

State of California
Department of Fish and Wildlife



Memorandum

Date: August 28, 2020

To: Mr. Zachary Gifford
California Department of Transportation, District 4
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Governor's Office of Planning & Research

Aug 31 2020

STATE CLEARINGHOUSE

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From: Mr. Gregg Erickson, Regional Manager
California Department of Fish and Wildlife-Bay Delta Region, 2825 Cordelia Road, Suite 100, Fairfield, CA 94534

Subject: U.S. Highway 101 Cordilleras Creek Bridge Replacement Project, Initial Study/Mitigated Negative Declaration, SCH No. 2020070578, City of Redwood City, San Mateo County

The California Department of Fish and Wildlife (CDFW) has reviewed the Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed U.S. Highway 101 Cordilleras Creek Bridge Replacement Project (Project) pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.¹ Pursuant to our jurisdiction, CDFW is submitting comments on the IS/MND as a means to inform the California Department of Transportation (Caltrans) as the Lead Agency, of our concerns regarding potentially significant impacts to sensitive resources associated with the proposed Project.

PROJECT LOCATION AND DESCRIPTION SUMMARY

Caltrans proposes to replace the existing Cordilleras Creek Bridge (Bridge #35-0019) located on United States (US) Highway 101 at post mile (PM) 7.13 in Redwood City, San Mateo County, in the State of California. The existing bridge is at the end of its service life and in need of replacement. The Project includes two build alternatives. Alternative 1 will replace the existing bridge with a new bridge that consists of a triple-box culvert. The culverts will be 10 feet by 10 feet in size; the existing culverts are 8 feet by 10 feet. Alternative 2 consists of replacing the existing bridge with a single-span bridge. Both alternatives will also include replacement of the existing drainage system, construction of a new retaining wall on the southbound side, minor reconfiguration of Cordilleras Creek, replacement of Median Barrier Guard Rails (MBGR) with Midwest Guard Rails (MGS), replacement of existing vehicle detector loops, as well as, the installation of safety lighting in the median. Installation of new fields of rock slope protection (RSP) along Cordilleras Creek on the east side of the bridge will also be conducted.

¹ CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

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CDFW ROLE

CDFW is a Trustee Agency with responsibility under CEQA §15386 for commenting on projects that could impact fish, plant and wildlife resources. CDFW is also considered a Responsible Agency if a project would require discretionary approval, such as permits issued under the California Endangered Species Act (CESA), the Native Plant Protection Act, the Lake and Streambed Alteration (LSA) Program and other provisions of the Fish and Game Code that afford protection to the State's fish and wildlife trust resources.

LAKE AND STREAMBED ALTERATION AGREEMENT

The Project has the potential to impact resources including mainstems, tributaries, floodplains as well as marsh complexes associated with Cordilleras Creek. If work is proposed that will impact the bed, bank channel or upland riparian habitat, including the trimming or removal of trees and riparian vegetation please be advised that the proposed Project may be subject to LSA Notification for impacts to drainage systems that connect to tributaries of main stem creeks and tributaries that occur within the Project Biological Study Area (BSA). CDFW requires an LSA Notification, pursuant to Fish and Game Code section 1600 et. seq., for or any activity that may substantially divert or obstruct the natural flow; change or use material from the bed, channel, or bank including associated riparian or wetland resources; or deposit or dispose of material where it may pass into a river, lake or stream. Work within ephemeral streams, washes, watercourses with a subsurface flow, and floodplains are subject to notification requirements.

CALIFORNIA ENDANGERED SPECIES ACT

Please be advised that a CESA Incidental Take Permit (ITP) must be obtained if the Project has the potential to result in take of species of plants or animals listed under CESA, either during construction or over the life of the Project. Under CESA, take is defined as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill." Issuance of an ITP is subject to CEQA documentation. If the Project will impact CESA-listed species, early consultation is encouraged, as significant modification to the Project and mitigation measures may be required in order to obtain a CESA Permit. The Project has the potential to result in take of the following species listed under CESA: salt-marsh harvest mouse (*Reithrodontomys raviventris*), State Endangered and Fully Protected.

ENVIRONMENTAL SETTING

The state special-status species that have the potential to occur in or near the Project site, include, but are not limited to:

- Salt-marsh harvest mouse (*Reithrodontomys raviventris*), State Endangered and Fully Protected

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- California's Ridgeway's rail (*Rallus obsoletus obsoletus*), State Fully Protected
- Alameda song sparrow (*Melospiza melodia pusillula*), State species of special concern
- Western snowy plover (*Charadrius alexandrinus nivosus*), State species of special concern
- Steelhead – Central California Coast Distinct Population Segment (*Oncorhynchus mykiss*), Federally Endangered
- White tailed kite (*Elanus leucurus*), State Fully Protected
- Nesting birds
- Native and Rare Plants

COMMENTS AND RECOMMENDATIONS

CDFW acting as a Responsible Agency, has discretionary approval under CESA through issuance of an ITP and LSA Agreement as well as other provisions of the Fish and Game Code that afford protection to the State's fish and wildlife trust resources. CDFW would like to thank you for preparing the NOA and CDFW recommends the following updates, avoidance and minimization measures be imposed as conditions of Project approval by the lead agency, Caltrans, to ensure all Project-related impacts are mitigated to below a level of significance under CEQA:

COMMENT 1: Preferred Alternative and Design Analysis

Upon review of the proposed Project alternatives, CDFW recommends that the lead agency analyze and prepare a new bridge design alternative that fully spans the bankfull channel width. A bridge structure that fully spans the bankfull channel width will promote natural sediment transport patterns, provide unaltered fluvial debris movement, restore functional continuity and connectivity to the floodplain, provide fish passage for species like Central California Coast steelhead (Federally Endangered) and may provide opportunities for terrestrial wildlife connectivity. A bankfull spanning bridge structure can also help to reduce shear stresses and erosive velocities acting on the abutment channel banks which can help to eliminate the need for rock riprap in these areas. In addition, with the eventual rise in sea levels, lengthening the bridge opening will result in increased structure resiliency to climate change.

CDFW oppose alternatives currently presented due to the following: Alternative 1 recommends construction of a three-barrel, 10-foot by 10-foot, box culvert. This alternative represents a slight increase in size to the existing structure but represents the reinstallation of a similar structure that has created the current over-accumulation of sediments within the existing culvert and added to the degradation of the structure. CDFW does not support a multi-barrelled culvert structure at the Project location. Alternative 2 is a single-span bridge that does not fully span the bankfull channel and has an alignment that does not align correctly to stream flows. The proposed bridge opening is approximately 31 feet, 10 inches.

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CDFW strongly recommends incorporation of the following design principles into the new bridge design alternative that fully spans the channel width to ensure the replacement structure allows the full functionality of Cordilleras Creek within its floodplain: (1) Design a bridge structure width 1.3 times the bankfull channel width to incorporate a larger than bankfull width of the existing channel to support a self sustaining stream-floodplain corridor and reduce the sediment load build up that currently exists; (2) Integrate bio-technical engineering revetments in lieu of rock slope protection into the Project design to avoid permanent impacts that result in an anthropogenic, hardscape structure with no habitat value within the bed, bank and channel.

Please reference the Federal Highway Administration's Hydraulic Engineering Circular No. 23 (HEC-23) Volume 1 - *Bridge Scour and Stream Instability Countermeasures: Experience, Selection, and Design Guidance*, the NCHRP Report-544 *Environmentally Sensitive Channel and Bank-Protection Measures*, and Caltrans' Design Information Bulletin No. 87-01 *Hybrid Streambank Revetments: Vegetated Rock Slope Protection* for design details of various bio-technical engineering revetments that may be appropriate to offset permanent impacts and address fish passage as well as wildlife connectivity to reduce impacts below a level of significance.

CDFW recommends that the lead agency provide the following additional studies for the proposed alternative:

- (1) Hydrological analysis for the low and high design flows for fish passage, the bankfull flow or the 2-year flood event as a bankfull flow surrogate, and peak design flows (e.g. the 5-year, 10-year, and 100-year flood events);
- (2) Hydraulic analysis that provides development of the velocities, depths, shear stresses, and scour conditions acting on the channel bed and banks. This analysis must include inclusion of localized tidal events and future proposed sea level rise conditions; and
- (3) Geomorphic analysis that includes stream channel stability (both vertical and lateral stability), cross section analysis, and a longitudinal profile at the existing channel thalweg at unique and repeatable geomorphic features.

Please reference the *California Salmonid Stream Habitat Restoration Manual*, Parts IX and XII, for guidance in developing design flows for fish passage, data needs for a geomorphic analysis, and structure development that allows ecological connectivity above and below the stream crossing structure. CDFW strongly recommends that the lead agency engage in early coordination with CDFW's Conservation Engineering Branch on how to proceed with an appropriate design to adequately handle flow conveyance, sediment loads, and the effects of sea level rise within the Cordilleras Creek system.

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COMMENT 2: Nesting Birds

CDFW encourages Project implementation outside of the bird nesting season, which extends from February through early September. However, if anthropogenic structure work activities, ground-disturbing or vegetation-disturbing activities must occur during the nesting season, the Project applicant is responsible for ensuring that implementation of the Project does not result in violation of the Migratory Bird Treaty Act or Fish and Game Code. To evaluate and avoid for potential impacts to nesting bird species, CDFW recommends incorporating the following mitigation measures, and that these measures be made conditions of approval for the Project.

Recommended Mitigation Measure 1: Nesting Bird Surveys

A qualified biologist conduct pre-activity surveys for active nests no more than seven (7) days prior to the start of ground or vegetation disturbance and every fourteen (14) days during Project activities to maximize the probability that nests that could potentially be impacted are detected. CDFW also recommends that surveys cover a sufficient area around the Project site to identify nests and determine their status. A sufficient area means any area potentially affected by the Project. Prior to initiation of ground or vegetation disturbance, CDFW recommends that a qualified biologist conduct a survey to establish a behavioral baseline of all identified nests. Once Project activities begins, CDFW recommends having the qualified biologist continuously monitor nests to detect behavioral changes resulting from the Project. If behavioral changes occur, CDFW recommends halting the work causing that change and consulting with CDFW for additional avoidance and minimization measures.

Recommended Mitigation Measure 2: Nesting Bird Buffers

CDFW recommends a minimum no-disturbance buffer of 250 feet around active nests of non-listed bird species and a 500-foot no-disturbance buffer around active nests of non-listed raptors. These buffers are advised to remain in place until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or on-site parental care for survival. Variance from these no-disturbance buffers is possible when there is compelling biological or ecological reason to do so, such as when the Project site would be concealed from a nest site by topography. CDFW recommends that a qualified biologist advise and support any variance from these buffers.

Comment 3: Fish Passage Assessment

Senate Bill 857 (SB-857), which amended Fish and Game Code 5901 and added section 156 to the Streets and Highways Code states in section 156.3, "For any project using state or federal transportation funds programmed after January 1, 2006, [Caltrans] shall insure that, if the project affects a stream crossing on a stream where anadromous fish are, or historically were, found, an assessment of potential barriers to fish passage is done prior to commencing project design. [Caltrans] shall submit the assessment to

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the [CDFW] and add it to the CALFISH database. If any structural barrier to passage exists, remediation of the problem shall be designed into the project by the implementing agency. New projects shall be constructed so that they do not present a barrier to fish passage. When barriers to fish passage are being addressed, plans and projects shall be developed in consultation with the [CDFW].

CDFW strongly recommends incorporation of the language noted above as well as a discussion of Cordilleras Creek as identified in the fish passage assessment database (US 101, PM 7.13, San Mateo County), Fish Passage Assessment Database ID# 733784, fish barrier status: unknown. The fish passage section should discuss the current status of the crossing locations noted in the California Fish Passage Assessment Database, conduct first pass and or second pass fish assessments, as necessary, as well as, provide images of the upstream and downstream ends of water conveyance structures. CDFW requests a fish passage discussion section is included to address these potentially significant impacts through the following avoidance and minimization measure, which should be made a condition of approval by the lead agency.

Recommended Mitigation Measure 1: Fish Passage Assessment

To evaluate potential impacts to native fish species and fisheries resources, Caltrans shall submit the assessment to CDFW and add it to the CALFISH database. If any structural barrier to passage exists, remediation of the problem shall be designed into the Project by the implementing agency. New projects shall be constructed so that they do not present a barrier to fish passage. When barriers to fish passage are being addressed, plans and projects shall be developed in consultation with CDFW.

COMMENT 4: Light Impact Analysis and Discussion

Page 1-5 of the IS/MND notes that safety lights will be installed in the median barrier for both alternatives of the Project. No further information is provided on the type, location or specification outputs of the proposed lighting. CDFW recommends including additional details on the proposed safety lighting and if the lighting represents a potentially significant impact, the IS/MND should describe the type, quantity, location and specification outputs [in kelvin-scale and nanometers (wavelengths)] of all proposed new and replacement lighting installations. To accomplish this, the IS/MND should provide an analysis of the current lighting regime known to be present on-site as well as an analysis of the proposed changes in the lighting regime that will occur as a result of new or replacement lighting installations through the development and comparison of Isolux diagrams described in measure 1 below. The Isolux diagrams should illustrate the area and intensity over which artificial lighting will create additional light impacts over the natural landscape. Artificial lighting has the potential to create a significant impact because unlike the natural brightness created by the monthly cycle of the moon, the permanent and continuously powered lighting fixtures create an unnatural light regime that produces a constant light output, 365 days a year that can have a cumulatively significant impact on fish and wildlife populations. The IS/MND should

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include a discussion in the Biological Resources section of the potentially significant impacts that could be created by increased permanent light installations or replacements or new installations to determine the extent of the impacts to rare, threatened, endangered, nocturnal and migratory bird species known to occur within the Project vicinity including but not limited to saltmarsh harvest mouse, migratory birds and native fish species. CDFW recommends the following avoidance and minimization measures are incorporated.

Recommended Mitigation Measure 1: Light Impact Assessment and Avoidance

The lead agency shall be required to submit to natural resource agencies, 30 days prior to the initiation of construction Isolux diagrams that note current light levels present during pre-Project conditions and the predicted Project light levels that will be created upon completion of the Project. Within 60 days of Project completion, the lead agency shall conduct a ground survey that compares predicated light levels with actual light levels achieved upon completion of the Project through comparison of Isolux diagrams. If an increase from the projected levels to the actual levels is discovered additional avoidance, minimization or mitigation measures may be required in coordination with the natural resource agencies.

Recommended Mitigation Measure 2: Light Output Limits

All LED's or bulbs installed as a result of the Project shall be rated to emit or produce light at or under 2,700 kelvin that results in the output of a warm white color spectrum.

Recommended Mitigation Measure 3: Vehicle Light Barriers

Solid concrete barriers at a minimum height of 3.5 feet should be installed in areas where they have the potential to reduce illumination from overhead lights and from vehicle lights into areas outside of the roadway. Barriers should only be utilized as a light pollution minimization measure if they do not create a significant barrier to wildlife movement. Additional barrier types should be employed when feasible, such as plastic inserts (privacy slats) into the spacing of cyclone fencing to create light barriers into areas outside the roadway.

Recommended Mitigation Measure 4: Reflective Signs and Road Striping

Retro-reflectivity of signs and road stripping should be implemented throughout the Project to increase visibility of roads to drivers and reduce the need for electrical lighting. Reflective highway markers have also been proven effective to reduce raptor collisions on highways in California's central valley if installed along highway verges and medians.

COMMENT 5: Threatened, Endangered, Rare and Native Plant Species

CDFW recommends that the Project area be surveyed for special-status plants by a qualified botanist following the "Protocols for Surveying and Evaluating Impacts to

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Special-Status Native Plant Populations and Natural Communities,” which can be found online at <https://wildlife.ca.gov/Conservation/Survey-Protocols>. This protocol, which is intended to maximize detectability, includes identification of reference populations to facilitate the likelihood of field investigations occurring during the appropriate floristic period. In the absence of protocol-level surveys being performed, additional surveys may be necessary. Rare plants known to occur within the vicinity of the Project include but are not limited to saline clover and Delta tule pea.

Recommended Mitigation Measure 1: Threatened, Endangered, Rare and Native Plants

A Qualified Biologist shall conduct a survey during the appropriate blooming period for all special-status plants that have the potential to occur within the Project site prior to the start of construction. Surveys should be conducted following the *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Sensitive Natural Communities*, prepared by CDFW, dated March 20, 2018². If special-status plants are found, the Project will be re-designed to avoid impacts to special-status plants to the greatest extent feasible. If impacts to special-status plants cannot be avoided completely during construction, compensatory mitigation and on-site restoration will be implemented and the plan provided for CDFW review and approval. A Qualified Biologist in this context should be knowledgeable about plant taxonomy, familiar with plants of the region, and have experience conducting botanical field surveys according to vetted protocols. If take of any species listed under CESA cannot be avoided either during Project activities or over the life of the Project, a CESA ITP is warranted (pursuant to Fish and Game Code Section 2080 *et seq.*).

COMMENT 6: Tidal Marsh Species Assessment and Avoidance

According to multiple records in the CNNDDB, the Project is located within and adjacent to habitat that may be suitable foraging and nesting habitat for tidal marsh species including California clapper rail (CCR) also known as, Ridgeway’s rail, a California Fully Protected Species also protected under and the federal Migratory Bird Treaty Act (MBTA). The Project is also located within and adjacent to suitable habitat for the salt marsh harvest mouse (SMHM), a California Fully Protected Species and State Listed Endangered species, according to multiple records in the California Natural Diversity Database. CDFW recommends the following avoidance and minimization measures are included in the draft IS/MND to reduce impacts below a level of significant.

Recommended Mitigation Measure 1: CCR and Tidal Marsh Species

Work may not be conducted in CCR habitat between February 1 and August 31 unless surveys indicate the species is not present. If Project activities within 700 feet of CCR habitat will be conducted during the nesting season (February 1 to August 31) then multiple, pre-construction, call back surveys shall be required prior to initiation of Project activities. A minimum of four surveys must be conducted between January and April, a

² <https://www.wildlife.ca.gov/Conservation/Survey-Protocols#377281280-plants>

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minimum of 2-3 weeks apart. The listening stations will be established at 150-meter intervals along road, trails, and levees that will be affected by Project implementation. CCR vocalization recordings will be played at each station.

For CCR, each listening station will be occupied for a period of ten minutes, followed by one minute of playing CCR vocalization recordings, then followed by one additional minute of listening. Sunrise surveys will begin 60 minutes before sunrise and conclude 75 minutes after sunrise (or until presence is detected). Sunset surveys will begin 75 minutes before sunset and conclude 60 minutes after sunset (or until presence is detected). Surveys will not be conducted when tides are greater than 4.5 NGVD. A GPS receiver will be used to identify call location and distance. The call type, location, distance, and time will be recorded on a data sheet. CDFW reserves the right to provide additional measures to this agreement in the event rail species are detected. If CBR/CCR are detected through surveys, then Project activities will not occur within 700 feet of an identified calling center. If the activity occurs where the Project site is across a major channel or slough from the Project site greater than 700 feet in distance the activity may continue. If bird activity is surveyed or discovered within the buffer limits immediate consultation with CDFW is required.

If a CCR is observed within the Project area at any time, work shall be stopped immediately by a qualified biologist and the rail species will be allowed to leave the area on its own. If the rail species does not leave the area, then no work shall commence until CDFW has made a determination on how to proceed with work activities. Daily monitoring surveys of Project sites shall occur for CCR until the Project is complete. If an injured or dead CCR is discovered at the Project sites, consultation with CDFW is required immediately.

Recommended Mitigation Measure 2: Tidal Marsh Species

In Project locations where suitable or potentially suitable tidal marsh and pickle weed habitat is present, a qualified biologist shall conduct pre-construction surveys for SMHM in any areas designated for vegetation disturbance, sediment removal, bank protection, vegetation management, operation of large equipment, staging, or access within seven days prior to commencing work and immediately preceding equipment mobilization in an area where Project activities will occur. The qualified biologist shall have previous SMHM experience and shall be approved by CDFW to conduct the surveys. If SMHM activity is detected or a SMHM is discovered, immediate consultation with CDFW is required before work may continue.

If a mouse of any species is observed within the Project area, work shall be halted immediately by the qualified biologist within 300 feet of discovery and the mouse shall be allowed to leave the work area on its own. If the mouse does not leave the area, no work shall commence until CDFW can reasonably conclude that no take shall occur. Temporary, exclusionary fencing shall be installed around the work area defined in the Project description and at access roads for each site immediately following vegetation removal, and before excavation activities begin. The fence should be made of non-

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woven material (i.e., heavy gauge plastic) that does not allow SMHM to pass through or over. The biologist/biological monitor must ensure the fence remains an effective barrier to prevent entry of SMHM into work area. Alternative PVC exclusion systems may also be employed. Daily inspection and monitoring of the areas with the potential for SMHM shall occur by the Qualified Biologist throughout the course of the Project. Upon completion of fence installation a biological monitor may begin monitoring all work within 250 feet of tidal or pickle weed habitats as determined by the CDFW approved biologist. The biologist shall inspect the work area and adjacent habitats to determine if SMHM are present for a minimum of once per week for the duration of the Project. The biologist/biological monitor shall ensure the exclusionary fence has no holes and the base remains buried. The fenced area will be inspected daily to ensure that no mice are trapped. If any mice are found along or inside the fence work shall be stopped and the mice will be closely monitored until they move away from the construction area of their own accord. The qualified biologist/biological monitor shall remain on-site while work activities are occurring.

SMHM may not be handled or captured at any time during site preparation or Project activities. If an injured or dead SMHM is discovered at the Project site, consultation with CDFW is required immediately before work can proceed.

CONCLUSION

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California's fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

Questions regarding this letter or further coordination should be directed to Mr. Robert Stanley, Senior Environmental Scientist (Specialist), at (707) 428-2093 or Robert.Stanley@wildlife.ca.gov; or Mr. Craig Weightman, Environmental Program Manager at (707) 944-5577 or Craig.Weightman@wildlife.ca.gov.

cc: State Clearinghouse #2020070578