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Filed	10/18/20
180 th Day:	4/16/21
Staff:	CK-A
Staff Report:	3/26/21
Hearing Date:	4/16/21

STAFF REPORT: REGULAR CALENDAR

Application No.: 1-19-0356

Applicant: County of Humboldt Dept. of Public Works

Project Location: Pine Hill Road at Swain Slough (Post Mile 0.20), just south of the City of Eureka in unincorporated Humboldt County (County right-of-way and adjacent APNs 302-181-08, 302-151-19, & 302-151-20).

Project Description: Replacement of the existing Pine Hill Road bridge over Swain Slough and associated improvements.

Staff Recommendation: Approval with conditions.

SUMMARY OF STAFF RECOMMENDATION

The Humboldt County Department of Public Works proposes to remove and replace the Pine Hill Road bridge spanning Swain Slough. Pine Hill Road is a local road, running generally east-west, with low-lying grazing land on three sides, at the southern end of the City of Eureka in unincorporated Humboldt County. Swain Slough is a tidally influenced tributary of Elk River and Humboldt Bay. The proposed new bridge would be fourteen feet wider than the existing bridge to accommodate expanded five-foot-wide shoulders and safety railings.

The development requires dredging and filling in wetlands along the banks and channel of Swain Slough, the vegetated ditches along the roadside, and seasonal wetlands in the adjacent agricultural fields. Overall, however, the proposed development would

result in a permanent net gain in wetlands and coastal waters. The existing bridge, built in 1955, is a three-span structure with abutments that constrict the slough channel, while the proposed new bridge would be a longer, single-span structure with its abutments and protective sheet piling located outside of the current channel. This new design would result in the removal of 35 cubic yards of abutment and piers from the slough and an overall channel widening of seven feet at the bridge site. The proposed project would also widen the roadside ditches on the western roadway approach partially using uplands that exist along the current property fence lines, resulting in the creation of 1,912 square feet of additional vegetated ditch.

The widening of the western bridge approach would also result in a permanent loss of approximately 3,044 square feet (0.07 acres) of nonprime agricultural land. However, as the bridge is located at the edge of the urban periphery, staff believes this conversion is consistent with the criteria of section 30241 of the Coastal Act.

Hydraulic studies including a scour analysis demonstrate the new bridge has been designed to ensure stability and structural integrity and will not contribute to erosion, consistent with Coastal Act section 30253. The proposed bridge soffit elevation is relatively low, but flood waters from the projected 50-year flood would overtop the slough banks before the soffit gets wet and thus the bridge would not impede flood flows. Due to the project location, any additional elevation of the bridge and its western approach would result in additional impacts to roadside wetlands and agricultural lands. The applicant has designed the new bridge so that it can be raised 4.5 feet to accommodate projected sea level rise over the life of the project if and when the accessibility benefits of raising the bridge outweigh the coastal resource costs (e.g., when the County raises the rest of the road). Given that (a) the proposed bridge will be inaccessible during flooding of the adjacent roadway, (b) the proposed bridge can accommodate flooding without compromising its stability, and (c) there are alternative routes available to avoid Pine Hill Road in the event of flooding, the proposed development minimizes risk to life and property consistent with Coastal Act section 30253.

The development would result in temporary construction impacts. Staff recommends a number of special conditions to avoid and minimize direct impacts to sensitive fish and wildlife species, as well as conditions to prevent indirect impacts from degraded water quality and aquatic habitat as the result of erosion and polluted runoff.

Staff believes that the project, as conditioned, includes all feasible mitigation measures necessary to find the project consistent with the Chapter 3 policies of the Coastal Act. The Motion to adopt the staff recommendation of approval with conditions is found on [page 4](#).

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[Exhibit 3 – Construction Plans](#)

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[Exhibit 5 – Wetland Impacts Map](#)

[Exhibit 6 – Restoration Plan for Lyngbye’s sedge](#)

[Exhibit 7 – Pictures of Existing Bridge](#)

[Exhibit 8 – Proposed New Bridge & Bridge Railing Design](#)

I. MOTION AND RESOLUTION

Motion:

I move that the Commission **approve** Coastal Development Permit No. 1-19-0356 pursuant to the staff recommendation.

Staff Recommendation of Approval:

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

Resolution to Approve the Permit:

The Commission hereby approves a 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

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 applicant 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 applicant to bind all future owners and possessors of the subject property to the terms and conditions.

III. SPECIAL CONDITIONS

1. **Submittal of Final Construction Plans.** PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT 1-19-0356, the permittee shall submit, for the review and written approval of the Executive Director, a set of final construction plans that are consistent with all special conditions of this coastal development permit and that substantially conform with the 90% plans and associated specifications prepared by Quincy Engineering dated December 3, 2019 (excerpted in Exhibit 3). The approved development shall substantially conform to 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 amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.
2. **Pile Driving Limitations.** All pile-driving activities shall be performed in full accordance with the following provisions:
 - A. To protect fish from the acoustic impacts of pile driving, neither of the dual metric exposure criteria shall be met or exceeded in the wetted slough channel. The dual metric exposure criteria for injury to fish are: (1) a peak Sound Pressure Level (SPL) at or above 206 dB (re 1 μ Pa) from a single hammer strike; or (2) a cumulative Sound Exposure Level (SEL) at or above 187 dB (re: 1 μ Pa²-sec). The National Marine Fisheries Service (NMFS) uses the simple summation procedure where Total SEL = Single Strike SEL + 10 log (number of strikes);
 - B. If the cumulative SEL approaches 187 dB within the aquatic environment of Swain Slough, pile driving shall stop to avoid exceeding the criterion and shall not commence again for at least 12 hours;
 - C. In the event of an exceedance of either criterion of the dual metric exposure criteria, pile-driving operations shall be immediately stopped and shall not recommence unless the Executive Director, in consultation with the fisheries biologists of the California Department of Fish and Wildlife (CDFW), the U.S. Fish and Wildlife Service (USFWS), and NMFS, so authorizes based on the deployment of additional sound attenuation or other measures deemed likely by qualified technical experts to return the pile driving to conformance with the dual metric exposure criteria; and
 - D. If the return to pile driving after the implementation of the additional measures discussed in Subsection C above results in an exceedance of either criterion of the dual metric exposure criteria, pile driving shall be stopped immediately

and shall not re-commence until or unless the Commission approves an amendment to the coastal development permit that proposes substantial changes to the proposed development that are deemed by the Executive Director to offer a high likelihood of success in preventing further exceedances of the dual metric exposure criteria.

- 3. Hydroacoustic Monitoring Plan.** NOT LESS THAN THIRTY (30) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION OF THE DEVELOPMENT AUTHORIZED BY COASTAL DEVELOPMENT PERMIT 1-19-0356, the applicant shall submit, for the review and written approval of the Executive Director, a Hydroacoustic Monitoring Plan.
- A. The plan shall be based on the “dual metric exposure criteria” set forth in Special Condition 2 above and shall state that exceedance of either criterion shall be deemed injurious or lethal to exposed fish and non-compliant with the conditions of the coastal development permit. Prior to submitting the plan to the Executive Director, the applicant shall submit copies of the plan to CDFW, USFWS, and NMFS for their review and consideration.
 - B. At a minimum, the plan shall include the following:
 - i. A description of the method of hydroacoustic monitoring that will continuously assess the actual conformance of the proposed pile driving with the dual metric exposure criteria up- and down-stream of the pile-driving locations on a real-time basis, including the field locations of hydroacoustic monitoring stations and the number, location, distances, and depths of hydrophones and associated monitoring equipment;
 - ii. Provisions to continuously record pile strikes in a manner that tracks the time of each strike, the number of strikes, and the interval between strikes;
 - iii. Provisions for real-time identification and reporting of any exceedance of the dual metric exposure criteria, clear action and notification protocols to stop pile driving in case of such exceedance, including the authority of the sound monitor to order pile driving to stop immediately, and procedures to notify pertinent parties including the Executive Director and other pertinent state and federal agencies immediately after any exceedance of the dual metric exposure criteria;
 - iv. Provisions for a monitoring and reporting program that includes daily summaries of the hydroacoustic monitoring results of pile driving to the Executive Director and to other agencies requesting such summaries, as well as more comprehensive summary reports on a monthly basis during pile installation work. The Executive Director may make a determination that the permittee may provide weekly, rather than daily reports, if monitoring results from the first few days of pile driving indicate that sound pressure levels at the closest hydrophone within the wetted slough channel are below both criterion of the dual metric exposure criteria (206 dB peak SPL and 187 dB cumulative SEL).

- C. The permittee shall undertake development in accordance with the approved final 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 amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

4. General Construction Responsibilities.

- A. The permittee shall undertake development in compliance with the following Avoidance and Minimization Measures (AMMs) and Best Management Practices (BMPs) proposed in the coastal development permit application, as modified herein:
 - i. Habitat avoidance: Areas where wetland and upland vegetation need to be removed shall be identified in advance of ground disturbance. Prior to commencement of demolition and construction activities, flagging shall be installed along the boundaries of all areas of Lyngbye's sedge to be avoided, and exclusionary fencing shall be installed around all other sensitive habitats to be avoided.
 - ii. Biological monitor: A qualified biologist shall monitor all in-water construction activities and be present during bridge demolition, dewatering activities, pile driving for bridge foundations, and concrete pours, to ensure adherence to all environmental permit conditions and avoidance and minimization measures during construction.
 - iii. Timing of work:
 - (a) In-water work and pile-driving shall only occur during the dry season from June 15 through October 31;
 - (b) To the maximum extent practicable, activities outside the slough channel that increase the erosion potential in the project area shall be restricted to the relatively dry summer and early fall period to minimize the potential for rainfall events to transport sediment to surface water features. In no case shall ground disturbance occur during periods of wet weather;
 - (c) Work within the slough channel shall be confined to the low-flow period; and
 - (d) Cofferdams shall be installed and removed during periods of low tide to minimize the potential for turbidity, erosion, and scouring.
 - iv. Invasive species control: All construction equipment shall be weed-free prior to entering the project site; mulches used in erosion control shall be weed-free; seed mixes used to revegetate the site shall be comprised of native species only; and any equipment (including boots/waders) involved in in-water work shall be properly cleaned according to guidance provided by the State of California Aquatic Invasive Species

Management Plan prior to in-water work to prevent the spread of aquatic invasive species.

- v. Erosion and sediment control:
 - (a) Prior to any clearing or grading activities, suitable sediment control BMPs such as silt fences, straw wattles, or catchment basins shall be placed downslope of all construction activities and at the edge of the slough channel to intercept sediment. Sediment control BMPs shall be monitored and maintained in good working condition until disturbed areas have been revegetated. Sediment built up at the base of BMPs shall be removed before BMP removal to avoid any accumulated sediments from being mobilized post-construction;
 - (b) If spoil sites are used, they shall be located such that they do not drain directly into any coastal waters and wetlands, if feasible. If a spoil site drains into a drainage course, catch basins shall be constructed to intercept sediment before it reaches the feature. Spoil sites shall be graded and vegetated with native species to reduce the potential for erosion;
 - (c) Weed-free mulch shall be applied within 10 days of completion of construction in those areas where subsequent ground disturbance will not occur for 10 calendar days or more, and, during the rainy season or if there is a greater than 50 percent possibility of rain within the next 24 hours, in all exposed areas upon completion of the day's activities; and
 - (d) Removal of the existing abutments and installation of new abutments shall occur within coffered work areas separated from the wetted channel.
- vi. Dewatering: Water removed from coffered work areas shall be pumped to a settling tank to allow sediment/fines to settle out, and shall be either trucked offsite to an authorized disposal site or discharged a sufficient distance from slough waters to protect the water quality of the slough. For water exposed to curing concrete, the pH shall be monitored, and the water shall not be discharged until it reaches safe levels.
- vii. Slough protection systems: A slough protection system shall be utilized during demolition of the existing bridge deck and during formation of the new deck (including during pouring the deck, spraying the deck with curing compound, joint seal, pouring the concrete curb barrier, and texturing the deck with grind and groove) to prevent debris, chemicals, and other pollutants from reaching the slough channel. The slough protection systems shall be designed, implemented, and maintained in a manner that prevents impacts to the slough channel.
- viii. Other spill and pollution prevention and mitigation measures:
 - (a) A site-specific spill prevention plan shall be implemented for potentially hazardous materials. The plan shall include the proper

handling and storage of all potentially hazardous materials, as well as the proper procedures for cleaning up and reporting any spills;

- (b) Fuels, lubricants, and solvents shall not be allowed to enter coastal waters or wetlands, and all equipment used during construction shall be free of leaks at all times. Equipment and hazardous materials storage, vehicle and equipment maintenance, lubrication, and fueling, and concrete washout shall be conducted on paved surfaces in a contained area at least 50 feet away from any drainage courses and storm drain inlets, if feasible (unless those inlets are blocked to protect against applicable pollutants), and shall not result in a discharge or threatened discharge to any coastal waters or wetlands;
- (c) No heavy equipment shall be driven into the slough channel or roadside wetlands;
- (d) Equipment shall use non-toxic vegetable oil for operating hydraulic equipment instead of traditional hydraulic fluids;
- (e) Plastic shall be placed under asphaltic concrete paving equipment while not in use, to catch and/or contain drips and leaks; and
- (f) Seal coat, tack coat, slurry seal, and/or fog seal shall not be applied if rainfall is predicted to occur during the application or curing period. Drainage inlet structures and manholes shall be covered with filter fabric during application of seal coat, tack coat, slurry seal, and/or fog seal.

B. The permittee shall also implement the following additional mitigation measures imposed by this coastal development permit that are necessary to protect coastal resources:

i. Erosion and sediment control:

- (a) 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) shall be avoided, to minimize the potential for wildlife entanglement and plastic debris pollution; and
- (b) If there is a greater than 50 percent possibility of rain within the next 24 hours, all stockpiled construction materials, soil, and other excavated materials shall be covered to prevent contact with rain, and surrounded by temporary perimeter barriers.

ii. Debris disposal: All construction and demolition debris and excavated spoils shall be properly contained, removed from the work site, and disposed of on a regular basis to avoid contamination of habitat and surrounding agricultural land during construction activities. Following

construction, all trash shall be removed from the work area and disposed of properly.

- iii. Other spill and pollution prevention and mitigation measures:
Cement/concrete shall be prepared and poured in a manner that will prevent uncured concrete or runoff from uncured concrete from entering coastal waters or wetlands. Such measures include, but are not limited to, installation of necessary containment structures to control the placement of wet concrete and prevent spills or overpours from entering coastal waters, and use of Baker Tanks to collect, test, and potentially treat contaminated dewatering effluent.

5. Final Erosion and Sediment Control and Pollution Prevention Plan. NOT LESS THAN THIRTY (30) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION OF THE DEVELOPMENT AUTHORIZED BY COASTAL DEVELOPMENT PERMIT 1-19-0356, the permittee shall submit, for the review and written approval of the Executive Director, an erosion and sediment control and pollution prevention plan.

- A. The plan shall demonstrate that temporary impacts to the biological productivity and quality of nearby coastal waters shall be minimized during demolition and construction activities consistent with the provisions of Special Condition 4.
- B. 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 (including silt fences, fiber rolls, 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 resulting from construction activities; and
 - iii. A schedule for the management of all construction-phase BMPs (including installation and removal, ongoing operation, inspection, maintenance, and training).
- C. The permittee shall undertake development in accordance with the approved final Erosion and Sediment Control and 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 amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

6. Debris Disposal Plan. NOT LESS THAN THIRTY (30) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION OF THE DEVELOPMENT AUTHORIZED BY COASTAL DEVELOPMENT PERMIT 1-19-0356, the permittee shall submit, for the review and written approval of the Executive Director, a plan

for the disposal of excess construction and demolition debris and excavated soils. The plan shall identify authorized disposal site(s) where materials will be lawfully disposed of on a regular basis and describe the manner and schedule by which the materials will be removed from the construction site. 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 amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

- 7. Post-Development Runoff Plan.** PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT 1-19-0356, the applicant shall submit, for the review and written approval of the Executive Director, a Post-Development Runoff Plan prepared by a qualified licensed professional.
- A. The plan shall demonstrate that runoff from the new bridge pavement is directed to BMPs on either end of the bridge that retain onsite the 85th percentile 24-hour storm volume, if appropriate and feasible. If there are no appropriate and feasible alternatives that would retain on-site the runoff produced by the 85th percentile 24-hour design storm, flow-based treatment control BMPs shall be utilized to remove pollutants of concern from the runoff, and shall be sized to treat, at a minimum, twice the runoff volume produced by the 85th percentile one-hour storm event. BMPs shall be maintained to ensure effective operation for the life of the development.
 - B. The plan shall include, at a minimum, the following required components:
 - i. A map, drawn to scale, showing the pavement footprint, runoff flow directions, and permanent infiltration or treatment BMP locations;
 - ii. A description of the post-development BMPs that will be implemented, including a schedule for installation;
 - iii. Supporting calculations demonstrating that required BMPs have been sized and designed to infiltrate, retain, or treat, at a minimum, the runoff produced by the 85th percentile 24-hour storm event for volume-based BMPs, or two times the 85th percentile 1-hour storm event for flow-based BMPs;
 - iv. A description and calculations demonstrating that the 85th percentile design storm runoff volume from the new bridge pavement will be retained on-site. If the 85th percentile runoff volume cannot be retained on site, an alternatives analysis shall demonstrate that no feasible alternative project design will substantially improve runoff retention; and
 - v. A description and schedule for the ongoing management of all post-development BMPs (including operation, maintenance, inspection, and training) that will be performed for the life of the development, if required for the BMPs to function properly.

- C. The permittee shall undertake development in accordance with the approved final Post-Development Runoff 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 amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.
- 8. Monitoring and Mitigation of Temporary Wetland Impacts.** Proposed new roadside ditches and surrounding wet meadow habitat impacted by project construction shall be revegetated with native wetland plants where bare ground is observed and shall be monitored for successful plant reestablishment one year following impacts. A monitoring report shall be submitted to the Executive Director by September 1st of that following year for review and written approval. If the monitoring report indicates that the revegetated wetlands do not have a similar vegetative density and cover to the surrounding wetlands, the permittee shall submit a revised or supplemental restoration program to mitigate for wetland impacts in kind and in place. The revised or supplemental restoration program shall be processed as an amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.
- 9. Protection of Special Status Salt Marsh Plants.** Impacts to Lyngbye's sedge (*Carex lyngbyei*) shall be avoided, minimized, and mitigated, and on-site mitigation shall be monitored, reported, and remediated in compliance with the permittee's "Restoration Plan," dated November 24, 2020, and prepared by Stantec Consulting Services Inc. (included as Exhibit 6). Within 30 days of planting of salvaged plants, documentation shall be provided to the Executive Director for review and written approval assessing the initial status of the "as built" mitigation in accordance with the permittee's 2020 Restoration Plan and the conditions of this coastal development permit. A monitoring report shall be submitted to the Executive Director for review and written approval by September 1st of each monitoring year following project completion, beginning the first year after the submission of the "as-built" assessment and continuing for a period of a minimum of three years after planting of salvaged plants and until all success criteria are met. Each report shall include a "Performance Evaluation" section where information and results from the monitoring program are used to evaluate the status of the mitigation in relation to the objectives and success criteria outlined in the 2020 Restoration Plan. If the final monitoring report indicates that the mitigation project has been unsuccessful, in part, or in whole, based on the approved objectives and success criteria, the permittee shall submit a revised or supplemental restoration program to compensate for those portions of the original program which did not meet the approved objectives and success criteria. The revised restoration program shall be processed as an amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.
- 10. Protection of Bird Nesting Habitat.** The permittee shall implement the bird nesting habitat protection measures proposed in the coastal development permit application for the development including, but not limited to, the following:

- A. Clearing of vegetation that may provide nesting habitat for sensitive avian species shall be avoided during the nesting season (March to mid-August) if feasible.
- B. If the nesting season cannot be completely avoided, a survey for nesting birds in and adjacent to the project construction area shall be conducted by a qualified biologist according to current CDFW protocols no more than seven days prior to the commencement of construction activities, and anytime construction activities have ceased for more than seven days.
- C. If any active nest is identified during preconstruction surveys, 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. Alternatively, the biologist and CDFW can develop and agree upon construction methods that will allow work to continue without disturbing an active nest. Active nests may not be removed until after the young have fledged (based on field verification). A qualified biologist shall monitor active nests for disturbance and evidence of fledging during construction. If evidence of disturbance to an active nest is observed as a consequence of construction activities, construction activities shall immediately cease until such time as the birds have fledged or construction protocol is revised so as not to disturb nesting birds or fledglings.
- D. PRIOR TO COMMENCEMENT OF CONSTRUCTION AUTHORIZED DURING THE AVIAN NESTING SEASON, the permittee shall submit, for the review and approval of the Executive Director, the survey required in subpart b above, including a map that locates any active nests identified by the survey and delineates any required construction-free buffer zone, and a narrative that describes proposed nesting bird disturbance avoidance measures.
- E. If it is not feasible to avoid bridge demolition during the avian breeding/nesting season, a qualified biologist shall remove any existing unoccupied and inactive nests from the existing bridge before March 1st of the construction year, and install a net exclusion device under the existing bridge that has been reviewed and approved by CDFW staff. If the existing bridge subsequently become occupied by an active nest, a bird survey shall be conducted by a qualified biologist to confirm that the young have fledged prior to commencement of construction.

11. Protection of Northern Red-legged Frogs (*Rana aurora*). The permittee shall undertake development in compliance with the following frog protection measures:

- A. No more than one week prior to commencement of ground disturbance within 100 feet of all suitable Northern red-legged frog habitat, a qualified biologist shall perform a pre-construction survey for the Northern red-legged frog and shall coordinate with CDFW staff to relocate any frogs that occur within the work impact zone to nearby suitable habitats.

- B. If a Northern-red legged frog is observed in an active construction zone, construction activities shall immediately halt in the vicinity until a biologist, in consultation with CDFW, has moved the frog to a safe location in similar habitat outside of the construction zone.

- 12. 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 geologic and flood hazards, including but not limited to ground shaking, scour erosion, tsunami inundation, and storm and tidal flooding, some of which will worsen with future 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.
- 13. Archaeological Resources Mitigation.** If an area of cultural deposits or human remains is discovered during the course of the project, all construction shall cease and shall not recommence until a qualified cultural resource specialist, in consultation with the Tribal Historic Preservation Officers of the Wiyot Tribe, the Bear River Band of Rohnerville Rancheria, and the Blue Lake Rancheria, analyzes the significance of the find and prepares a supplementary archaeological plan for the review and approval of the Executive Director, and either: (a) the Executive Director approves the Supplementary Archaeological Plan and determines that the Supplementary Archaeological Plan's recommended changes to the proposed development or mitigation measures are de minimis in nature and scope, or (b) the Executive Director reviews the Supplementary Archaeological Plan, determines that the changes proposed therein are not de minimis, and the permittee has thereafter obtained an amendment to Coastal Development Permit 1-19-0356.

IV. FINDINGS AND DECLARATIONS

A. Project Description and Background

The Humboldt County Department of Public Works proposes to remove and replace the Pine Hill Road bridge spanning Swain Slough approximately 0.5 miles due east of Highway 101 at the southern end of the City of Eureka in unincorporated Humboldt County. The existing bridge, constructed in 1955, is a two-lane, 63-foot long, 20-foot-wide, three-span bridge structure. The applicant is proposing to replace this structurally deficient and functionally obsolete bridge with an 80-foot-long, 34-foot-wide single-span

bridge on the same alignment. The proposed project also involves widening of the roadway approaches to the bridge (See Exhibit 3 for project plans).¹

Pine Hill Road is a 0.4-mile-long, local road that provides access across Swain Slough to agricultural lands and residential neighborhoods in the project vicinity. The road serves as an alternate, secondary route between Elk River Road and Meyers Avenue to the more heavily traveled Herrick Avenue. Swain Slough is a tidally influenced tributary of Elk River and Humboldt Bay.

The existing bridge is a three-span timber stringer structure with a concrete deck, concrete abutments, and two piers in the slough. The proposed bridge would be seventeen feet longer and would be a single-span precast concrete I-girder structure with no piers in the slough (See Exhibit 3 for construction plans). The existing bridge abutments constrict the slough channel and are protected by rock slope protection (RSP), while the new bridge abutments would be located outside of the channel and would be protected by sheet piling. The new design would result in the removal of 35 cubic yards of abutment and piers from the slough and an overall channel widening of seven feet at the bridge site, resulting in the creation of 161 square feet of additional slough channel.

The existing bridge has a 19-foot-wide clear width with six-inch-wide railing on each side (for a total width of 20 feet). To meet current safety standards, the proposed new bridge would be fourteen feet wider than the existing bridge, and would provide two 10-foot-wide traffic lanes and 5-foot-wide shoulders, in addition to two-foot-wide barrier rails along both sides (for a total bridge width of 34 feet). The existing bridge's railing is comprised of painted white timbers without end protection at the bridge corners, while the proposed bridge would have concrete bridge railing with end protection [see Findings Section I (Visual Resources) for more information on the bridge railing].

Pine Hill Road is approximately 19 feet wide west of the existing bridge and 22 feet wide east of the bridge, so the roadway approaches would need to be widened to conform to the proposed new bridge. The proposed roadway approaches would have 10-foot-wide paved lanes, 5-foot-wide paved shoulders, and a 2-foot-wide gravel choker. The length of roadway proposed to be modified on the west side of the bridge is approximately 260 feet long, with the first 200 feet widened to the full 30-foot-width and the remaining 60 feet tapered to the existing 19-foot-width. The length of roadway proposed to be modified on the east side of the bridge is approximately 234 feet long, with the first 167 feet widened to the full 30-foot-width and the remaining 67 feet tapered to the existing 22-foot-width.

¹ In anticipation of this project, a waterline that is attached to the outside edge of the existing bridge will be relocated under the roadway prior to commencement of construction of the proposed development (this waterline relocation was authorized under CDP Waiver 1-20-0140-W, reported to the Commission in March 2020).

Setting

The Pine Hill Road bridge over Swain Slough is located at the northern end of the lower Elk River Valley's agricultural bottomlands and is surrounded by grazing land to the northwest, southwest, and southeast (See Exhibit 2). A channelized reach of Martin Slough runs parallel and adjacent to Pine Hill Road on the agricultural land to the southeast of the bridge. To the northeast of the bridge, a hillslope vegetated with riparian habitat leads up to a residential neighborhood on the bluff above. Three residences occupy the base of the bluff (northeast of the bridge) further east on Pine Hill Road. Humboldt County's certified Local Coastal Program (LCP) designates an urban-rural boundary along this northeast corner of the bridge, separating the residential development to the northeast from the agricultural river floodplain below.

Tidally influenced Swain Slough is approximately 60 to 80 feet wide with an unvegetated mud bottom except near the banks, where it is vegetated with salt marsh habitat along the ordinary high water mark (OHWM). This habitat is dominated by both the rare plant species Lyngbye's sedge (*Carex lyngbyei*) and the highly invasive species dense-flowered cordgrass (*Spartina densiflora*). The aquatic habitat in Swain Slough supports anadromous, estuarine, and freshwater fish species, including federally and/or state-listed coho salmon (*Oncorhynchus kisutch*), Chinook salmon (*O. tshawytscha*), steelhead (*O. mykiss*), longfin smelt (*Spirinchus thaleichthys*), and tidewater goby (*Eucyclogobius newberryi*). Swain Slough empties into Elk River approximately one-half-mile downstream of the bridge site, which in turn empties into Humboldt Bay approximately 1.5 miles further downstream.

Swain Slough drains all of the Martin Slough watershed (5.2 square miles) as well as a small watershed on the east side of the lower Elk River Valley (for a total area of 5.5 square miles). Martin Slough empties into Swain Slough through a tidegate on the agricultural land directly to the southeast of the subject bridge. This tide gate structure was installed in 2014 as part of the State of California's Martin Slough Enhancement Project (replacing three aging culverts and flap gates), and is currently managed to allow partial tidal influence in

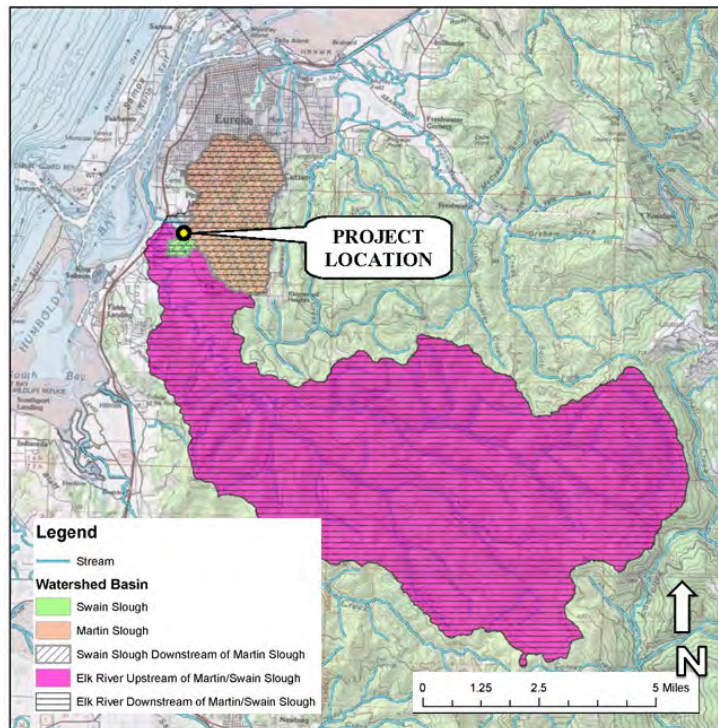


Figure 1. Watershed Map (from November 2015 Bridge Design Hydraulic Study Report).

Martin Slough.² The proposed bridge replacement would avoid any temporary or permanent encroachment onto Martin Slough's banks or channel.

The agricultural fields on three sides of the bridge are designated and zoned by the County as Agriculture Exclusive and consist of wet meadow habitat that experiences seasonal inundation. These fields are dominated by non-native plant species and are largely flat but include several irrigation/drainage ditches and large wallows (depressions created by grazing activity).

The roadway west of Swain Slough includes the paved road surface, the shoulders, and ditches on either side of the road. The road base is elevated several feet above the adjacent coastal plain, while the ditches are excavated to a depth several feet below the plain. Barbed-wire fence is constructed at the outer edges of the Pine Hill Road easement, and there is a slight rise between the roadside ditches and the wet meadow that is dominated by upland vegetation.

The project area is in the floodplain, and although low earthen levees have been constructed along the banks of Swain Slough, notches/failures in the unmaintained levees result in periodic flooding of the coastal plain and Pine Hill Road west of the bridge during winter when there are king tides and/or during periods of high precipitation. As a result of this seasonal backwater flooding, salt marsh vegetation is prevalent in the roadside ditches to the west of the slough and in ditches and depressions on the surrounding agricultural land.

Demolition & Construction Process

It is anticipated that excavators, dozers, cranes, dump trucks, concrete trucks, concrete pumps, pile-driving hammers, and pile drilling equipment may be required to remove the existing bridge and construct the new bridge. Construction is anticipated to begin in June and be completed in October of the same year. During construction, Pine Hill Road would be closed with a detour, which will allow the paved approach roadways to be used as construction staging areas instead of the adjoining agricultural areas [See Findings Section J (Public Access) for more information on the detour]. All work would be performed without the need for heavy equipment to enter the slough or roadside wetlands. Temporary barriers to intrusion (e.g., exclusionary fencing) would be placed at the edge of the verified wetland boundaries to ensure that construction equipment and access do not encroach into wetlands.

The existing bridge, including decking, abutments, and piers, would be removed and disposed of offsite to allow the construction of the new structure. Prior to bridge removal, a slough protection system would be suspended from the existing bridge to prevent demolition debris from falling into the slough. Concrete decking would be sawn into blocks and timber stringers would be cut, and both would be removed with a crane

² The Martin Slough Enhancement Project was approved by the Coastal Commission under CD-021-13, CDP 1-16-1110, and CC-0003-17.

working from the road shoulder. Once the deck is removed, the two in-channel reinforced concrete piers would be removed during low tide by excavating around each pier, pulling each pier over with an excavator, breaking it off below the mud line, and removing it from the slough channel. Voids in the slough channel would be backfilled with native sediment or clean gravel. RSP for the existing bridge as well as miscellaneous trash and debris would be removed from the channel at low tide using an excavator and crane. Workers on foot would enter the channel and load the debris into a crane basket or use a choker to fasten to the larger debris.

Next, a row of sheet piles would be installed around the two existing bridge abutments to isolate the construction area from the wetted channel. Sheet piles would be vibrated into the Swain Slough channel during the latter one-third of the outgoing tide and beginning one-third of the incoming tide. Once isolated from the wetted channel, the bridge abutments would be removed using an excavator and excavator-mounted hoe ram.

Once the existing abutments are removed, permanent sheet pile walls would be vibrated into place outside the slough channel to protect the front face (slough side) as well as the north and south sides of the new abutments. The permanent sheet piles would also act as a cofferdam during construction of the new abutments, preventing contamination of the slough during excavation of sediments and curing of seal course and footing concrete. The temporary sheet piles would be removed once the permanent sheet piles are installed.

Next, bank material would be excavated to the depth of the new abutment footing. This excavation would require dewatering groundwater from the work areas.

The new abutment footings would be constructed on driven piles. Construction of the new bridge would begin with the installation of 22 cast-in-steel-shell (CISS) concrete piles within the dewatered areas to support the two bridge abutments (11 piles per abutment). The 100-foot-long, 24-inch-diameter steel pipe pile casings would be vibrated into place and then driven with an impact pile driver.

Within the dewatered areas, cobble and gravel work platforms would be constructed around the base of the piles to provide a stable base for workers and to control water seepage. If the platforms do not provide sufficient work area or control water seepage, a concrete seal course would be poured around the base of the CISS piles to prevent groundwater from entering the excavation. Once the concrete has cured, the water sitting on the concrete would be pumped to a settling tank and would not be discharged until the pH reaches safe levels. Finally, each abutment's footing would be formed and poured, followed by the stem and backwall. See Exhibit 3, Page 14 for a visual of the steps of existing abutment removal and new abutment installation.

Once the abutments are formed, the new bridge deck would be installed. The bridge deck construction would not require falsework or temporary supports in the channel. Bridge deck construction would begin with the installation of precast/prestressed I girders. The girders would be placed by a crane staged behind the new westerly

abutment and would span the slough. Once the girders are in place, deck forms would be constructed between the girders, deck reinforcing steel would be placed on the newly constructed forms, and the new concrete deck would be cast. After the deck is poured, the concrete barrier would be formed and poured and then the steel metal rails would be bolted into place. All work would occur from the top of the girders, and no access down to the channel would be required. A slough protection system would be installed beneath the girders and forms to catch leaking concrete during concrete pours.

After the new bridge is installed, roadway approaches consisting of up to 3.5 feet of fill would be built. First the road drainage systems would be installed, then the road base, followed by the asphalt concrete. Finally, barrier railings, striping, signs, and fencing would be placed, and the detour would be removed.

The proposed widening of the western roadway approach would result in filling portions of the existing roadside ditches. The applicant proposes to reestablish new, wider ditches adjacent to the widened roadway, resulting in the creation of 1,912 square feet of additional vegetated ditch. The fence lines that separate the right-of-way from the adjacent agricultural fields would be moved five to ten feet into the fields to accommodate the wider road and ditches [See Findings Section G (Agricultural Resources) for more information on this encroachment].

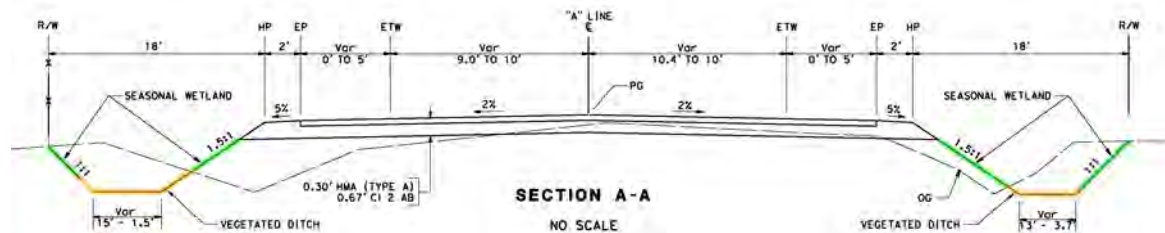


Figure 2. Section Showing Proposed Changes to the Western Roadway Approach.

B. Standard of Review

The roadway west of the bridge where staging and stockpiling is proposed is within the County of Humboldt's coastal development permitting (CDP) jurisdiction. The remainder of the project, including the bridge replacement and approach widening, is located within the Commission's retained CDP jurisdiction.

Section 30601.3 of the Coastal Act authorizes the Commission to process a consolidated CDP application when requested by the local government and the applicant and approved by the Executive Director for projects that would otherwise require CDPs from both the Commission and from a local government with a certified LCP. In this case, the County, as applicant and local government with CDP jurisdiction, has requested a consolidated permit process in a letter to the Commission dated June 18, 2019. The Executive Director has agreed to the consolidated permit processing request.

The policies of Chapter 3 of the Coastal Act provide the legal standard of review for a consolidated CDP application submitted pursuant to section 30601.3. The local government's certified LCP may be used as guidance.

C. Consultations and Other Agency Approvals

Humboldt Bay Harbor, Recreation, and Conservation District (Harbor District)

The Harbor District has permit jurisdiction over all the tidelands and submerged lands of Humboldt Bay, including Swain Slough, a tidally influenced slough that drains to Humboldt Bay via the Elk River. The Board of Commissioners of the Harbor District approved Permit No. 2020-01 for the subject development on February 27, 2020.

California Department of Fish and Wildlife (CDFW)

CDFW has regulatory jurisdiction over the development pursuant to the California Fish and Game Code and the California Endangered Species Act. CDFW approved Lake and Streambed Alteration Agreement #1600-2018-0449-R1 for the proposed project on January 28, 2021.

North Coast Regional Water Quality Control Board (Regional Board)

The Regional Board requires water quality certification for projects involving dredging and/or filling activities under section 401 of the Clean Water Act. On March 4, 2020, the Regional Board certified the subject project (WDID No. 1B190046WNHU).

U.S. Army Corps of Engineers (ACOE)

ACOE has regulatory authority over the proposed development under section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 1344) and section 404 of the Clean Water Act. On February 26, 2021, ACOE issued a verification letter stating that the project qualifies for authorization under Department of the Army Nationwide Permit 3 for Maintenance.

National Marine Fisheries Service (NMFS)

An Endangered Species Act Concurrence under the federal Endangered Species Act and an Essential Fish Habitat Consultation under the Magnuson-Stevens Act is required for the project. On September 25, 2015, NMFS issued a biological opinion that the action, as proposed, is not likely to result in jeopardy to Southern Oregon/Northern California Coast coho salmon, California Coastal Chinook salmon, and Northern California steelhead, or destruction or adverse modification of their critical habitats. When the biological opinion was first published, NMFS expected the proposed action would result in incidental take of coho salmon, Chinook salmon, and steelhead, and an incidental take statement was included with the biological opinion. Since the biological opinion was published, the applicant modified the project to stop pile driving before reaching cumulative sound pressure levels that could injure salmonids and to eliminate their original proposal for fish capture and relocation. NMFS now concludes that injurious and/or lethal take of salmonids will be avoided. Because adverse effects are less than originally proposed, NMFS did not need to reinstate consultation to change the biological opinion (Mike Kelly, personal communication, December 1, 2020).

United States Fish & Wildlife Service (USFWS)

A section 7 Consultation is required for incidental take of any listed species under the federal Endangered Species Act. USFWS issued a “No Jeopardy” opinion and Incidental Take Statement for the tidewater goby on September 24, 2015 for the subject project. According to USFWS, the project would only potentially impact migrating adult gobies because the slough proper is not considered suitable goby nesting habitat. The USFWS expects no more than five adult gobies to be injured or killed as a result of constructing the project. In late December 2019, USFWS staff indicated that minor changes in the project description that had occurred since 2015 did not require reinitiating section 7 consultation and the 2015 biological opinion remains valid (Gregory Schmidt, communication with County staff, December 20, 2019).

California State Lands Commission

State Lands Commission staff determined that a State Lands lease or other approval is not required for the project (Reid Boggiano, communication with County staff, July 2, 2019).

D. Marine Resources and Water Quality

Section 30230 of the Coastal Act states:

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:

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.

The development involves work in and/or adjacent to tidally influenced sloughs (Swain Slough and Martin Slough), roadside ditches, and grazed seasonal wetlands that could impact marine resources and the biological productivity and quality of coastal waters and wetlands. Marine organisms that could be impacted include federally and/or state-listed fish that could be harmed, injured, or killed by exposure to hydroacoustic noise generated during pile driving. Fish and other marine organisms could also be indirectly affected if construction activities and/or post-construction stormwater management

result in degradation of aquatic habitat and water quality. Avoidance, minimization, and mitigation measures for these potential impacts are discussed below.

Hydroacoustic Impacts

To create foundations for the new bridge abutments, the applicant proposes to install twenty-two, twenty-four-inch-diameter steel pile casings through bay muds and silts below the groundwater elevation to a depth of approximately 100 feet (eleven piles per abutment). The applicant proposes to first vibrate the piles into place and then drive the piles with an impact pile driver. The applicant estimates that it will take a maximum of twenty-four days to drive all twenty-two piles. Temporary sheet piles proposed during construction (for cofferdams) and permanent sheet piling proposed to protect the new abutments from scour will both be installed with a vibratory hammer and will not require use of an impact pile driver.

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.³ The proposed pile driving has the potential to impact five federally and/or state-listed species of fish that may occur in Swain Slough in the project vicinity: coho salmon, Chinook salmon, steelhead, longfin smelt, and tidewater gobies.

According to the USFWS consultation, the project area contains only unsuitable or marginally suitable tidewater goby habitat, and, therefore, potential impacts to gobies would be limited to gobies that are temporarily occurring within Swain Slough and not to nesting adult gobies, nest burrows, or eggs. The applicant proposes to restrict all in-water work and pile driving to June 15th through October 31st, the period of the year when the fewest number of tidewater gobies are expected to occur in the project area (due to higher salinities and tidal fluctuations). **Special Condition 4(A)(iii)** limits the timing of in-water construction accordingly.

According to the biological opinion prepared by NMFS, the silty and brackish habitat in the project area is also not suitable for salmonid spawning and provides only marginal rearing and migratory habitat for salmonids. Nevertheless, juvenile coho salmon, Chinook salmon, and steelhead may rear in the action area during summer months, which overlaps with the proposed construction period.

To reduce the transmission of sound waves through water, pile-driving activities will occur behind cofferdams, when the tide is out and water depths in the slough are near their minimum (between the latter third of the outgoing tide and beginning third of the incoming tide). Depending on tidal conditions, piles nearest the channel will be driven approximately nine to twenty-five feet from the water's edge.

³ The acoustic effects of use of a vibratory hammer are expected to be less than the effects of impact pile driving.

The applicant proposes real-time hydroacoustic monitoring to collect data on underwater noise levels during installation of both the sheet piles and steel shell piles. The applicant has indicated that an underwater noise monitoring plan, detailing monitoring locations, methods, and schedules, will be prepared and submitted to the appropriate agencies prior to project construction.

Underwater sound impacts can be measured by “peak sound pressure level (SPL),” the maximum absolute sound pressure generated during a single pile strike, and “cumulative sound exposure level (SEL),” an estimate of the total underwater sound energy a fish may be exposed to through a pile-driving event (i.e., one day of pile driving). NMFS, USFW, and CDFW currently use a “dual metric exposure criteria” of 206 decibel (dB) peak SPL for any single strike and a cumulative SEL of 187 dB as thresholds to correlate physical injury to fish greater than two grams in size exposed to underwater sound produced during the installation of piles with impact hammers.⁴ Both peak SPL and cumulative SEL are considered because exposure to either high levels of sound for a short period of time or lower levels of sound for a relatively long period of time can impact fish.

To ensure that lethal injury to fish is avoided during pile installation, the Commission attaches **Special Conditions 2 and 3**. Special Condition 2 requires the cessation of pile-driving activities before sound levels reach either of the dual metric exposure criteria in the wetted slough channel. In the event of an accidental exceedance of either criterion of the dual metric exposure criteria in conflict with the aforementioned standard, Special Condition 2 requires that pile-driving operations stop immediately and not recommence until additional sound attenuation or other measures are deployed that are deemed likely by qualified technical experts to return the pile driving to conformance with the dual metric exposure criteria.

Special Condition 3 requires the applicant to submit, for the review and approval of the Executive Director, a plan for hydroacoustic monitoring detailing the methods that will allow continuous, real-time assessment of the actual conformance of the proposed pile driving with the dual metric exposure criteria, and the protocols that will be in place to identify and stop pile driving immediately and notify pertinent parties in the case that the thresholds set in Special Condition 2 are exceeded. Special Condition 3 also requires the applicant to provide summary reports of the hydroacoustic monitoring results to the Executive Director.

⁴ Because of the many variables involved, it has been difficult for the various regulatory agencies to estimate fisheries impacts and set standards with regards to pile driving. In order to improve and coordinate information, Caltrans, in coordination with the Federal Highways Administration and the departments of transportation in Oregon and Washington, established a Fisheries Hydroacoustic Working Group including representatives from NMFS, USFW, CDFW, and ACOE. The working group established interim standards that indicate the sound exposure levels at which fish are likely to receive lethal physical injury. These are the standards the Coastal Commission is currently using.

The Commission finds that based on the proposed avoidance, minimization, and monitoring measures and the attachment of Special Conditions 2 and 3, the development as conditioned will not generate noise levels that could harm the sloughs' fish population; and, therefore, the proposed project as conditioned will protect fish consistent with the requirements of Coastal Act sections 30230 and 30231.

Construction-related Impacts to Aquatic Habitat and Water Quality

Proposed construction and demolition activities could potentially result in the degradation of aquatic habitat and water quality due to erosion, runoff of sediments and other pollutants, and accidental leaks and spills. To avoid such impacts, the applicant proposes a number of erosion and sediment control and pollution prevention measures that have been incorporated into **Special Condition 4**. Among other erosion, runoff, and sediment control Best Management Practices (BMPs), the applicant proposes to limit in-water work to the dry season and limit activities outside the slough channel that increase erosion potential to the dry season to the maximum extent feasible; install suitable BMPs such as silt fences, straw wattles, or catchment basins downslope of all construction activities and at the edge of the slough channel to intercept sediment; and apply weed-free mulch in exposed areas after completion of construction or upon completion of the day's activities during the rainy season or when rain is forecast (See Exhibit 3, Page 11 for the applicant's proposed erosion control plan). To further avoid erosion, runoff, and sedimentation impacts, Special Condition 4 also requires avoiding ground disturbance during periods of wet weather; monitoring and maintaining all sediment control measures in good working condition until disturbed areas have been revegetated; and covering and surrounding all stockpiles if rain is forecasted.

Spill prevention measures that have been proposed by the applicant and included in Special Condition 4 include operating heavy equipment from upland areas only; using non-toxic vegetable oil for operating hydraulic equipment instead of traditional hydraulic fluids; placing plastic under asphaltic concrete paving equipment while not in use to catch and/or contain drips and leaks; covering inlet structures and manholes with filter fabric during application of seal coat, tack coat, slurry seal, and/or fog seal, and prohibiting application if rainfall is predicted during the application or curing period; installing a slough protection system beneath the existing bridge deck during demolition to prevent debris from falling into the slough; installing a slough protection system beneath the I-girders and forms of the new bridge to catch leaking concrete during the deck pour; and implementing a site-specific spill prevention plan that addresses proper handling and storage of all potentially hazardous materials and proper procedures for cleaning up and reporting any spills. To further minimize the chance of debris, chemicals, and other pollutants from entering coastal waters and wetlands, Special Condition 4 also requires maintaining the slough protection system in place throughout formation of the new bridge deck, including during spraying the deck with curing compound, sealing of joints, pouring the concrete curb barrier, and texturing the deck with grind and groove; and conducting equipment and hazardous materials storage, vehicle and equipment maintenance, lubrication, and fueling, and concrete washout on paved surfaces in a contained area at least 50 feet away from drainage courses and

storm drain inlets, if feasible (unless those inlets are blocked to protect against applicable pollutants).

Construction activities also include dewatering in coffered work areas, including removal of water that is exposed to curing concrete. The applicant proposes to pump water out of the shoring system into a settling tank (Baker Tank), and subsequently discharge the water into roadside ditches once the sediment/fines have settled out. For water exposed to curing concrete, the applicant proposes to monitor the pH and not discharge the water from the settling tank until it reaches safe levels. These measures are incorporated into Special Condition 4, and Special Condition 4 specifies that water from the proposed de-watering settling tank must be discharged a sufficient distance from slough waters to ensure protection of the water quality of the sloughs.

Many of the water quality BMPs proposed by the applicant lack specificity as to the type and location of measures to be employed. For example, the application does not specify the type or location of sediment control BMPs to be deployed downslope of all construction activities and at the edge of the slough channel; the type of slough protection systems that will be installed under the existing and proposed bridge decks to prevent debris, chemicals, and other pollutants from entering the slough; or the specific locations of staging and stockpiling areas, vehicle and equipment maintenance and fueling areas, concrete washout activities, or dewatering facilities. Therefore, the Commission attaches **Special Condition 5** requiring that a final erosion and sediment control and pollution prevention plan be submitted to the Executive Director prior to commencement of construction that includes a construction site map identifying the location of all aforementioned BMPs and construction activities, a narrative description of the BMPs to be implemented, and a schedule for the management of all BMPs.

Finally, a number of project components will generate debris and/or excess spoils, including demolition of the existing bridge and excavation of new, wider roadside ditches. The applicant has indicated that all excess debris will be disposed of at an approved upland location. To ensure that waste and debris generated by the development will be properly handled and disposed of in a manner that protects water quality and aquatic resources, **Special Condition 6** requires submittal of a final debris disposal plan for the Executive Director's review and approval prior to commencement of construction.

With the incorporation of Special Conditions 4, 5, and 6, the Commission finds that proposed demolition and construction activities will maintain the biological productivity and quality of coastal waters consistent with the requirements of Coastal Act sections 30230 and 30231.

Post-construction Stormwater Management

Drainage along the north side of Pine Hill Road east of the bridge generally flows to the northeast corner of the bridge and into Swain Slough. At the southeast corner of the bridge, runoff currently sheet flows off the roadway and into Martin Slough. West of the bridge, water currently flows into the field southwest of the bridge through a breach in the levee and flows towards the bridge. A portion of the flow crosses into the northwest

field via an existing drainage pipe under the bridge approach, and a portion overtops the road at the midpoint between the Swain Slough Bridge and Elk River Road. The water then flows to a depressed area along the northwest levee before re-entering Swain Slough midway between the Swain Slough Bridge and the Elk River Road Bridge.

Post-construction, the applicant proposes to generally retain the existing drainage patterns of the project site (See Exhibit 3, Pages 6-8 for proposed post-construction stormwater management). On the northeastern side of the bridge, the applicant proposes to regrade the existing roadside ditch and add a new pipe and energy dissipating device to enhance the system. On the western side of the bridge, the applicant proposes to replace the drainage pipe beneath the bridge approach in-kind and significantly widen the roadside ditches (1,912 additional square feet of vegetated ditch). The proposed enlargement of the roadside ditches west of the bridge may help provide additional infiltration and flow attenuation as they convey runoff to the nearby slough. The proposed bridge will be lined by curbs (for the guard rails) that will prevent runoff from sheet flowing off the bridge directly into the slough and will instead direct runoff from the bridge to the roadside ditches.

To maintain and enhance the biological productivity and quality of Swain Slough, runoff from the new bridge pavement should be treated to remove pollutants of concern, and the development should retain onsite the 85th percentile 24-hour design storm volume, if appropriate and feasible. Infiltration BMPs may be infeasible given the high water table and poor drainage in the vicinity. If infiltration BMPs are infeasible, flow-based treatment control BMPs should be installed to remove pollutants of concern from the runoff. To ensure these standards are met, the Commission attaches **Special Condition 7** requiring submittal of a post-development runoff plan for the Executive Director's review and approval.

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 as mandated by the requirements of Coastal Act sections 30230 and 30231.

E. Wetland Fill

Coastal Act section 30233 provides, in applicable part:

- (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:
 - (1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.
 - (2) Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.

- (3) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.
 - (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.
 - (5) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.
 - (6) Restoration purposes.
 - (7) Nature study, aquaculture, or similar resource dependent activities.
- (b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for these purposes to appropriate beaches or into suitable longshore current systems.
- (c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary...

A wetland delineation for the subject development was originally conducted in July 2013 and updated in August 2019. Wetlands in the project area include the vegetated ditches along the roadside, the seasonal wetlands in the adjacent agricultural fields, and the banks and channels of Swain and Martin Sloughs (See Exhibit 4 for a wetland delineation map). Coastal Act section 30108.2 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."

The applicant proposes to remove the existing abutments (20 cubic yards of material) and bridge piers⁵ (15 cubic yards of concrete) from the Swain Slough channel. The applicant also proposal to remove 10 cubic yards of debris located within the slough channel within the footprint of the new bridge. In total, 45 cubic yards of material will be removed from the slough channel.

⁵ Eight individual columns at one square foot each.

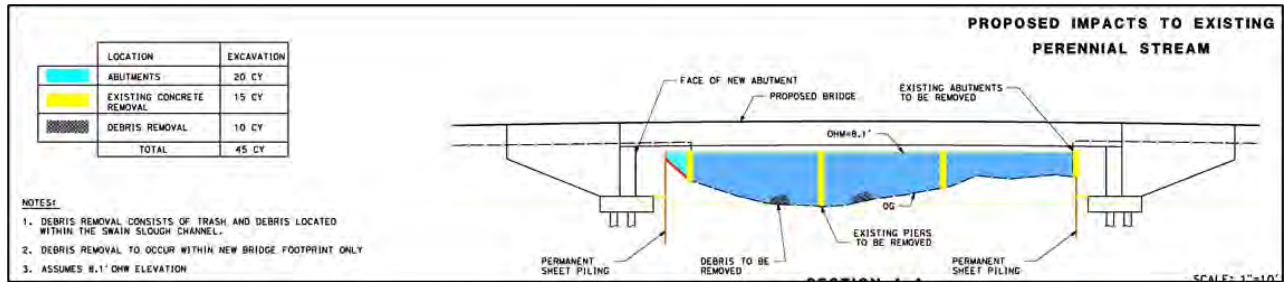


Figure 3. Cross-Section of Excavation in Slough Channel.

The proposed new abutments and protective sheet piling will be placed outside of the current channel and the proposed new bridge will be a single-span structure with no piers in the slough. As a result, the proposed development will create 161 square feet of additional perennial stream.

The proposed development will also widen the roadside ditches on the western roadway approach partially using uplands that exist along the current fence lines north and south of the roadway, resulting in the creation of 1,912 square feet of additional vegetated ditch (See Exhibit 5 for a map showing post-construction wetland/stream creation).⁶

Although the proposed development will result in a permanent net gain in wetlands and coastal waters, the development requires dredging and filling in wetlands along the banks and channel of Swain Slough, the vegetated ditches along the roadside, and seasonal wetlands in the adjacent agricultural fields.

Pursuant to Coastal Act section 30233, the diking, filling and dredging of wetlands (a) is limited to seven specific uses and must (b) be the least environmentally damaging feasible alternative, and (c) provide feasible mitigation measures to minimize adverse environmental effects. A project must meet all three of the above tests to be authorized pursuant to section 30233(a). In addition, under section 30233(c), such activities must maintain or enhance the functional capacity of the wetlands.

Allowable Use

The proposed dredging (excavation) and filling in wetlands are allowable under section 30233(a)(4) of the Coastal Act as an “incidental public service purpose.” The proposed dredging and filling are being undertaken by a public agency to improve a public roadway and therefore have a public service purpose. The proposed dredging and filling are necessary to replace a structurally deficient and functionally obsolete roadway bridge with a new bridge that will improve the function and safety of the existing roadway. The development will not add vehicular lanes or a new route or otherwise increase vehicular capacity. Therefore, the proposed dredging and filling are necessary

⁶ In order to widen the roadway approach and roadside ditches west of the bridge, the applicant proposes to move the fence lines that delineate the northern and southern edges of the roadway easement five to ten feet into the adjacent fields to the north and south of the road. No wetland loss is expected as a result of this movement because old posts will be removed and replaced in kind (in number and size).

for a public safety project incidental to the primary transportation service of the existing road.⁷ Thus, the Commission finds that the proposed dredging and filling are for an incidental public service purpose, an allowable use pursuant to Coastal Act section 30233(a)(4).

Alternatives Analysis

For developments involving diking, dredging, and filling of wetlands, the Commission must ensure that the proposed development has no feasible less environmentally damaging alternative. 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) retrofitting the existing bridge; (3) alternative alignment of the bridge; (4) alternative bridge designs, including a narrower or shorter bridge and alternative abutment protection; and (5) alternative construction methods.

No project alternative

The “no project” alternative means that no repairs or improvements would be made to the existing 65-year-old bridge. A 2011 California Department of Transportation (Caltrans) inspection report recommended that the bridge be replaced. According to the inspection, the exterior timber girders, timber sill plates, timber stringers, and timber railing are deteriorating and are showing signs of rot, and there are moderate to severe vertical cracks in most of the concrete piles. The bridge also does not meet current seismic design and performance standards and is located within one of the most seismically active areas of the state. Under the “no project” alternative, the existing bridge would continue to deteriorate, resulting in a safety hazard for road users. Although the “no project” alternative would avoid the adverse impacts to coastal resources that are posed by the bridge replacement project, this benefit would disappear when the existing bridge ultimately fails. A collapsed bridge could crush vegetation, damage the slough banks and channel, and spread debris within the slough, adversely affecting riparian and aquatic habitat and water quality. In addition, bridge failure could result in the need for emergency replacement of the bridge, and the subject construction could potentially result in greater damage to the wetland resources of Swain Slough; for example, such emergency work may not align with the timeframe that is optimal for the protection of tidewater gobies. Therefore, the no project alternative is not a feasible less environmentally damaging alternative to the proposed development, as conditioned.

Retrofitting the existing bridge

As discussed above, the latest bridge inspection report notes the deteriorating condition of the existing bridge with moderate to severe vertical cracking on concrete pile

⁷ The Commission has in many past actions, including for bridge replacement projects, made a similar determination that dredging and fill for road safety improvement projects that do not increase vehicular capacity is an “incidental public service” pursuant to Coastal Act section 30233(a)(4).

supports. According to the applicant, retrofitting this structure would require repair and likely replacement of the existing abutments and intermediate supports, which are located directly in the limits of the slough. Installing replacement supports within the channel would significantly increase the environmental impacts of the project, including additional hydroacoustic impacts on fish and more fill. In addition, the existing bridge is too narrow for the design speed and current traffic volumes, and the existing bridge's short length results in its abutments constricting the slough channel. Therefore, retrofitting the existing bridge is not a feasible less environmentally damaging alternative to the proposed development, as conditioned.

Alternative alignment of the bridge

The proposed development maintains the existing road alignment. The western roadway approach is surrounded to the south and north by farmed wetlands. The eastern roadway approach is located directly north of Martin Slough and south of riparian vegetation along the toe of a bluff. In addition, the banks of the slough surrounding the bridge abutments support saltmarsh habitat with populations of Lyngbye's sedge, a rare plant. Moving the alignment upstream or downstream would thus result in significantly greater impacts to wetlands, slough channels, riparian habitat, and rare plants than utilizing the existing alignment of the roadway and bridge built on previously filled wetlands. Changing the bridge alignment would also increase the amount of time it would take to complete construction, prolonging temporary construction impacts. Therefore, an alternative bridge alignment is not a feasible less environmentally damaging alternative to the proposed development, as conditioned.

Alternative bridge designs, including a narrower or shorter bridge and alternative abutment protection

The proposed new bridge will be seventeen feet longer than the existing bridge and will be a single-span bridge replacing the existing three-span bridge with two piers in the slough channel. The longer, single-span bridge does not require any supports below the OHWM of the slough and therefore minimizes wetland fill impacts.

The applicant originally proposed to use RSP to protect the new bridge abutments which would have resulted in fill in the existing stream channel. The applicant is now proposing to protect the new abutments with a permanent sheet piling system which will eliminate any encroachment into the current slough channel. According to a biological assessment prepared for the project in 2015, the existing bridge abutments constrict the channel and may influence geomorphic conditions in the area. The width between the existing bridge abutments is approximately 58.5 feet, while the width between the proposed sheet pile protected abutments will be 65.5 feet, resulting in an overall channel widening of seven feet.⁸ Therefore, the proposed use of sheet piling protection minimizes wetland fill impacts.

⁸ The channel will be widened 1.7 feet on the easterly bank and 5.3 feet on the westerly bank.

The proposed new bridge and roadway approaches will be 14 feet wider than the existing bridge and road, which will result in additional shading impacts from the bridge deck on Swain Slough and encroachment into farmed wetlands located to the north and south of the western roadway approach. According to the applicant, the proposed 10-foot-wide lanes and 5-foot-wide shoulders are the minimum width that meets the design standards when considering the road's functional classification (local road), 35-mile-per-hour design speed, and flat terrain.⁹ The 5-foot-wide shoulders and 2-foot-wide barrier rails are necessary to safely accommodate bicyclists and pedestrians. The applicant is proposing 1.5:1 side slopes for the embankment of the western roadway approach to further reduce impacts to adjacent wetlands and farmlands (typical embankment slopes are 4:1). For all the reasons described above, narrowing the bridge or bridge abutments further is infeasible.

Therefore, an alternative design is not a feasible less environmentally damaging alternative to the proposed development, as conditioned.

Alternative construction methods

The proposed construction methods minimize construction and demolition activities in wetlands. The applicant is proposing to close Pine Hill Road for one construction season to replace the bridge on its existing alignment. Closing the 0.4-mile-long road in its entirety allows staging and stockpiling and heavy equipment access to occur on the developed right-of-way, resulting in significantly fewer impacts to the surrounding wetlands. Heavy equipment will remain on the roadway and road shoulder, and no heavy equipment will enter wetlands. Prior to commencement of construction, the applicant proposes to install exclusionary fencing or flagging around sensitive habitat to be avoided. These proposed avoidance measures are required to be implemented by **Special Condition 4**.

The proposed construction methods also minimize demolition and construction work within the wetted channel of Swain Slough. A temporary sheet pile system will be vibrated into the slough to isolate the existing abutments from the slough channel during their demolition. The new permanent sheet pile walls will then be vibrated into the slough to act as a barrier between slough waters and new abutment construction. The proposed use of a precast concrete girder for the new bridge deck avoids the need for construction falsework. As a result, the only work required in the wetted channel is the removal of the existing bridge columns, the removal of trash and debris from the channel, and the removal of sediment from in front of the sheet piling.¹⁰ In addition, Special Condition 4 requires, and the applicant proposes to use, slough protection systems during the demolition of the existing bridge deck and formation of the new

⁹ The applicant utilized the 2011 American Association of State Highway and Transportation Officials (AASHTO) Policy on Geometric Design of Highways and Streets for the roadway design standards.

¹⁰ Installing sheet piling around the bridge piers to contain sediment during demolition was determined to cause more prolonged disturbance to the channel than the proposed method.

bridge deck to prevent debris, leaking concrete, and other pollutants from falling into the slough.

The proposed construction methods also minimize noise impacts. The proposed development relies on vibratory methods of pile installation to the extent feasible to minimize noise generation. Temporary and permanent sheet piles will be installed using vibratory methods, and permanent steel shell abutment piles will first be vibrated into place before being finished with an impact pile driver (driving the piles into the competent geological layer beneath soft bay muds is necessary to ensure the required structural capacity of the bridge). Transmission of sound through slough waters will be further minimized by the fact that pile driving for the new abutment foundations will occur outside of the slough channel when the tide is out and water depths in the slough are near their minimum. In addition, all in-water work and pile driving will be restricted to June 15th through October 31st to avoid the period of the year when tidewater gobies are most likely to be present. Originally the applicant proposed to exclude fish from the slough channel in the project vicinity through rescue and relocation, but now the applicant proposes to stay below sound thresholds that could harm, injure, or kill fish and proposes real-time hydroacoustic monitoring to ensure these thresholds are not met or exceeded. Avoiding fish exclusion as now proposed is less environmentally damaging because of the potential for fish handling stress and mortality during the exclusion process. As discussed in Section D above, **Special Condition 2** requires the cessation of pile-driving activities before peak sound pressure levels and cumulative sound exposure levels are reached, and **Special Condition 3** requires the applicant to submit a plan for hydroacoustic monitoring detailing the methods that will allow continuous, real-time assessment of sound levels and ensure pile driving is stopped before harmful sound levels are reached.

Furthermore, the applicant proposes and **Special Condition 4(A)(ii)** requires a qualified biologist to monitor all in-water construction activities and be present during bridge demolition, dewatering activities, pile driving for bridge foundations, and concrete pours, to ensure adherence to all environmental permit conditions and avoidance and minimization measures during construction. Finally, **Special Condition 1** requires the applicant to undertake development in accordance with approved final construction plans to ensure the development footprint relative to wetlands and coastal waters is not altered without subsequent Commission review.

As a result, there are no feasible less environmentally damaging construction method alternatives to what is proposed and conditioned.

Based on the above alternatives analysis, the Commission concludes that there are no feasible less environmentally damaging alternatives to the proposed development as conditioned.

Feasible Mitigation Measures

Section 30233 further requires that feasible mitigation measures be provided to minimize adverse environmental effects of filling and dredging. The development involves work in and/or adjacent to slough, seasonal wetland, and riparian habitat that

could result in direct and indirect impacts to sensitive species that rely on wetland and/or slough habitat, including fish, frogs, nesting birds, and rare plants. Depending on the manner in which the proposed development is conducted, the significant adverse environmental effects of the development may include: noise impacts from pile driving on fish; impacts on water quality and hydrology from construction activities and from post-construction stormwater runoff; excavation impacts on the quality and functional capacity of roadside wetlands; impacts to rare salt marsh plants; impacts from the spread of invasive plant species on native plants and habitat quality; impacts to nesting birds; and impacts to Northern red-legged frogs.

Mitigation measures to minimize adverse effects of pile-driving sounds on sensitive fish species and to ensure construction activities avoid work in coastal waters and wetlands to the maximum extent feasible and do not result in erosion or polluted runoff degrading the quality of coastal waters and wetlands are discussed above in the alternatives analysis subsection and in Section D (Marine Resource & Water Quality). Mitigation measures to ensure post-construction stormwater management does not result in degradation of aquatic habitat and water quality are also discussed above in Section D. Avoidance, minimization, and mitigation measures for the other impacts are discussed below.

Impacts from excavation in wetlands

As discussed above, new wider ditches will be excavated adjacent to Pine Hill Road (west of the bridge) to replace the vegetated ditches affected by the road widening. This work will convert upland berms (linear mounds) located between the existing ditches and adjacent pastureland to wetlands, resulting in an overall increase in wetland area. If the reconstructed roadside wetlands achieve the same or superior quality/condition as the existing wetlands to be disturbed within a year of construction, the aforementioned wetland impacts can be assumed to be temporary.

The applicant has submitted a revegetation plan that calls for seeding the new roadside ditches with a native grass seed mix with a revegetation goal of 85% ground cover. If 85% ground cover is not achieved during the first winter, the applicant proposes to reseed.

To ensure impacts to roadside wetland habitats are truly temporary and adequately mitigated for, the Commission attaches **Special Condition 8**. Special Condition 8 requires that the proposed new roadside ditches and any surrounding wet meadow habitat impacted by project construction (where bare ground is observed) be planted with appropriate native wetland plant species and monitored for successful plant reestablishment for one year following impacts. To ensure successful mitigation, Special Condition 8 also requires that a monitoring report be submitted to the Executive Director by December 31st of that year. If the monitoring report indicates that the revegetated wetlands do not have a similar vegetative density and cover to the surrounding wetlands, Special Condition 8 requires the applicant to submit a revised or supplemental restoration program to mitigate for wetland impacts in kind and in place. As conditioned in the manner discussed above, the Commission finds that the development provides feasible mitigation measures to minimize the development's

temporary impacts to roadside wetland habitat consistent with Coastal Act section 30233.

Impacts to Lyngbye's sedge

Salt marsh habitat exists on all four sides of the existing bridge near the banks of Swain Slough along the OHWM. This salt marsh habitat is dominated by rare Lyngbye's sedge,¹¹ and invasive dense-flowered cordgrass¹². A plant survey was conducted in August 2019 to map the extent and relative density of Lyngbye's sedge and dense-flowered cordgrass within the project area. The rare and invasive plant populations' footprints overlap, with relative cover ranging from 40% Lyngbye's sedge and 60% dense-flowered cordgrass along the southeastern side of the bridge to 90% Lyngbye's sedge and 10% dense-flowered cordgrass along the northeastern side.¹³

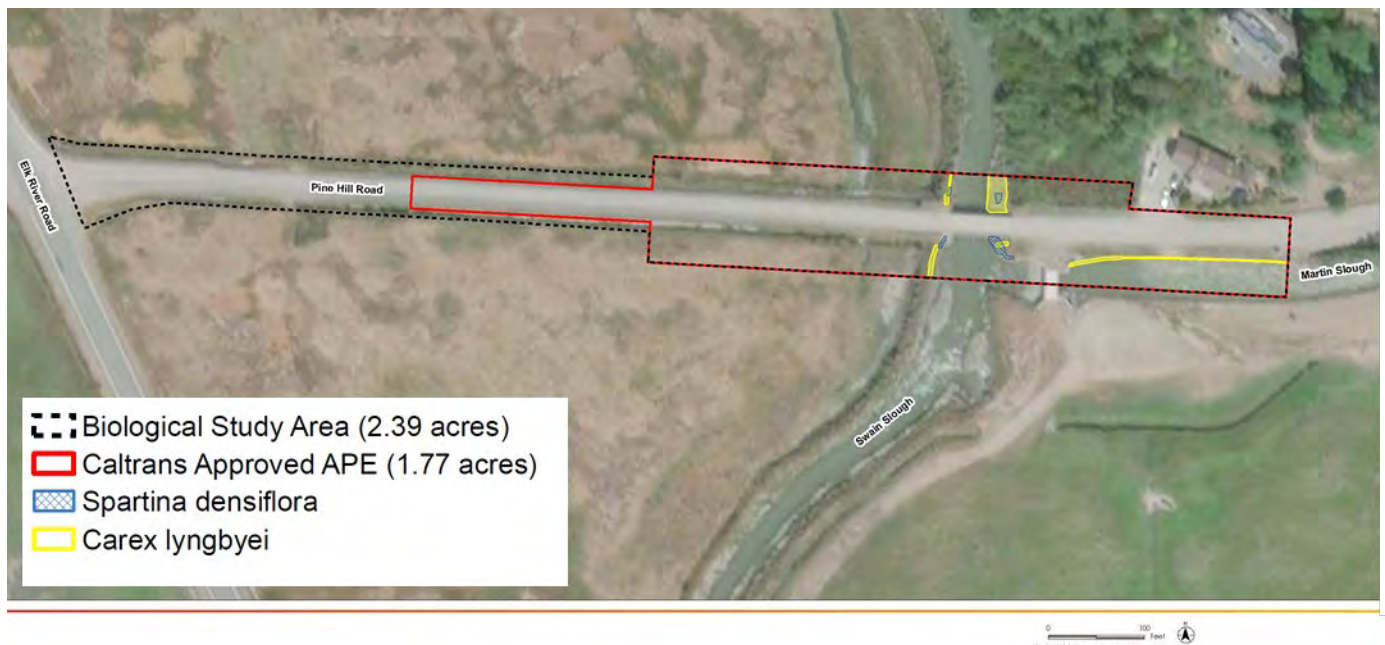


Figure 4. Rare and Invasive Plant Species Locations (prepared by Stantec, December 30, 2019).

Permanent impacts to Lyngbye's sedge are anticipated as the result of the placement of permanent sheet pilings along the new bridge abutments northwest, northeast, and

¹¹ Lyngbye's sedge has a California Rare Plant Rank of 2B.2.

¹² *Spartina densiflora* has a California Invasive Plant Council rating of High.

¹³ The banks of Martin Slough also support a large population of Lyngbye's sedge (which is free of dense-flowered cordgrass due to restoration efforts associated with the Martin Slough Enhancement project), but the subject project does not involve any activities within fifteen feet of Martin Slough.

southeast of the bridge in an area that totals nine square feet.¹⁴ A total of 471 square feet of temporary impacts are also anticipated due to construction access northeast and southeast of the bridge, and slope regrading northwest and southwest of the bridge. See Page 8 of Exhibit 6 for a map of anticipated permanent and temporary impacts.

The applicant has submitted a restoration plan (originally dated February 10, 2020 and revised on November 24, 2020) detailing how impacts will be avoided, minimized and mitigated, with all activities related to plant protection, salvage and restoration to be conducted by a qualified botanist (See Exhibit 6 for a copy of the plan). According to the plan, the ground disturbance footprint within areas occupied by Lyngbye's sedge shall be minimized, and areas of Lyngbye's sedge to be avoided will be identified with flagging, which will be periodically inspected throughout construction and repaired as necessary. In areas of temporary and permanent impacts, the plan specifies that a pre-construction survey will be conducted by a qualified botanist to survey the overall percent cover of Lyngbye's sedge and dense-flowered cordgrass.

Lyngbye's sedge that will be temporarily impacted due to construction access will be flagged and covered in tarps to minimize damage from potential crushing or soil disturbance. The tarps will be placed for as little time as required to complete work activities and will be removed at the end of each work day. Areas of temporary impacts will be monitored post-construction, and if plants do not recover to at least 80% relative cover from the pre-construction survey within one year of impacts, the applicant proposes to treat impacts as permanent requiring mitigation as discussed below.

The submitted plan proposes on-site mitigation for permanent impacts to Lyngbye's sedge at a 2:1 ratio by area (e.g., nine square feet of habitat impacted shall be mitigated through replanting of eighteen square feet of habitat). In areas where Lyngbye's sedge would be destroyed by construction, stands will be salvaged and replanted by a qualified biologist at or around the same elevation as currently growing Lyngbye's sedge, including in areas that contained the rare plant prior to construction and where dense-flowered cordgrass is removed.

To reduce competition with Lyngbye's sedge and further mitigate impacts, the plan also proposes removal of dense-flowered cordgrass from the surveyed project area prior to construction and every year during the restoration period for Lyngbye's sedge discussed below (which is a minimum of three years). The invasive species will be removed through hand pulling or cutting. Dense-flowered cordgrass growing directly adjacent to Lyngbye's sedge in temporary construction access areas will be cut at ground level rather than removed, so that the rare plants are not inadvertently impacted. All cut dense-flowered cordgrass vegetative material and any soil containing root fragments will be disposed of at a waste facility. Soil containing dense-flowered cordgrass root fragments will not be reused on-site as fill material.

¹⁴ Due to the rhizomatous nature of Lyngbye's sedge, it is difficult to estimate the total number of plants that fall within the footprint of the project.

Proposed success criteria include achieving at least 80% of the pre-construction relative cover of Lyngbye's sedge in areas where replanting has occurred, without any replacement plantings required during the previous growing season. The plan proposes annual monitoring following completion of construction for a period of a minimum of three years after planting of salvaged plants, with additional years of monitoring and remediation until all established success criteria are met. The plan proposes submittal of a monitoring report to the Executive Director each monitoring year following project completion until all success criteria have been met.

To ensure the restoration plan is implemented as proposed, the Commission attaches **Special Condition 9** requiring avoidance, minimization, and mitigation of impacts to Lyngbye's sedge and monitoring, reporting, and remediation of on-site mitigation in compliance with the plan. In addition to submittal of a minimum of three years of monitoring reports, Special Condition 9 requires submittal of as-built plans to the Executive Director for review and written approval within thirty days of planting of salvaged plants. The Commission thus finds that the proposed development, as conditioned, will minimize impacts to rare saltmarsh plants.

Impacts from the spread of invasive plant species

Construction and demolition activities could potentially lead to the spread of invasive plant species within the project vicinity. In addition to the proposed removal of dense-flowered cordgrass described above, the applicant proposes a number of measures to avoid the spread of invasive plant species, including ensuring that all construction equipment will be weed-free prior to entering the project site; mulches used in erosion control will be weed-free; and seed mixes used to revegetate the site will be comprised of native species only. In addition, any equipment (including boots/waders) involved in in-water work will be properly cleaned according to guidance provided by the State of California Aquatic Invasive Species Management Plan prior to in-water work to prevent the spread of aquatic invasive species. **Special Condition 4(A)(iv)** requires that the applicant implement these measures as proposed.

Impacts to nesting birds

According to the Natural Environmental Study prepared for the subject project, sensitive bird species potentially nest in vegetation in the project vicinity, including, but not limited to, white-tailed kite (*Elanus leucurus*), Yellow-breasted chat (*Icteria virens*), and Yellow warbler (*Setophaga petechia brewsteri*).¹⁵ Construction disturbance associated with the placement of fill for replacement of the bridge and widening of the approaches (e.g., vegetation removal, frequent loud noises and percussive tools) during the nesting season could result in loss of fertile eggs or nestlings, or otherwise lead to nest abandonment.

¹⁵ During a recent April 2020 site visit, a qualified biologist recorded the presence of ten bird species in the vicinity of the bridge (song sparrow, greater yellowlegs, white crowned sparrow, black headed grosbeak, bullocks oriole, great egret, barn swallow, tree swallow, mallard, and osprey).

The applicant proposes to schedule construction and the removal of any potential nesting habitat to avoid the nesting season to the extent feasible. If it is not feasible to completely avoid the nesting season, the applicant proposes to have a qualified biologist conduct pre-construction nesting bird surveys no more than seven days prior to the initiation of construction activities, and any time construction has ceased for more than seven days.

During proposed surveys, the biologist will inspect all potential nesting habitat within the project footprint and within a 100-foot buffer (for migratory birds) and 250-foot buffer (for raptors and songbirds) around the project area. If an active nest is found within the survey area, the biologist, in consultation with CDFW, will determine the extent of a construction-free buffer zone to be established around the nest, or will develop and agree upon construction methods that will allow work to continue without disturbing an active nest. A qualified biologist will monitor the nest for disturbance until the young have fledged. If evidence of disturbance to an active nest is observed as a consequence of construction activities, construction activities will immediately cease until such time as the birds have fledged or construction protocol is revised so as not to disturb nesting birds or fledglings.

As with other construction activities, the applicant proposes to schedule bridge demolition to avoid the nesting season to the extent feasible.¹⁶ If it is not feasible to schedule bridge demolition to avoid the nesting season, the applicant proposes to have a qualified biologist remove any existing unoccupied and inactive nests from the existing bridge before March 1st of the construction year, and install a net exclusion device under the existing bridge to prevent nesting prior to and throughout bridge demolition. The applicant is still working with CDFW staff on the design of the net exclusion device to be deployed to ensure birds are effectively excluded from building nests and not trapped or otherwise harmed by the exclusion device.

Special Condition 10 requires the applicant to implement the proposed measures to avoid impacts to nesting birds. To ensure the measures are carried out, Special Condition 10 specifies that pre-construction nesting bird surveys be submitted to the Executive Director for review and approval prior to commencement of construction, including a map that locates any active nests identified by the survey and delineates any required construction-free buffer zones, and a narrative that describes proposed nesting bird disturbance avoidance measures.

With the inclusion of Special Condition 10, the Commission finds that the development provides feasible mitigation measures to minimize impacts on sensitive bird nesting habitat consistent with Coastal Act section 30233.

¹⁶ The existing bridge structure was visually surveyed for evidence of previous migratory bird nesting activity (e.g., remnant mud nests) and for bat roosts during a field assessment in 2013, and one unoccupied black phoebe (*Sayornis nigricans*) nest and a small colony of barn swallow nests were observed.

Impacts to Northern red-legged frogs (*Rana aurora*)

Northern red-legged frog is a state-listed species of special concern that breeds in freshwater wetlands from Mendocino County to British Columbia. Except when Swain Slough overtops its banks and floods the area with brackish water, the roadside ditches and the cattle wallows in the adjacent grazed wetlands provide suitable freshwater aquatic environments for Northern red-legged frogs for egg laying and tadpole rearing. Construction-related equipment, traffic, and ground disturbance in the project area therefore has the potential to harm individual adult frogs, tadpoles and eggs.

The breeding season for the Northern red-legged frog is typically November through February, and the tadpole-rearing season is typically February through April. The applicant anticipates restricting all construction activities occurring in roadside ditches and seasonal wetlands to June 15th through October 31st (the in-water construction window), and thus avoiding impacts to Northern red-legged frog breeding, egg laying, and tadpole rearing. The Natural Environmental Study prepared for the project also proposes to avoid or minimize project-related impacts to Northern red-legged frogs by having a qualified biologist conduct a pre-construction survey for the species immediately prior to the onset of construction and move any frogs encountered to a safe location with similar habitat. If a Northern red-legged frog is encountered during construction, the applicant proposes to cease all construction activities in the vicinity until appropriate corrective measures have been implemented or it has been determined that the frog will not be harmed.

Special Condition 11 requires that a pre-construction survey occurs as proposed. Special Condition 11 also clarifies that the survey shall take place no more than one week prior to commencement of ground disturbance within 100 feet of all suitable Northern red-legged frog habitat, and that the applicant shall coordinate with CDFW to relocate any identified frogs to nearby suitable habitat. If a Northern red-legged frog is observed in an active construction zone, Special Condition 11 specifies that construction activities shall halt until a biologist, in consultation with CDFW, has moved the frog to a safe location in similar habitat outside of the construction zone.

With the inclusion of Special Condition 11, the Commission finds that the development provides feasible mitigation measures to protect Northern red-legged frogs consistent with Coastal Act section 30233.

For all the reasons discussed above, the Commission finds that the development as conditioned provides feasible mitigation measures to minimize the development's impacts on wetland habitat consistent with Coastal Act section 30233.

Biological Productivity and Functional Capacity

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

The mitigation measures incorporated into the project and required by the special conditions discussed above will ensure that the project will not have significant adverse

impacts on coastal waters or wetlands in and around the project vicinity. As discussed above, the development will also result in a net increase of stream channel and wetland ditch habitat.

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

F. Coastal Hazards

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

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...

The subject Pine Hill Road bridge spans tidally influenced waters and is surrounded on three sides by diked former tidelands within the mapped 100-year floodplain.¹⁷ Low earthen levees are present along Swain Slough's banks to prevent normal high water from entering the surrounding flat coastal plain, but aerial imagery of recent heavy storm events (in the winters of 2015 and 2017) and recent site visits by Commission staff during king tides (on February 8 and November 15, 2020) reveal that slough waters spill over notches/failures in the unmaintained levees and flood the coastal plain with salt water. As a result, salt marsh vegetation is prevalent in the roadside ditches and agricultural lands to the west of the slough.

Pine Hill Road is slightly elevated above the surrounding agricultural land, yet the roadway west of Swain Slough floods periodically in winter during king tides and large storms as a result of Swain Slough overtopping its banks. According to Humboldt County's Humboldt Bay Area Plan Sea Level Rise Vulnerability Assessment (2018),¹⁸ Pine Hill Road is one of the three roads in the unincorporated portion of the Humboldt Bay area coastal zone where flooding impacts are currently most prevalent. Although the proposed development involves replacing the bridge over Swain Slough and

¹⁷ The existing bridge was constructed in 1955, but Pine Hill Road has crossed Swain Slough at this location since the 1890s, when the project area was owned by a Mr. Pine as part of a 350 acre dairy farm. Mr. Pine diked the land off from surrounding tidelands after he purchased the property in 1880.

¹⁸ Available at: <https://humboldt.gov/DocumentCenter/View/62872/Humboldt-Bay-Area-Plan-Sea-Level-Rise-Vulnerability-Assessment-Report-PDF?bidId=>.

conforming the roadway approaches to the new bridge, the project does not involve improvements to the remainder of Pine Hill Road.



Figure 5. Flooding During a Severe Storm Event in 2017 (view of the bridge from the northwest looking southeast; photograph provided as part of the 2019 Agricultural Suitability Assessment prepared by Stantec).

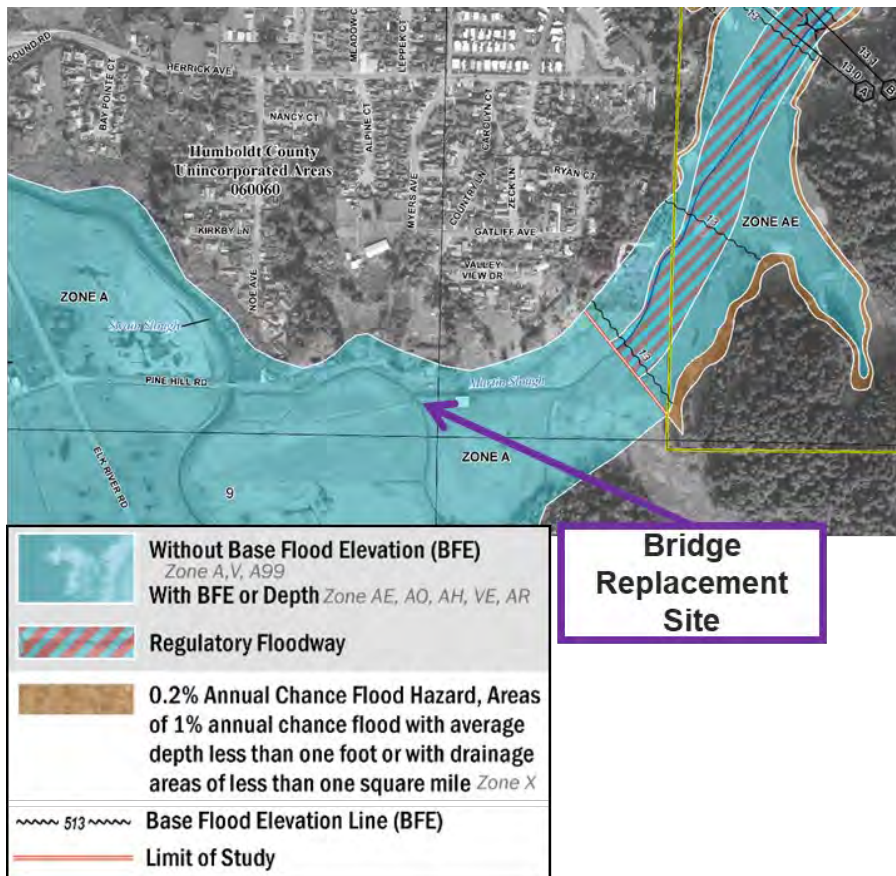


Figure 6. FEMA Flood Insurance Rate Map (Humboldt County Panel 843 of 2050, Map #06023C0843G, Revised 6/21/2017).

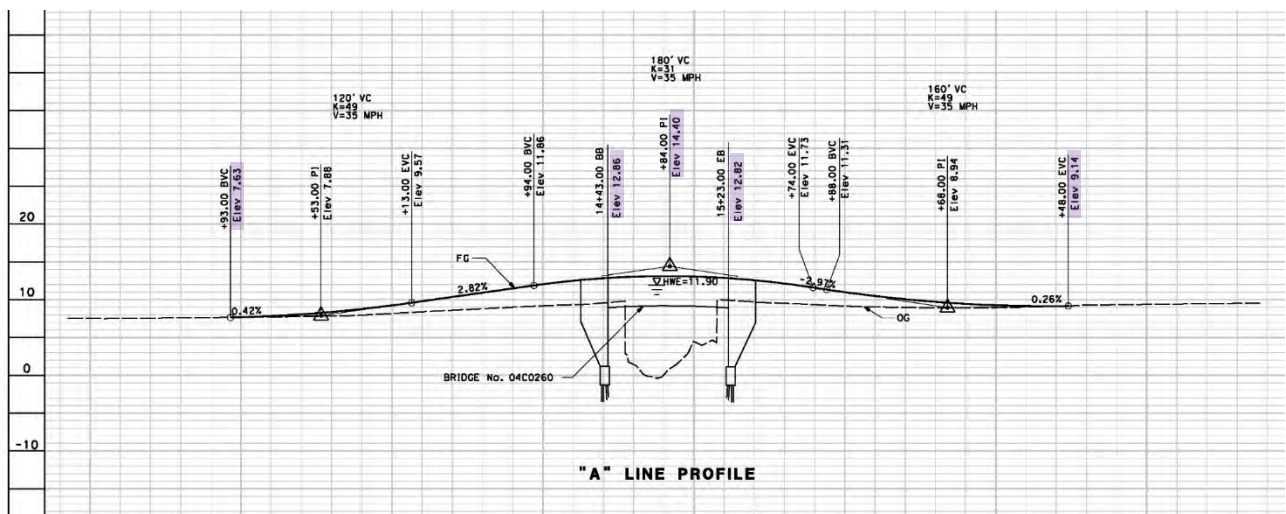
To be found consistent with Coastal Act section 30253, the proposed development must be sited, designed, and conditioned in a manner that minimizes risks to life and property in an area of high flood risk. In addition, the development must assure stability and structural integrity and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area. At the same time, the development must protect coastal resources in a manner consistent with the other policies of Chapter 3 of the Coastal Act.

A Location Hydraulic Study Report was prepared for the subject development to document any potential impacts to or encroachments upon the floodplain resulting from the development (WRECO, September 2015). In addition, a Bridge Design Hydraulic Study Report was prepared to evaluate the hydrologic and hydraulic characteristics of the project site, estimate scour depths at the proposed bridge, and provide recommendations for scour countermeasures for the proposed bridge (WRECO, November 2015). As discussed below, these studies found that the proposed bridge will not cause or contribute to flooding or erosional hazards in the project area.

Flooding

The OHWM on Swain Slough at the bridge site is 8.1 feet in elevation. According to the 2015 Location Hydraulic Study Report, the water surface elevations on Swain Slough in the project vicinity during the 50- and 100-year floods are 11.5 and 12.1 feet (NAVD88), respectively. The proposed bridge's minimum soffit elevation of 8.6 feet (NAVD88) is just above current high tides at the bridge site and the proposed minimum deck elevation of 12.5 feet is above the current 100-year water surface elevation (and approximately 2.8 feet higher than the existing minimum bridge deck elevation). As a result, if anticipated future sea level rise is not taken into account, the proposed bridge deck would remain dry during 100-year flow events, and people and vehicles traveling on the bridge would not be at risk of flood hazards.

Figure 7. Proposed Bridge Profile Showing Elevations (NAVD88).



The Federal Highway Administration (FHWA) criteria indicates that bridges should be designed to pass the 50-year storm event with adequate freeboard to account for debris and bedload. Caltrans also recommends that bridges be designed to pass the 50-year storm event with adequate freeboard to pass anticipated drift (two feet of freeboard is typically used in Caltrans bridge design), and the 100-year storm event with no freeboard. Given that the proposed minimum bridge soffit elevation is 8.6 feet and the estimated 50- and 100-year flood water surface elevation levels of the slough channel are 11.5 and 12.1 feet, respectively, the existing and proposed bridges do not meet these standards.

However, the soffit elevation of the bridge is designed to be higher than the adjacent banks, so the slough will overtop the banks and spread over the coastal plain before the estimated 50-year and 100-year flood levels of the slough channel are reached, keeping flood waters below the soffit (this happens with the existing bridge; see picture at right). In addition, because of the characteristics of the area draining to Swain Slough,¹⁹ little debris is generated during flood flows that could accumulate and cause loading on the bridge. As a result, the bridge is not expected to cause objectionable backwater or otherwise impede flood flows even though the proposed soffit elevation will be lower than the estimated 50-year and 100-year flood levels. According to the hydraulic studies prepared for the subject development, the development will not significantly affect the water surface elevations or flow velocities in Swain Slough at the bridge site. Furthermore, because the proposed development will not result in a significant change in impervious surface area and will not cause an increase in fill inside the floodplain, the development will also not impact flood capacity. The Commission Staff Engineer concurs that the proposed bridge will not worsen flooding in the area.



Figure 8. Upstream of existing bridge when levees overtopped and adjacent fields flooded (photograph taken by Commission staff during king tide on February 8, 2020).

Designing the proposed bridge to satisfy the FHWA and Caltrans hydraulic clearance requirements would require raising the bridge significantly.²⁰ Raising the bridge would in turn require raising and widening the roadway approaches to make the higher bridge

¹⁹ Swain Slough is not very long and meanders through low-lying land. The majority of its waters (and watershed) come from Martin Slough which is separated from Swain Slough by a tide gate. Thus large amounts of debris are not expected from an upper watershed that could dam up at this low-lying bridge and create erosion/stability issues.

²⁰ As mentioned above, the proposed bridge is 2.6 feet below the 50-year water surface elevation, and FHWA and Caltrans standards require additional freeboard to pass anticipated drift.

accessible, resulting in additional filling of the existing roadside wetlands and greater encroachment into agricultural lands.²¹

Finally, even if the bridge and its approaches were further elevated, the road leading to the bridge would still become inundated during high flows and the bridge would remain inaccessible. When Swain Slough overtops its banks, the agricultural fields west of the bridge flood first, before the roadside ditches west of the bridge overflow onto Pine Hill Road. The roadway west and east of the bridge has minimum elevations of 7.5 and 8.9 feet, respectively, while the proposed bridge has a minimum deck elevation of 12.5 feet. As long as the levees west of the bridge continue to breach, the roadway west of the bridge will be flooded and impassible long before the bridge deck gets wet.



Figure 9. Pine Hill Road West of Swain Slough (the picture on the left (taken on 11/15/20) is looking west towards Elk River Road and the picture on the right (taken on 2/8/20) is looking east towards Swain Slough bridge; photographs taken by Commission staff during king tides).

Pine Hill Road is located outside of the urban-rural boundary and is approximately 0.4 miles long from Elk River Road (the western terminus) to a private driveway (the eastern terminus). Northeast of the slough crossing, Pine Hill Road connects with Meyers Avenue, which provides access up to the bluff top above and connects with Herrick Avenue, a road that parallels Pine Hill Road and provides alternative access to the same north-south connectors, at an elevation over 100 feet above sea level. East of the bridge, Pine Hill Road provides direct access for four residences. Occupants of these residences east of the Pine Hill Road bridge can evacuate the floodplain via Meyers Avenue without needing to rely on the Pine Hill Road bridge or the lowest-lying portions of Pine Hill Road to the west of the bridge. The road west of the bridge is surrounded by open agricultural fields. In the event of a forecasted flood, the County

²¹ The applicant has indicated that a steeper bridge is not feasible to stay within AASHTO guidance for profile grade and vertical curves that meet the 35-mph design speed. In addition, the applicant cannot further steepen the side slopes of the embankment of the western roadway approach to reduce encroachment into grazed wetlands (the applicant is proposing 1.5:1 side slopes where typical embankment slopes are 4:1).

has a flood contingency plan that details procedures and roles and responsibilities for flood monitoring, notification, and response. The Public Works Director has authority, as the county road commissioner, to close roads and bridges under emergency conditions for public safety purposes, whether or not there is an officially declared emergency. Road closure decisions are made directly by the Public Works Department, in coordination with staff from the local office of the National Weather Service and the regional Department of Water Resources, based on evaluating site conditions and hazard information.

Given that (1) Pine Hill Road is a redundant, lightly traveled rural road, (2) no residence is solely reliant on the portion of the road that periodically floods, (3) the County has emergency response plans in place for flooding, and (4) the road is not destabilized, eroded, or otherwise compromised by nuisance flooding, nuisance flooding of the road can be accommodated without risk to life or property.

If and when the connecting roadway elevations are raised, the accessibility benefits of raising the bridge may outweigh the coastal resource costs. Therefore, the proposed bridge has been designed so that it can be raised. The footings have been sized for a taller bridge and jacking points have been detailed to facilitate raising the bridge as much as 4.5 feet. However, raising the bridge before the connecting road is raised would result in additional wetland fill and agricultural land conversion impacts without the bridge becoming any more passable during flood events.

Scour and Bridge Stability

Scour potential at the site is low as the site is tidally influenced with slow moving water. The existing bridge has a soffit elevation that is approximately half a foot lower than the soffit elevation of the proposed bridge. As discussed above, the channel banks are currently overtopped and the surrounding area west of the slough is inundated during the 50-year event, preventing flood waters from rising to the level of the existing bridge. A 2008 hydraulic bridge inspection indicated that the existing bridge was not scour critical, and a 2013 bridge inspection performed by Caltrans determined the bridge foundations were stable.

According to the 2015 Bridge Design Hydraulic Study, scour calculations were performed for the proposed new bridge based on the FHWA's *Hydraulic Engineering Circular No. 18*, "Evaluating Scour at Bridges," and proposed bridge footing depths are designed to be embedded below the maximum computed scour depth. As a result, like the existing bridge, the proposed bridge is not expected to create nor contribute significantly to scour and is expected to remain stable over its design life.

Given that the proposed bridge (1) is designed to accommodate current flood hazards in a way that avoids risk to life and property, and (2) will not compromise stability or structural integrity, cause erosion, or worsen flooding in the surrounding area, raising the bridge further at this time is not necessary to ensure consistency with Coastal Act section 30253 and is not the least environmentally damaging feasible alternative.

Sea Level Rise

Table 1, below, provides detailed information on sea level rise projections for Humboldt Bay, which has the highest rate of sea level rise in the State due to active land subsidence. The water surface elevations on tidally influenced Swain Slough are governed by Humboldt Bay tides. As described above, the proposed bridge’s minimum soffit elevation is just above current high tides at the bridge site and is thus not elevated to account for sea level rise.²²

Table 1. Projected²³ Sea Level Rise (in feet) on Humboldt Bay

	Low Risk Aversion (ft.)	Medium-High Risk Aversion (ft.)	Extreme Risk Aversion (ft.)
2030	0.7	1	1.2
2040	1.1	1.6	2.0
2050	1.5	2.3	3.1
2060	1.7-1.9	2.8-3.1	4.3
2070	2-2.4	3.5-4	5.6
2080	2.4-2.9	4.4-5.1	7.2
2090	2.7-3.5	5.3-6.2	8.9
2100	3.1-4.1	6.3-7.6	10.9

As discussed above, the proposed bridge design would allow for the future elevation of the structure by 4.5 feet. A 4.5-foot rise in sea level is expected after 2100 under a low risk aversion scenario; between 2070 and 2090 under a medium-high risk aversion scenario; and between 2060 and 2070 under an extreme risk aversion scenario.

The bridge is not a small or temporary structure, but it can accommodate flooding without compromising its own stability or impacting the surrounding area, and due to its unique context (i.e., location on a redundant rural road over three-quarters of a mile inland of the shoreline), its failure to adapt would not result in considerable public health, safety, or environmental impacts. As a result, per the OPC and Coastal Commission’s sea level rise guidance, the medium-high risk aversion scenario should be used for the subject development.

²² The 50- and 100-year flood events estimated at the project site were calculated based on historical yearly maximum water surface elevations on Humboldt Bay (1979-2011) at the North Spit tide gage and do not account for future sea level rise.

²³ The projections for relative sea level rise on Humboldt Bay take into account the combined effects of regional eustatic sea level rise and vertical land motion (tectonic uplift and subsidence). The low-risk aversion scenario has an approximately 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. Given the range of many uncertainties incorporated into the models, these projections are not precise, but are intended to reflect a precautionary approach. As our understanding of sea level rise continues to evolve, these sea level rise projections will continue to change as well. While uncertainty will remain with regard to exactly how much sea levels will rise and when, the direction of sea level change is clear.

The appropriate time horizon to use to evaluate sea level rise depends on the anticipated duration of development, after which such development is expected to be removed, replaced, or redeveloped. The existing bridge is 65 years old and is now in need of replacement, suggesting that the life of the new bridge will be similar (55-75 years, through 2075-2095). The bridge can be raised 4.5 feet (to a minimum soffit elevation of 12.1 feet NAVD88), and 4.5 feet of sea level rise is expected to occur between 2070 and 2090 under a medium-high risk aversion sea level rise scenario. Therefore, under the medium-high risk aversion sea level rise scenario, the proposed bridge will be able to be raised to maintain its existing performance level over its expected lifetime (i.e., the bridge can be raised so that its minimum soffit elevation remains above monthly high tides on Swain Slough).

If and when water levels rise to the point where the proposed Swain Slough bridge deck is overtopped (the minimum deck elevation is proposed at 12.5 feet, with the ability to raise to 17 feet elevation), the bridge would be inaccessible because the roadway approaches would be impassible first, and the bridge structure could accommodate flooding without suffering significant damage. Thus, the proposed bridge would minimize risk to life and property even under conditions of significant sea level rise.

The proposal to design the bridge to accommodate raising the bridge in the future rather than building it at a higher elevation now allows the project to avoid greater agricultural conversion and wetland fill impacts until such time as increased flooding and erosion from sea level rise actually occurs. This proposal also addresses uncertainty about the future of Pine Hill Road west of Swain Slough, which will eventually need to be raised or abandoned to minimize risk in the face of increasing flooding with sea level rise.²⁴

²⁴ Currently, flooding of Pine Hill Road west of the bridge occurs a few times a year during winter storms and extreme tides. Under medium-high risk aversion sea level rise projections, flooding events of Pine Hill Road currently associated with king tides and storm events will likely become monthly events (associated with mean monthly maximum water on Humboldt Bay) between 2030 and 2040 (1.1 feet of SLR), and every-other-day events (associated with mean higher high water on Humboldt Bay) by 2050 (2.3 feet of SLR). Under a low risk aversion scenario, monthly flooding would likely occur by 2040, and daily flooding between 2060 and 2080. Pine Hill Road is located within the same Elk River floodplain to the east of the most vulnerable segment of Highway 101 in Humboldt County (according to Caltrans' December 2014 "District 1 Climate Change Vulnerability Assessment and Pilot Studies: FHWA Climate Resilience Pilot Final Report"). Along this highway segment, a railroad track embankment (for a defunct railroad) acts as a levee between Humboldt Bay and the highway. This embankment is unmaintained and deteriorating and is highly vulnerable to breaching by erosion or by being overtopped by extreme tides and/or storm surges. In addition, the protective dikes on Elk River Slough east of the highway have already been breached and the road embankment on the east side of the highway is tidally inundated now by mean annual maximum water (MAMW) of 8.8 feet. Future adaptation of this segment of highway may result in fortification, elevation, and/or retreat of the highway. Causeway or retreat options may in turn result in the diked former tidelands east of the highway becoming tidally influenced saltmarsh habitat. As a result, the future costs and environmental impacts of maintaining Pine Hill Road west of Swain Slough may outweigh its usefulness/utility.

Thus, the proposed development can be found consistent with Coastal Act section 30253 for the anticipated life of the development taking into account projected sea level rise.

Assumption of Risk

Finally, considering the significant existing flood hazard that will only worsen with sea level rise, the Commission attaches **Special Condition 12**, 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 the applicant has chosen to implement the project despite flooding and geologic risks, the applicant must assume the risks. Special Condition 12 notifies the applicant that the Commission is not liable for damage as a result of approving the permit for development. The condition also requires the applicant 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.

Therefore, the Commission finds that the proposed development, as conditioned, will minimize risk to life and property from flood and geologic hazards, consistent with Coastal Act section 30253.

G. Agricultural Resources

Coastal Act section 30241 states:

The maximum amount of prime agricultural land shall be maintained in agricultural production to assure the protection of the area's agricultural economy, and conflicts shall be minimized between agricultural and urban land uses through all of the following:

- (a) By establishing stable boundaries separating urban and rural areas, including, where necessary, clearly defined buffer areas to minimize conflicts between agricultural and urban land uses.
- (b) By limiting conversions of agricultural lands around the periphery of urban areas to the lands where the viability of existing agricultural use is already severely limited by conflicts with urban uses or where the conversion of the lands would complete a logical and viable neighborhood and contribute to the establishment of a stable limit to urban development.
- (c) By permitting the conversion of agricultural land surrounded by urban uses where the conversion of the land would be consistent with Section 30250.
- (d) By developing available lands not suited for agriculture prior to the conversion of agricultural lands.
- (e) By assuring that public service and facility expansions and nonagricultural development do not impair agricultural viability, either through increased assessment costs or degraded air and water quality.
- (f) By assuring that all divisions of prime agricultural lands, except those conversions approved pursuant to subdivision (b), and all development

adjacent to prime agricultural lands shall not diminish the productivity of such prime agricultural lands.

The subject bridge is surrounded on three sides by agricultural land. The project requires permanent acquisition of two small slivers of agricultural land to the north and south of the current road right-of-way to accommodate the proposed widening of the western bridge approach, resulting in the permanent loss of approximately 3,044 square feet (0.07 acres) of agricultural land (see Figure 10).²⁵

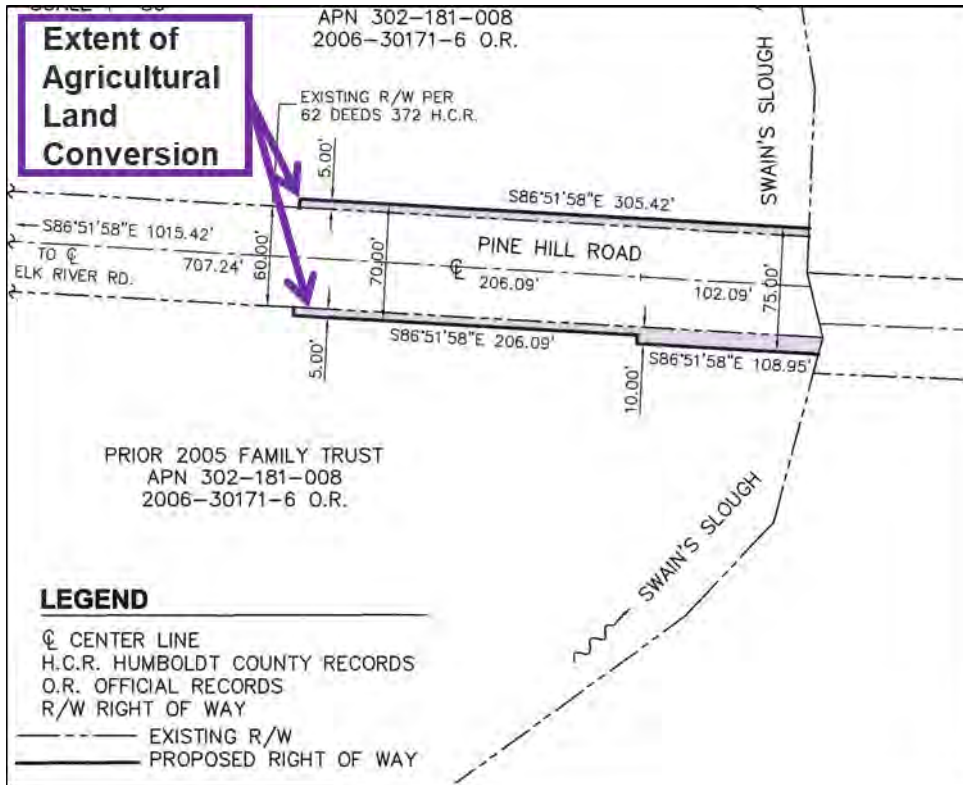


Figure 10. County's Easement Acquisition in Adjacent Agricultural Land.²⁶

To fulfill the purpose of the project to bring the bridge up to current standards, the western roadway approach must be widened to conform the existing roadway with the wider bridge. The proposed roadway approach width is the minimum necessary to

²⁵ Currently, barbed-wire fencing delineates the outer edges of the Pine Hill Road easement west of the bridge, separating the roadside ditches from the adjacent pastureland to the north and south. To accommodate widening of approximately 260 linear feet of the western roadway approach, the applicant proposes to move the northern fence line five feet into the adjacent field to the north, and to move the southern fence line five to ten feet into the adjacent field to the south. The County has made a permanent easement acquisition from the adjacent property owner for the project.

²⁶ This map shows acquisition of 3,658 square feet (0.084 acres) of property, but approximately 600 square feet of this area includes the levee, bank, and channel of Swain Slough. As a result, 3,044 square feet (0.07 acres) of grazing land will be lost.

conform to the width of the new bridge, the proposed roadway embankment slopes have been steeply designed to minimize encroachment, and any narrowing of the proposed roadside ditches would reduce their capacity to detain, filter, and infiltrate stormwater runoff. Thus, the proposed agricultural conversion cannot be avoided.

The fields to the north and south of the western roadway approach are part of an approximately 22-acre parcel (APN 302-181-08) that is bisected by Swain Slough. The owner of this parcel also owns a contiguous 21-acre agricultural parcel to the south that is grazed in conjunction with the subject parcel (no fence exists between the two parcels).²⁷ The proposed loss of 0.07 acres of grazing land results in the loss of less than 0.2% of this farm tract. Using a conservative estimate of one animal unit per acre,²⁸ the 0.07 acres of grazing land lost by the encroachment of the northern and southern fence lines would result in the loss of 0.07 animal units. Given that (1) only a small fraction of an animal unit would be lost, (2) the land to be lost is negligible in size relative to the overall size of the farm tract and (3) the land to be lost is inundated most of the time and thus is particularly unproductive for grazing purposes relative to the rest of the farm tract (as described in subsection b below), it is highly unlikely that the proposed encroachment would result in any reduction in the maximum number of animals that could be grazed on the subject farm tract. Nonetheless, the encroachment does result in a conversion of agricultural land and thus must be reviewed for consistency with Coastal Act section 30241.

Section 30241 applies to prime agricultural land and all agricultural lands on the periphery of an urban area. The subject property is on the periphery of an urban area, as it adjoins the LCP-certified urban rural boundary line at the northeastern corner of the bridge. Therefore, the Commission must review the proposed conversion of agricultural land to roadway improvements for consistency with the requirements of section 30241.

Maintaining Maximized Production of Prime Agricultural Land

Pursuant to Coastal Act section 30241, the maximum amount of prime agricultural land shall be maintained in agricultural production. The agricultural lands to be converted by the widening of the western bridge approach do not meet the Coastal Act section

²⁷ The owner of this land has leased the land to a tenant for the past twenty years who has used the land to graze bulls out of season; the land has not been utilized for grazing for the past couple of years. According to the Archaeological Survey Report prepared for the project in January 2013, the project area has been under agricultural operation since the 1870s and was diked off from adjacent tidelands sometime after 1880 and used as a dairy farm with stables at the foot of the bluff accommodating 116 dairy cows and two pastures for farm animals.

²⁸ A Livestock and Natural Resources Advisor for the Humboldt/Del Norte University of California Cooperative Extension visited the site on December 17, 2019 and determined that the site has semi-permanent, standing brackish water that limits forage production to less than one animal unit per acre, even during the peak production months of early summer (Jeffery Stackhouse, communication with County staff, December 18, 2019).

30113²⁹ definition of prime agricultural land.³⁰ Therefore, the Commission finds that the land to be converted is not prime agricultural land, and the first directive of section 30241 regarding maintaining the maximum amount of prime agricultural land in agricultural production is not applicable to the project site.

Minimizing Conflicts Between Agricultural and Urban Land Uses

As cited above, section 30241 also enumerates a series of measures to be undertaken to minimize conflicts between agricultural lands, both prime and non-prime, and urban uses. The Commission finds that for the reasons discussed below, the conversion of the subject agricultural lands to the proposed roadway improvements that will occur around the periphery of an urban area is a permissible conversion consistent with the applicable criteria of section 30241.

(a) Establishing stable boundaries separating urban and rural areas

The subject bridge is located at the boundary between the agricultural bottomlands of the Lower Elk River floodplain and urban development associated with the City of Eureka (See Exhibit 2 for an aerial of the project vicinity). Humboldt County's urban-rural boundary is located at the northeastern corner of the bridge, separating the residential development on the bluff above from the low-lying agricultural land below (See Figure 11). The residential development above is designated and zoned residential, while the agricultural land below is designated and zoned agriculture exclusive (See Figure 12). Humboldt County's LCP includes policies that restrict urban

²⁹ Coastal Act section 30113 defines "prime agricultural land" through incorporation-by-reference of paragraphs (1) through (4) of section 51201(c) of the California Government Code: "Prime agricultural land entails land with any of the follow characteristics: (1) a rating as class I or class II in the Natural Resource Conservation Service land use capability classifications; or (2) a rating 80 through 100 in the Storie Index Rating; or (3) the ability to support livestock used for the production of food and fiber with an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture; or (4) the ability to normally yield in a commercial bearing period on an annual basis not less than two hundred dollars (\$200) per acre of unprocessed agricultural plant production of fruit- or nut-bearing trees, vines, bushes or crops which have a nonbearing period of less than five years."

³⁰ The agricultural lands to be converted by the widening of the western bridge approach do not meet any of the four criteria outlined in the definition of prime agricultural land. A State Soil Scientist at the Natural Resource Conservation Service determined that the land use capability classification and Storie Index Rating of the subject agricultural lands do not meet the first or second criteria of the definition (Jonathan Shultz, communication with County staff, December 12, 2019). Regarding the third criteria of the definition (the ability to support livestock used for the production of food and fiber with an annual carrying capacity equivalent to at least one animal unit per acre), a Livestock and Natural Resources Advisor for the Humboldt/Del Norte University of California Cooperative Extension visited the site on December 17, 2019 and determined that the site has semi-permanent, standing brackish water that limits forage production to less than one animal unit per acre, even during the peak production months of early summer (Jeffery Stackhouse, communication with County staff, December 18, 2019). Finally, commercial fruit and nut production is precluded along the immediate coastal areas of Humboldt County (due to the climate, among other variables), and thus the subject agricultural lands do not meet the fourth criteria of the definition.

development outside the urban boundary and prevent urban development on lands zoned and designated agriculture exclusive.

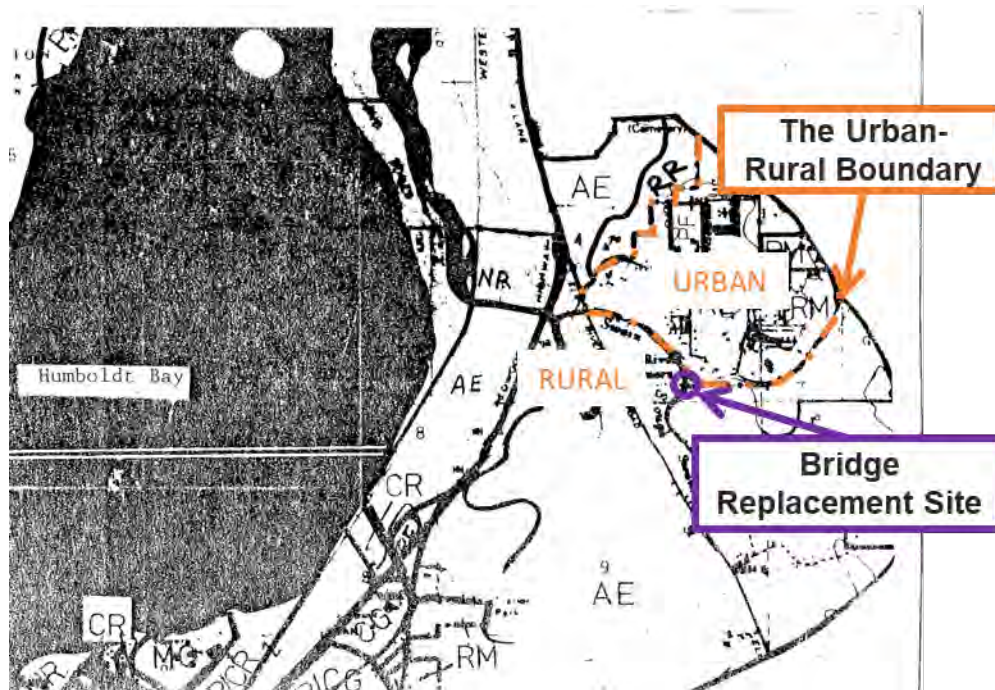


Figure 11. Map of the Coastal Zone from the Humboldt Bay Area Plan.

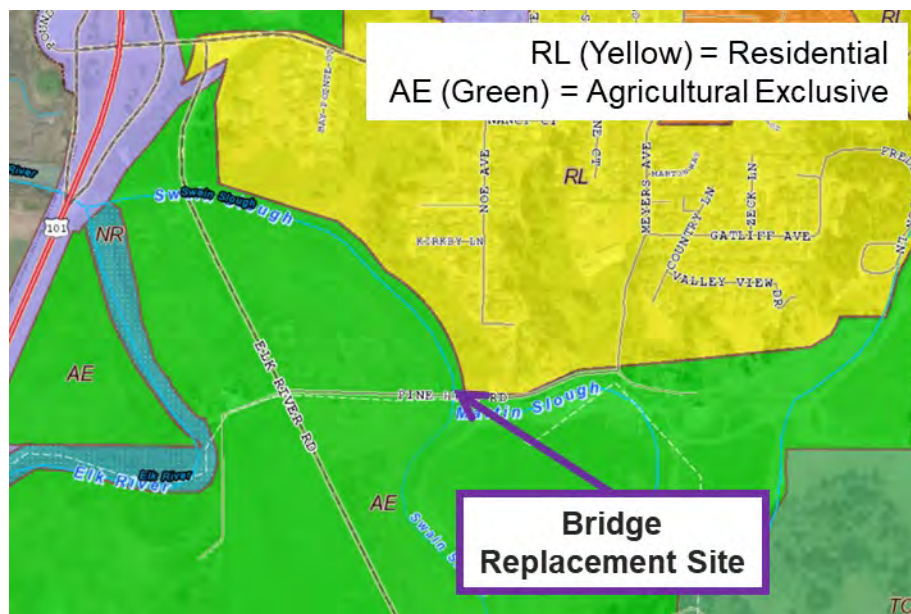


Figure 12. Humboldt County Land Use Designations.

Swain Slough and the portions of Pine Hill Road east of the bridge delineate the boundary between urban and rural areas, with the slough, floodplain, and bluff creating a stable buffer between urban and agricultural lands that is reinforced by the County's zoning and urban boundary line. Bringing the bridge and its approaches up to current standards as proposed will not compromise or in any way diminish this existing stable

boundary. The proposed development will increase the width and prologue the life of the roadway's bridge and its approaches, but the development will not add new lanes or otherwise increase the capacity or change the rural character of the roadway.³¹ The topographic and regulatory divisions between the blufftop residential development and low-lying grazing lands will remain and thus conflicts between urban and agricultural uses will be minimized.

(b) Limiting conversions around the urban periphery to lands where the viability of existing agricultural use is already severely limited

As discussed in (a) above, the proposed conversion of agricultural lands constitutes a conversion of agricultural land around the periphery of an urban area. The strips of agricultural land to be converted are already severely limited by soil saturation and salt water inundation. Episodic flooding has always been common along the lowland areas surrounding Humboldt Bay and the Elk River Estuary; however, flooding has significantly worsened over the past 25 years due in part from urban uses in the surrounding watershed, including from increased stormwater flows from residential areas in the upper watershed. Increased flooding is also caused by higher tidal waters as a result of sea level rise. These conditions mean that grazing lands in the project vicinity are frequently unusable due to flooding or saturation for days, weeks and sometimes longer between October and May, resulting in a significant loss in agricultural productivity.

The 0.07 acres of grazing land proposed to be permanently converted is immediately adjacent to the slough, comprised entirely of coastal wetlands, and subject to some of the worst flooding in the project vicinity. An Agricultural Suitability Assessment of the site prepared by Stantec and dated November 26, 2019, utilized recent aerial imagery from different periods during the year to map agricultural land adjacent to the road that is perennially saturated; this mapping indicates that the majority of the land to be converted is permanently inundated and therefore likely not suitable for grazing purposes. In addition, the subject land's proximity to the tidally influenced slough, high-water table, and poor drainage, as well as breaches in the unmaintained earthen dike that lines the slough, have all led to saltwater intrusion as indicated by standing brackish water and saltmarsh vegetation. Even if the compromised dike is fixed and/or augmented, given ongoing regional subsidence of the agricultural bottomlands and predicted sea level rise (and related groundwater rise), the suitability of these grazing lands for continued agricultural use is expected to continue to degrade over time. Thus, the proposed development would result in the conversion of land around the urban periphery where agricultural viability is already severely limited.

³¹ Based on the Historic Property Survey Report prepared for the project, Pine Hill Road has crossed Swain Slough at this location since the 1890s, and has never resulted in urban development of the low-lying floodplain lands. Based on historic aerial imagery, the residential subdivision of the blufftop land northeast of the slough between Pine Hill Road and Herrick Avenue took off in the 1960s and has become increasingly dense over the ensuing decades.

(c) Permitting the conversion of agricultural lands surrounded by urban uses consistent with section 30250.

The proposed conversion would not occur on agricultural lands surrounded by urban uses, so section 30241(c) does not apply to the subject development.

(d) Developing available lands not suitable for agriculture first.

As there is agricultural land directly north and south of the western approach, there is no alternative alignment that could avoid agricultural conversion. Therefore, there are no available lands not suitable for agriculture that could be developed first. In addition, as discussed in subsection (b) above, the slivers of agricultural land to be converted are becoming increasingly unsuitable for agriculture and have not been used as such in recent years. Therefore, the proposed conversion of agricultural land is consistent with this provision.

(e) Assuring that public service and facility expansions and nonagricultural development do not impair agricultural viability, either through increased assessment costs or degraded air and water quality.

The proposed bridge replacement project will not increase assessment costs or degrade air or water quality. The development will not be financed through assessments against the adjoining agricultural properties. Because the development does not increase roadway capacity, the development should not result in additional traffic that could degrade air quality. In addition, as discussed in Finding D and E of this report, the development has been designed so as not to degrade water quality. Therefore, the development will avoid any impairment of agricultural viability consistent with this provision.

(f) Assuring that all divisions of prime agricultural lands, except those conversions approved pursuant to subdivision (b), and all development adjacent to prime agricultural lands shall not diminish the productivity of such prime agricultural lands.

The proposed development does not involve the division of prime agricultural lands, and the agricultural land along the western bridge approach that is to be converted does not constitute prime agricultural land. Prime soils do exist on the agricultural land to the southeast of the bridge, but the proposed development avoids permanent conversion of agricultural land southeast of the bridge as well as any temporary encroachment onto these agricultural lands during construction. As described in Findings D and E of this report, the development has been designed to avoid negative impacts to the water quality and hydrology of Swain Slough that could affect the productivity of prime agricultural lands directly east of the slough. Therefore, the development will not diminish the productivity of prime agricultural lands inconsistent with this provision.

Conclusion

In summary, the proposed conversion of agricultural land to widen the western roadway approach will not occur on prime agricultural land and will occur on agricultural land that: is located around the periphery of an urban area; is low in productivity and declining in quality due in part to its proximity to Swain Slough; is negligible in size relative to the overall size of the subject farm tract; and will have a negligible impact on

grazing productivity on the subject farm tract. Furthermore, there is no alternative that could avoid or further minimize agricultural conversion while still fulfilling the purpose of the project to bring the bridge up to current standards. The overall bridge replacement project will also not induce urban development inconsistent with Coastal Act section 30250, adversely affect the productivity or viability of agricultural uses on adjoining areas, nor compromise an established urban-rural boundary or otherwise result in any urban-rural land use conflicts. The Commission thus finds that the proposed conversion of 0.07 acres of grazing land is consistent with Coastal Act section 30241.

H. Archaeological Resources

Section 30244 of the Coastal Act states:

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

The project area lies within the traditional territory of the Wiyot tribe. At the time that Euro-Americans first made contact in this region, the Wiyot lived almost exclusively in villages along the protected shores of Humboldt Bay and near the mouths of the Eel and Mad Rivers. Today, representatives of the Wiyot Tribe are the Table Bluff Reservation Wiyot Tribe, the Blue Lake Rancheria, and the Bear River Band of the Rohnerville Rancheria.

Roscoe and Associates conducted an archaeological investigation and prepared a report for the subject project in January 2013. The investigation included a review of archaeological and historical literature pertinent to the project area and general region; a review of the files at the North Coastal Information Center; consultation with local tribal representatives; and a Phase I archaeological survey of the project area. The field survey conducted in 2012 found no cultural resources.

The Native American Heritage Commission (NAHC) was asked to search their sacred lands database for the project area. Those groups and individuals indicated by the NAHC were consulted by writing on August 14, 2012 and included Tribal Historic Preservation Officers (THPOs) for the Bear River Band of the Rohnerville Rancheria, the Wiyot Tribe, and the Blue Lake Rancheria. All three THPOs responded requesting to be informed if prehistoric artifacts or sites were uncovered during the archaeological study or project implementation. The THPO for the Bear River Band of the Rohnerville Rancheria commented on the sensitivity of the site and was present during a portion of the field survey, after which she had no further concerns.

Because of the large lapse in time since the archaeological study was conducted, Commission staff referred the application to the three THPOs again on December 23, 2019. The THPOs of the Blue Lake Rancheria and the Bear River Band of the Rohnerville Rancheria replied that they are comfortable with recommending that the development be conditioned with required protocol for the inadvertent discovery of archaeological resources (because the area of potential project ground disturbance

remains the same as when Roscoe & Associates conducted the negative archaeological survey in 2012).

In response to the request of the THPOs, to ensure protection of any cultural resources that may be discovered at the site during project construction, the Commission attaches **Special Condition 13**. This condition requires that if an area of cultural deposits or human remains is discovered during the course of the project, all construction must cease and a qualified cultural resource specialist, in consultation with the THPOs of the Wiyot Tribe, the Bear River Band of Rohnerville Rancheria, and the Blue Lake Rancheria, must analyze the significance of the find. To recommence construction following discovery of cultural deposits or human remains, the applicant is required to submit a supplementary archaeological plan for the review and approval of the Executive Director and obtain a permit amendment for any changes the Executive Director determines are not de minimis in nature and scope.

Therefore, the Commission finds that the development, as conditioned, is consistent with Coastal Act section 30244.

I. Visual Resources

Section 30251 of the Coastal Act states in applicable part:

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 of visually degraded areas.

Although the project area affords no views of Humboldt Bay and is not located in a designated Coastal Scenic or Coastal View area identified in the certified Humboldt County LCP, the overall visual quality of the project area is high, and the existing unassuming bridge design is visually compatible with the surrounding rural, agricultural landscape (See Exhibit 7 for pictures of the existing bridge).

Although the new bridge will be fourteen feet wider and seventeen feet longer than the existing bridge, the new bridge will not adversely affect visual resources because its design eliminates the need for piers and RSP in the slough, and its longer span avoids any constriction of the slough channel by the bridge abutments, allowing more open views of the channel. The proposed development will also improve visual resources through proposed invasive dense-flowered cordgrass removal and removal of RSP, concrete, and other debris from the slough channel.

Both the existing and proposed new bridges are simple structures that allow road travelers a variety of views of scenic agricultural lands as they approach and travel across the bridge. The existing bridge's railing is comprised of painted white timbers without end protection at the bridge corners, while the proposed bridge will have

concrete guard rails with end protection. The new railing is a Type 85³² concrete post-and-beam bridge rail with concrete posts spaced 6.5 feet apart, center to center (See Exhibit 8 for a drawing and picture of this style of bridge rail). The concrete railing is three feet high above the bridge deck with a six-inch-tall steel hand railing attached to the top. The additional hand railing height is necessary for the safety of bicyclists and pedestrians, as the new bridge will have 5-foot-wide shoulders that will accommodate non-motorized traffic. The proposed visually permeable barrier rail will protect public views of the surrounding scenic agricultural land from the bridge deck.

Overall, the proposed development will not alter natural landforms as post-project elevations and gradients will substantially match existing conditions. The relatively flat proposed bridge with short, see-through guard rails will not obstruct public views, and will be visually unobtrusive and compatible with the surrounding flat, scenic agricultural land.

Therefore, the Commission finds that the proposed development will minimize the alteration of natural landforms, protect public views, and be visually compatible with the character of the surrounding areas, consistent with Coastal Act section 30251.

J. Public Access

Section 30210 of the Coastal Act requires that maximum public access shall be provided consistent with public safety needs and the need to protect natural resource areas from overuse. Section 30212 of the Coastal Act requires that access from the nearest public roadway to the shoreline be provided in new development projects, except where it is inconsistent with public safety, military security, or protection of fragile coastal resources, or where adequate access exists nearby or agriculture would be adversely impacted. Section 30211 of the Coastal Act requires that development not interfere with the public's right to access gained by use or legislative authorization. Section 30214 of the Coastal Act provides that the public access policies of the Coastal Act shall be implemented in a manner that takes into account the capacity of the site and the fragility of natural resources in the area. In applying these sections, the Commission considers whether public access is necessary to avoid or offset a project's adverse impact on existing or potential access.

³² The Type 85 Bridge Rail is a soon-to-be published bridge type that has been designed in order to meet the Manual for Assessing Safety Hardware (MASH) 2016 guidelines and be eligible for Federal Aid. The Type 85 Bridge Rail is similar to the 80 Bridge Rail that has been approved for numerous bridge projects within the coastal zone. Notable differences between the Type 80 and Type 85 Bridge Rails include that the Type 85 Bridge Rail has: (1) increased capacity for MASH impact loads; (2) deeper post offset and increased curb height to reduce the chance of wheel snag; (3) increased view through the rail with larger vertical space from the curb to the bottom of the beam; (4) sloped top of curb to increase view through the bridge rail; and (5) increased rail height of 36 inches (the Type 80 height is 32 inches) to prevent vehicles from going over the rail (Information from Caltrans website: <https://dot.ca.gov/programs/research-innovation-system-information/roadside-safety-research-group/california-type-85-concrete-post-and-beam-bridge-rail>).

Pine Hill Road is proposed to be closed to all non-construction traffic during the course of the construction period,³³ which is expected to last for approximately 6 months during the year of construction (from the beginning of May until November). A temporary detour will be used during this time to divert traffic away from Pine Hill Road and onto Herrick Avenue, which runs parallel to Pine Hill Road about one-third of a mile to the north and intersects with the same north-south connector roads [Elk River Road to the west and Myers Avenue to the east of the project area; See Exhibit 3, Page 9 for detour plans]. Construction materials and equipment will be delivered to the site from Highway 101 via Elk River Road to the west and Herrick Avenue and Meyers Avenue to the east.

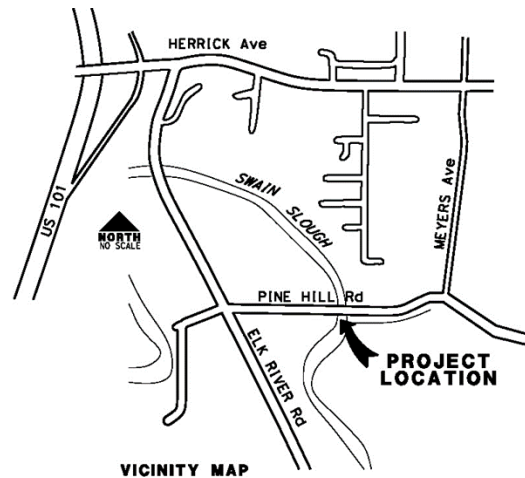


Figure 13. Map showing detour roads.

Approximately 500 truck trips will be required over the six-month period.

Pine Hill Road does not provide direct access to any public coastal access points. The bridge over Swain Slough is located east of Highway 101, over 4,000 feet due east of Humboldt Bay. Pine Hill Road is a rural, approximately 20-foot-wide, lightly-travelled³⁴ road largely surrounded by agricultural lands. The road serves as an alternate, secondary route between Elk River Road and Meyers Avenue to the more heavily traveled Herrick Avenue,³⁵ and is primarily used by local residents from nearby residential neighborhoods and farms.

Because Pine Hill Road is lightly traveled and does not provide direct coastal access, and because a short detour exists that provides access to the same areas as Pine Hill Road, the road closure will not have a significant impact on public access. In addition, because of the project site's location inland of Highway 101, the proposed construction truck traffic on local roads will not impact public access to the Humboldt Bay waterfront. Ultimately, the development as proposed will enhance public access in that the new bridge and surrounding roadway approaches will be wide enough to accommodate five-

³³ As discussed further elsewhere in this report, closing the road allows for (1) the new bridge to be constructed on the existing roadway alignment and (2) the paved approach roadways to be used for staging and stockpiling during construction. Constructing the new bridge on the same alignment and staging and stockpiling in the paved roadway minimizes impacts to surrounding wetlands and agricultural lands.

³⁴ A 2009 traffic count recorded an average daily traffic of 341 vehicles per day on Pine Hill Road.

³⁵ While Pine Hill Road is a local road, Herrick Avenue is a major arterial out of southern Eureka.

foot-wide shoulders on each side, which will enhance public safety for vehicles, pedestrians, and bicyclists using this stretch of Pine Hill Road.

Therefore, the development will have no significant adverse effect on public access, and the Commission finds that the development is consistent with the public access policies of the Coastal Act.

K. California Environmental Quality Act

The County of Humboldt, acting as lead agency for the project for CEQA purposes, found the project statutorily exempt from CEQA pursuant to sections 15301 (Existing Facilities) and 15302 (Replacement or Reconstruction) of the CEQA Guidelines.

Section 13096 of Title 14 of the California Code of Regulations requires Coastal Commission approval of CDP applications to be supported by a finding showing the application, as modified by any conditions of approval, is consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved 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'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)).

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 Coastal 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, which are hereby incorporated by reference, 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 that 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.

1-19-0356 (Humboldt County)

APPENDIX A – Substantive File Documents

Application File for Coastal Development Permit (CDP) 1-19-0356.

County of Humboldt certified Local Coastal Program.

California Coastal Commission (2015, August 12; including October 2018 Science Update adopted November 7, 2018). California Coastal Commission sea level rise policy guidance: Interpretive guidelines for addressing sea level rise in local coastal programs and coastal development permits.