 square miles. A large sand bar exists at the mouth of the creek, forming an estuary about 2000 feet in length. The banks of this estuary are heavily vegetated with brush and trees. The bridge location is at an elevation of approximately 20 feet and is located about 1800 feet from the Pacific Ocean.

The bridge location lies within a Federal Emergency Management Agency (FEMA) mapped designated floodplain area. The FEMA Flood Insurance Rate Map designates a Zone A 100-year floodplain/floodway at the bridge crossing, which is used for areas where there is a 1% annual chance of flooding (i.e., at risk of inundation during the 100-year ARP flood event). However, this site does not have a base flood elevation determined. The floodplain's width at the bridge is 347 feet. The highway north and south of the bridge is in Zone X, an area of minimal flood hazard.

Caltrans developed a hydraulic model of the floodplain and analyzed the existing condition and the proposed condition at the project site, where the proposed condition accounted for the increased bridge length, removal of piers, and finish grade surfaces around the new bridge. With the removal of two existing piers from the channel, Caltrans calculated that the water surface elevations will decrease by 1.6 feet for the 50-year storm event, and 1.7 feet for the 100-year storm event. Available freeboard under the new bridge structure is anticipated to be 2.8 feet during a 50-year storm event and 2.1 feet during a 100-year storm event. Therefore, the bridge structure and adjacent roadway is not anticipated to flood during the storm event that has a 1% annual chance of occurring. In addition, the removal of piers in the channel will reduce the potential to capture floating debris and thus improve flow conditions as compared to the existing bridge. Therefore, the project has been designed to minimize flood risks.

Sea Level Rise

As flood risks are generally anticipated to worsen in the future with projected sea level rise (SLR), the project design must consider a range of sea level rise projections in evaluating the potential exposure of the development to future flood risks. The California Ocean Protection Council's State of California Sea-Level Rise Guidance 2018 Update, and the Commission's 2018 adopted Sea Level Rise Policy Guidance, both contain a set of sea level rise projections for 12 tide gauges throughout California, and both

agencies recommend considering a range of SLR projections and related information as best available science on SLR in California.

Caltrans completed a SLR vulnerability assessment for the Elk Creek area and used projections from the OPC's 2018 guidance for the Arena Cove Tide Gauge. The appropriate time horizon to use to evaluate sea level rise depends on the anticipated duration of development, after which the development is expected to be removed, replaced, or redeveloped. Caltrans assigns a 75-year service lifespan to bridge structures; therefore, the bridge service life is currently planned to end in approximately 2100. However, Caltrans will complete regular bridge inspections and maintenance over the bridge lifespan and will conduct a life-cycle cost analysis when considering bridge replacement at the end of its service life. Regardless, the bridge has been designed with Caltrans standards to be safe from hazards and serviceable to at least the year 2100.

The following table depicts the range of SLR projections at the Arena Cove tide gauge under low-risk, medium-high risk, and extreme risk aversion scenarios.[12]

Table 2. Sea Level Rise Projections Over Project Lifetime

Year	Projected Sea Level Rise (in feet)		
	Low Risk Aversion	Medium-High Risk Aversion	Extreme Risk Aversion
2050	1.0	1.8	2.6
2070	1.7	3.3	5.0
2100	3.1	6.7	9.9

As noted above, the project site is at an elevation of approximately 20 feet and is located approximately 1,800 feet upstream from the conjunction of Elk Creek and the ocean. Caltrans selected a sea level rise amount of 5.4 feet which is the low emissions projection for 2100 under the 1-in-200 projection (medium-high risk aversion projection) for the Arena Cove Tide Gauge. Using the same hydraulic model discussed above, Caltrans considered the potential influence of sea level rise on water surface elevation at the bridge and determined that the bridge is located approximately 840 feet upstream of the area that would be affected by 5.4 feet of sea level rise, meaning the computed water surface elevation at the bridge during a 100-year storm event would be 19.5 feet regardless of the influence of sea level rise.

Although Caltrans selected a sea level rise amount of 5.4 feet rather than 6.7 feet, which is the high emissions scenario projection under Medium-High Risk Aversion, due

[12] Given the range of many uncertainties incorporated into the models, these projections are not precise, but are intended to reflect a precautionary approach. The low-risk aversion scenario has a 17% chance of being exceeded, and the medium-high risk aversion scenario has a 1 in 200 chance, or a 0.5%, chance of being exceeded. The extreme risk accounts for the extreme ice loss scenario and does not have an associated probability at this time. The physical processes that would lead to the extreme scenario of sea level rise are predicted to be unlikely to occur before the latter part of the century.

to the hydraulic conditions at the bridge the Commission's staff engineer reviewed Caltrans' hydraulic model results and determined the discrepancy is unlikely to make a meaningful difference. Caltrans has also assumed the topography, vegetation, and distance from the coast will dissipate storm surge energy and have no influence on water surface elevations at the bridge. The Commission's technical team, including staff engineer and geologist, reviewed this information and concur that the proposed project has been designed to minimize flood risks, including with future SLR, consistent with the hazards and SLR policies of the Coastal Act.

Tsunami Hazards

The existing bridge is located approximately 1,800 feet from the Pacific Ocean and is within an area mapped in 2021 as part of the updated tsunami inundation mapping for emergency planning conducted in Mendocino County by the California Geologic Survey.

Tsunami events occur when an underwater disturbance triggers a series of waves. The potential hazard for bridges may include flooding, uplift forces, the additional static and dynamic loads on the bridge structure, and the potential for high velocities to cause scour and undermine the bridge foundation. Along with flooding, the large flow of water in a tsunami can damage the bridge as the water rushes in over and around a bridge structure and then recedes, particularly if the waves are high enough to strike the deck. Therefore, wherever possible, new bridges should be designed so the tsunami flows below the soffit (bottom surface of a bridge).

As with seismic hazards, Caltrans designed the proposed bridge to the 975-year ARP tsunami event engineering standard, which has a 5% in 50 years probability of occurrence. According to Caltrans' Hydraulic Report prepared for this project (2022), Caltrans calculated the 975-year tsunami wave elevation as approximately 36.3 feet (NAVD88) with a wave velocity of 6.5 feet per second. To evaluate future tsunami risk with sea level rise, Caltrans added 5.4 feet of sea level to the tsunami wave elevation, which would increase the tsunami wave elevation to 41.7 feet. With 6.7 feet of sea level rise (high emissions, Medium-High Risk Aversion scenario for 2100)), the tsunami wave elevation could be 43 feet. The lowest point of the proposed new bridge soffit will be at an of elevation 21.6 feet (NAVD88). Therefore, the 975-year ARP tsunami wave elevation would be approximately 14.7 feet above the lowest point of the bridge soffit, and the forces associated with a rare 975-year ARP tsunami event, including both lateral and uplift forces, would be a concern for this bridge. To account for the tsunami loading forces associated with a 975-year ARP tsunami event at this site, Caltrans incorporated the following design measures:

- Additional prestressing was placed in the bridge superstructure to resist the downward force of the tsunami loading acting on the bridge.

- To resist the upward force of the tsunami loading, additional reinforcing steel was added in the bridge deck.

- To prevent tsunami loading uplift force from unseating the superstructure and separating it from the bearings at the abutments, uplift restrainers were added at each end of the bridge to connect the superstructure to the face of the abutments. The tsunami uplift restrainers have been designed to engage when the bridge is subject to TL uplift forces and will not affect normal operation of the bridge.

Therefore, in the event of a rare tsunami of this magnitude, the fill slopes might sustain some damage, but the bridge would likely not collapse, and the bridge has generally been designed to remain intact and usable. In general, in emergency situations following a large hazardous event, Caltrans will work in coordination with the local governments, local emergency services, and the state highway patrol, to close the bridge while it is evaluated for damage. If the bridge is determined to be safe, the highway is reopened, and otherwise repairs are undertaken.

Nonetheless, as with the seismic hazards discussed above, there are potential risks from exposure to extreme tsunami events impacting the bridge and Elk Creek Bridge is an important route for ingress and egress during and after emergencies. Therefore, **Special Condition 17 (Seismic and Tsunami Hazard Response Plan)** requires Caltrans to submit a Seismic and Tsunami Hazard Response Plan within 60 days of commencement of construction. The Special Condition requires that the plan include procedures to respond to a major seismic and tsunami event that could result in damage to or closure of the Elk Creek Bridge, including procedures to warn the traveling public of the possible hazardous conditions, coordinate with local authorities on emergency responses, ensure adequate alternative evacuation routes, and, afterwards, to evaluate the condition of the bridge.

Assumption of Risk

Although Caltrans has designed the proposed bridge to minimize risks to coastal hazards, and the Seismic and Tsunami Hazard Response Plan will further minimize risks, it is not possible to remove all associated risk associated with the uncertainties of natural hazards. Therefore, considering the risks discussed above, the Commission attaches **Special Condition 21 (Assumption of Risk, Waiver of Liability, and Indemnity Agreement)**, which requires the applicant to assume the risks of hazards to the property and waive any claim of liability on the part of the Commission. Given that Caltrans has chosen to implement the project despite the tsunami and seismic risks, Caltrans must assume the risks. Special Condition 21 notifies Caltrans that the Commission is not liable for damage as a result of approving the permit for development. The condition also requires Caltrans to indemnify the Commission in the event that third parties bring an action against the Commission as a result of the failure of the development to withstand the hazards.

For all the above reasons, the Commission finds that the proposed project, as conditioned, will minimize risks to life and property from geologic and flood hazards, consistent with Coastal Act section 30253. The Commission further finds that Caltrans

has appropriately identified and assessed the impacts of sea level rise, and that the proposed project avoids, minimizes, and mitigates the impacts of sea level rise to the extent feasible, consistent with Coastal Act section 30270.

I. Public Access

Coastal Act section 30210 states:

> *In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.*

Coastal Act section 30211 states:

> *Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.*

Coastal Act section 30212(a) states, in part:

> *Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where: (1) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources, (2) adequate access exists nearby, or, (3) agriculture would be adversely affected.*

Highway 1 serves as an essential coastal transit corridor for residents of the Mendocino Coast, is considered a Main Street for many communities, and is the only north-south travel corridor along the coast for local residents, residents of the state of California, and visitors from farther afield. As a vital stream crossing, Elk Creek Bridge is an important transportation link between the southern portion of the coastal county and northern. Numerous coastal access points in the region can only be reached by Highway 1, and without the highway crossing over Elk Creek many coastal access points would require lengthy detours.

Highway 1 in Mendocino County is also legislatively designated as part of the Pacific Coast Bike Route (PCBR). The PCBR is internationally known and is traveled extensively in the summer months by cyclists from multiple countries. The California Coastal Trail (CCT) follows sections of Highway 1 within Mendocino County, when separate trails are unavailable.

As described in Section A (Project Description) the existing bridge has structural deficiencies that could result in reduced safety to all users from interrupted traffic in the event of a collision, seismic event, scour failure, or other catastrophic failure. The bridge also does not support broader non-vehicular access; 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 and raised concrete areas

adjacent to the shoulders that are not compliant with the Americans with Disabilities Act (ADA).

Although, this section of highway is designated as part of the Pacific Coast Bike Route, and cyclists are allowed to use the existing bridge, the shoulders along Highway 1 are limited, narrow, and functionally below current safety standards and no separate bike lanes exist on the bridge. The existing bridge also lacks a separate pedestrian pathway and there is essentially no safe pedestrian crossing of the bridge.

Permanent Public Access Improvements

First, the proposed project would improve the safety and reliability of the Elk Creek Bridge, preserving a critical coastal public access corridor. The project would address critical scour issues that threaten the bridge stability as well as decayed railings. The design of the proposed project would improve traffic safety with upgrades to the bridge approach by widening the shoulders and decreasing the curve radius, thus reducing the potential for accidents and collisions on the bridge.

The project also includes public access improvements that will improve safety and access for cyclists and pedestrians. Specifically, the project would improve on current conditions by widening the existing approximately two-foot shoulders within the project area (on the bridge structure and the northern and southern roadway approaches to the bridge) to six feet to provide adequate space for safe bicycle access and for automobile emergencies. The project would also add a 6-foot separated pedestrian and bicycle pathway to the western southbound lane.

At the same time, the new bridge makes essentially no change to the capacity of the highway, with no new lane additions. The vehicular travel lanes are widened by one foot, from 11 to the current standard of 12 feet. In some cases, widening of vehicular travel lanes to meet current vehicular safety standards can have an impact on pedestrian safety. This is particularly the case in areas where highways or roadways with fast-moving traffic are intermixed with residential or community development. In many such cases, highway design safety standards that result in an increase in automobile traffic speed can cause an overall decrease in public safety and an increase in overall deaths and injury to non-vehicular users. In such cases, narrower lanes, increased use of traffic calming devices, slower speed limits, and other measures are better tools to improve overall safety. In this case, however, the area is almost entirely rural, with little residential or community developments nearby. The one-foot lane widening is a very marginal increase and takes place almost entirely on the short-section of the bridge, which will be a very minor temporal passing for drivers. There will be, therefore, almost no inclination for drivers to speed up from the new lane spacing, and any such inclination will be reduced by the narrowing of the width as the driver returns to the smaller highway. At the same time, new shoulders will better protect cyclists on the highway, and a new separated walkway will provide more protected, separate pedestrian and cycling access. Thus, overall, the project balances public access improvements and travel speed standards to the benefit of safe public access for pedestrians and cyclists.

Therefore, the proposed replacement bridge will permanently improve public access by increasing the safety of all highway travelers. Replacement and widening of the bridge will enhance multimodal coastal access by encouraging bicycle and pedestrian travel between the communities to the north and south.

Temporary Traffic Impacts

Project construction will cause temporary delays during construction. As mentioned above, construction is anticipated to be completed within three calendar years, and approximately 24 months. Construction will occur eight hours per day, five days per week. Day work will typically begin as early as 6:00 a.m. and end by 6:00 p.m. to allow flexibility for the contractor depending on the type of work being performed on a given day. While night work is not planned at this time, night and weekend work may be necessary when construction activities are actively in progress, depending on unforeseen delays with construction.

Construction will be conducted in a manner so that traffic would be directed to one traveling lane and across the creek via a temporary bridge and temporary roadway approaches directly east of the existing bridge. Eastbound and westbound traffic would be subject to alternating controlled travel using a temporary signal system. Therefore, a temporary signal system or flagging will be installed to provide one-way, reversible traffic control for 24 hours a day. These single lane closures are estimated to be needed for approximately 115 working days.

While construction will require temporary, short-term traffic delays, at least one lane of traffic will remain open; travelers and emergency service providers will be notified in advance of construction activities; and estimated delays will be no more than 10 minutes during the installation of the temporary traffic signal, then 5 minutes during reversing traffic control and 15 minutes during intermittent closures thereafter. Signage will be in place in advance of construction to notify motorists and bicyclists. Specially, reversing traffic control with flaggers requires the use of advance flaggers during daylight hours and full matrix Portable Changeable Message Sign boards. Twelve-inch flashing beacons will be installed on the three advance construction signs. Any emergency service agency whose ability to respond to incidents would be affected by any lane closure must be notified prior to that closure. All work will be coordinated with the local bus service and school bus system in advance of construction.

Caltrans proposes to prepare a Transportation Management Plan (TMP) consistent with these terms, and subpart A-v of **Special Condition 1 (Final Construction Plans)** requires that the TMP be submitted for the Executive Director's review and approval. The Transportation Management Plan must also provide for full and continuous access for pedestrians and cyclists through the work corridor, except during limited complete closures.

Conclusion

Overall, the project will have only minor, temporary impacts to public access through traffic delays during construction, but over the long-term, the project will permanently

improve public access by ensuring the safe and continued operation of this section of Highway 1, a vital coastal public access roadway; by expanding shoulders for improved and safer cycling access; and by improving pedestrian and bicyclist access across the bridge. Therefore, the Commission finds that the proposed project, as conditioned, will not have a significant adverse effect on public access, and the project as conditioned is consistent with the requirements of Coastal Act sections 30210, 30211, 30212, and 30214.

J. Visual Resources

Section 30251 of the Coastal Act states as follows:

> *The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.*

Coastal Act Section 30254 states, in part:

> *New or expanded public works facilities shall be designed and limited to accommodate needs generated by development or uses permitted consistent with the provisions of this division; provided, however, that it is the intent of the Legislature that State Highway Route 1 in rural areas of the coastal zone remain a scenic two-lane road….*(emphasis added)

As described above in Section A (Project Description), the existing subject Elk Creek Bridge is located on Highway 1 near the town of Elk in Mendocino County. The entire highway corridor within Mendocino County is known for enduring views of coastal bluffs and the Pacific Ocean. Highway 1 within the project limits is a rural two-lane conventional highway and is functionally classified as a Minor Arterial Road. The land use within the broader highway corridor within Mendocino County is primarily rural range land and agriculture with minimal visible development and abundant views of the ocean and scenic coastal areas. The project site is located in an area designated as "highly scenic" under the Mendocino County certified LCP. Although not the legal standard of review for this project, the LCP requires that new development in highly scenic areas be subordinate to the character of the setting.

Most of the broader highway corridor north and south of the project site is relatively straight for miles and is elevated on coastal bluffs with views of the Pacific Ocean to the west and forested mountains and ridgelines to the east. However, directly south of the project site there are hairpin turns that wind steeply down to Elk Creek from the bluff tops and directly north of the project site the road makes a wide arcing loop around the riparian forest and wetlands that surround the creek. Therefore, the project is located

within a curve and at a low spot along Highway 1, where there are no scenic views of the Pacific Ocean. This is because the surrounding terrain and dense roadside vegetation limit views within the immediate project corridor. There are also limited views of the bridge itself in the landscape due to the topography and dense riparian forest.

The visual character of the existing bridge will be altered slightly by the proposed project in that the existing bridge would be replaced with a wider bridge with updated railings and a separated accessway on the western side, however the bridge will remain largely the same visually and essentially in the same place, and the proposed changes in visual character will remain compatible with the existing visual character in the corridor and will maintain the highway in this area as a scenic two-lane road. Nevertheless, to meet modern safety standards, the replacement bridge will differ visually in several respects, as discussed in the following paragraphs. These safety and multimodal upgrades are consistent with the visual resources protection policies of Chapter Three of the Coastal Act, listed above, as well as with other recent bridge projects on Highway 1 in Mendocino County that have been and/or are planned to be upgraded to similar design standards.

Bridge Structure and Roadway Width

As discussed in Section A (Project Description), the bridge lanes will be widened from 11 feet to 12 feet; bridge shoulders, currently approximately 2 feet wide, will be widened to 6 feet on both sides; and a 6-foot pedestrian and bicycle pathway will be added to the western southbound lane. The new bridge will be 16.5 feet wider overall than the existing bridge.

Table 3. Summary of Existing and Proposed Bridge Dimensions

Existing Bridge Dimensions			Proposed Bridge Dimensions			Increase in Bridge Dimensions		
Length (ft)	Width (ft)	Area (ft^2)	Length (ft)	Width (ft)	Area (ft^2)	Width (ft)	Area (ft^2)	Area (acre)
122	30.5	3,721	140	47	6,580	16.5	2,859	0.066

The new bridge deck and roadway approaches will be noticeably wider to accommodate the expansion of the traffic lanes and roadway shoulders and addition of a separated pedestrian and bicyclist pathway, which will increase the scale of the bridge in the landscape when compared to existing narrow conditions. However, there are essentially no public views of the bridge in the landscape and very view private views that will be impacted.

Caltrans standards and the Highway Design Manual call for larger shoulders, typically 8 feet. However, in several actions the Commission has approved a compromise with Caltrans for 6-foot shoulders on Highway 1 bridges, which both increases highway safety and provides larger shoulders for cycling access on bridges. (See, for example, the Ten Mile River Bridge north of Fort Bragg.)

In sum, the overall effect of these changes will be a somewhat larger bridge that will remain subordinate to the improved views of the surrounding natural landscape from the bridge for pedestrians and bicyclists. The new bridge shoulder widths and overall size will appear similar to shoulder widths and bridge sizes seen elsewhere along Highway 1 in Mendocino County.

Bridge Railing and Guardrail Design

The existing bridge railing is a rustic low wood barrier on a concrete curb and painted white with obvious signs of decay. Vehicle barrier railings on the new bridge will be upgraded to a slightly taller type (ST-75) on both sides of the proposed bridge to meet current safety design standards, and a pedestrian railing will be added along the new separated walkway on the western, southbound side of the highway. The proposed railing type is visually permeable and galvanized and will likely be painted or stained a burgundy-brown color similar to the surrounding natural environment and riparian vegetation. Existing guardrail at the ends of the bridge will be upgraded from metal beam guardrail to the current standard Midwest Guardrail System and extended along the southbound lane. The new guardrail will be approximately two inches taller than the existing guardrail. The guardrail will be stained to blend with the surrounding natural environment. Staining the railing and guardrail will also eliminate the glare of these new metal elements. Finally, concrete vegetation control is proposed under all guardrail on the north and south side of the bridge, which will be stained a very dark grey in order to approximate faded asphalt and blend in with the adjacent roadway.

To ensure the final colors and design of bridge railings and guardrail will be subordinate to the natural setting, minimize reflective surfaces, and blend in hue and brightness with their surroundings, Special Condition 1 is attached to require submittal of final design plans prior to commencement of construction, which demonstrate consistency with these standards.

Temporary Construction Impacts and Vegetation Removal

As discussed in other sections of this report, the project will require the removal of existing vegetation, primarily on the banks of Elk Creek, for various construction activities and components of the proposed project. However, disturbed areas that will not be permanently filled with bridge and roadway components will be restored and replanted with native vegetation with efforts to control invasive species after construction is complete (see Section D, above). Therefore, visual impacts from vegetation removal will be relatively minor and mostly temporary. Although construction activities will introduce heavy equipment and associated vehicles into the viewshed of highway users, as well as construction and traffic control signage, these visual impacts will be temporary.

Root Wad Revetment

As discussed in Section E (Stream Alteration), currently, there is a wall of rock slope protection (RSP) on the north bank of the creek extending under and upstream of the bridge. Caltrans proposes to remove this RSP and replace it with a root wad revetment,

which will enhance the visual quality of the site, because the root wad revetment will blend with the natural setting in contrast to the existing RSP to be removed.

Conclusion

Overall, the proposed project will maintain scenic views in the project area and bridge upgrades will enhance the visual quality of the bridge due to context appropriate railings and an additional separated pedestrian walkway for the public to view the surrounding landscape. Therefore, the Commission finds that the proposed development, as conditioned, is consistent with section 30251, as the development will protect views to and along the coast, minimize the alteration of natural landforms, and will be compatible with the character of the surrounding area. The proposed development as conditioned also is consistent with intent of section 30254 to maintain State Highway Route 1 in rural areas as a scenic two-lane road.

K. Archaeological Resources and Tribal Consultation

Section 30244 of the Coastal Act states as follows:

> *Where development would adversely impact archeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.*

In addition, in 2018 the Commission adopted a Tribal Consultation Policy to guide consultation with Tribal entities in permitting and other matters.

Caltrans' investigations for cultural resources located in the project Area of Potential Effects[13] (APE) were conducted in 2018 and included archival research, a records search, Native American consultation, and a cultural resources pedestrian survey. A registered professional archaeologist from Caltrans prepared and submitted a Historic Property Survey Report and a Combined Paleontological Identification Report and Paleontological Evaluation Report, and Caltrans provided Commission staff copies of the consultation initiation letters they sent in 2018 to the tribes on the Native American Heritage Commission (NAHC) list of potentially interested tribes who may have knowledge of cultural resources in the project area.

Based on the results of record search and field survey, which identified no archaeological resources within the APE, Caltrans concluded that the project area does not contain any tribal cultural resources listed or eligible for listing in the California Register of Historical Resources (CRHR), or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k). Nonetheless, the proposed project

[13] The Area of Potential Effects (APE) for the project consists of the horizontal and vertical maximum potential extent of direct and indirect impacts that could result from the project. The archaeological APE includes the project footprint, construction areas, easements, and staging areas. The APE is a linear corridor along Highway 1 between post mile (PM) 31.21 and PM 31.5 that includes the Elk Creek Bridge. It measures 3.3 acres in size and encompasses the existing and proposed right of way and temporary construction easements necessary for the project.

incorporates mitigation measures in the event of an inadvertent find of cultural materials, to stop work in the area and assess the find.

Consistent with the Commission's Tribal Consultation Policy, Commission staff reviewed the tribal consultation undertaken by Caltrans. On June 3, 2022, Commission staff wrote to the tribal representatives and individuals identified by the NAHC to inform them of the project's CDP application and the Commission's upcoming hearing on the project, to offer consultation, and to advise them of the opportunity to provide comments for the CDP hearing. Four responses have been received, and all of the responses indicated the project is not within the aboriginal territory or area of interest of the tribe and they had no comments on the project.

To reinforce Caltrans' proposed measures to protect any sensitive archaeological resources in the project area, the Commission includes **Special Condition 7 (Protection of Archaeological Resources)**. Special Condition 7 further requires that in the event of such a discovery, Caltrans shall submit, for Executive Director review and approval, a report documenting the results of the analysis and any proposed changes to the project description, including any avoidance, minimization, and mitigation measures. The Executive Director will subsequently respond in writing with a determination of whether the proposed changes are allowable under the CDP or other applicable Coastal Act policies, or an amendment application to this CDP is required.

In conclusion, based on the findings of Caltrans' records search and surveys, the tribal consultation and outreach performed by Caltrans and the Commission; as well as the cultural resource protection protocols that will be implemented by Caltrans as part of the project, the Commission finds that the proposed project, as conditioned, includes reasonable mitigation measures to protect archaeological resources consistent with Coastal Act Section 30244.

L. Reimbursement of Costs and Fees

Coastal Act Section 30620(c)(1) authorizes the Commission to require applicants to reimburse the Commission for expenses incurred in processing CDP applications. See also 14 C.C.R. § 13055(g). Thus, the Commission is authorized to require reimbursement for expenses incurred in defending its action on the pending CDP application. Therefore, consistent with Section 30620(c), the Commission imposes **Special Condition 22 (Liability for Costs and Attorneys' Fees)** requiring reimbursement of specified costs and attorneys' fees the Commission incurs in connection with the defense of any action brought by a party other than the applicant/Permittee challenging the approval or issuance of this permit.

M. California Environmental Quality Act (CEQA)

Caltrans served as the lead agency for California Environmental Quality Act (CEQA) purposes for the bridge replacement project. Caltrans prepared an Initial Study and adopted a Mitigated Negative Declaration for the project on December 22, 2021.

The Commission's regulatory program for reviewing and granting CDPs has been certified by the Resources Secretary to be the functional equivalent of environmental review under CEQA. (14 CCR § 15251(c).) Section 13096 of Title 14 of the Commission's regulations requires Commission approval of CDP applications to be supported by a finding showing the application, as modified by any conditions of approval, to be consistent with any applicable requirement of CEQA. Section 21080.5(d)(2)(A) of CEQA prohibits approval of a proposed development if there are any feasible alternatives or feasible mitigation measures available, which would substantially lessen any significant adverse effect the proposed development may have on the environment.

The Commission incorporates its findings on Coastal Act consistency at this point as if set forth in full. No public comments regarding potential significant adverse environmental effects of the project were received by the Commission prior to preparation of the staff report. As discussed above, the proposed project has been conditioned to be consistent with the policies of the Coastal Act. As specifically discussed in these above findings, mitigation measures that will minimize or avoid all significant adverse environmental impacts have been required. As conditioned, there are no other feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impacts which the activity may have on the environment. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified impacts, is the least environmentally damaging feasible alternative, has no remaining significant environmental effects, either individual or cumulative, and complies with the applicable requirements of the Coastal Act to conform to CEQA.

APPENDIX A

SUBSTANTIVE FILE DOCUMENTS

1. CDP Application File No. 1-22-0446
2. County of Mendocino Certified Local Coastal Program