

State of California
Department of Fish and Wildlife



Memorandum

Date: November 2, 2022

To: Juliane Smith
California Department of Transportation
District 4
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DocuSigned by:

Erin Chappell

From: Erin Chappell, Regional Manager

California Department of Fish and Wildlife-Bay Delta Region, 2825 Cordelia Road, Suite 100, Fairfield, CA 94534

Subject: Interstate 680 – Alameda Creek Bridge Scour Repair Project, Draft Initial Study with Proposed Mitigated Negative Declaration, SCH No. 2022100088, Alameda County

The California Department of Fish and Wildlife (CDFW) has reviewed the Notice of Completion (NOC) for the draft Initial Study with Proposed Mitigated Negative Declaration (IS/MND) for the Interstate 680 (I-680) Alameda Creek Bridge Scour Repair Project (Project), pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.¹ CDFW is submitting comments on the draft 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.

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (*Id.*, § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW is also submitting comments as a **Responsible Agency** under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's Lake and Streambed Alteration (LSA) regulatory authority (Fish & G. Code, § 1600 et seq.). Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act

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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(CESA) (Fish & G. Code, § 2050 et seq.), the Project proponent may seek related take authorization as provided by the Fish and Game Code. Pursuant to our jurisdiction, CDFW has the following concerns, comments, and recommendations regarding the Project.

PROJECT LOCATION AND DESCRIPTION

Caltrans proposes scour repair at the Alameda Creek Bridge (Br. No. 33-0047) on I-680 in Alameda County, near the Town of Sunol, from post mile (PM) 10.15 to 10.16. The Project also proposes to reconstruct the median barrier on the approach slab, rehabilitate the bridge deck with polyester concrete in both directions and reconstruct bridge joint seals.

Temporary Creek Diversion/Dewatering

A temporary creek diversion will be installed that consists of two coffer dams, one 50 feet upstream of the work area to prevent inflow, and one 50 feet downstream. A cutoff wall may be necessary to reduce the flow of water through the substrate under the upstream dams. The cutoff wall will consist of a two-foot-deep by two-foot-wide trench spanning the width of the creek with impenetrable material placed below grade to reduce seepage under the dam into the work area.

Scour Repair

The eroded area between piers 8 and 9, 40 feet wide, 20 feet deep, and 27 feet long will be repaired. After the creek channel is diverted, the scour area will be excavated to 5.25 feet; excavated materials will be saved and protected for reuse. A gravel filter system would be installed before placing 3 feet of granular filter material and backfilling with 2.25 feet of rock slope protection (RSP). The Alameda Creek channel will be regraded and shaped to resemble upstream channel conditions. A slight centerline depression in the channel will allow for a low-flow channel to form.

Bridge Structure

The Project will cold plane the bridge deck by removing 1.5-inch asphalt and repaving with 0.75-inch polymer concrete in both directions. The approach slabs at the north and south end of the bridge will be reconstructed. Construction will not extend beyond the limits of the existing paved roadway. New approach slabs will be installed in the same location that the existing approach slabs will be demolished and removed from. As part of the roadway reconstruction, the existing median barrier would be replaced.

Creek Realignment

Alameda Creek will be realigned to the center of bridge piers 8 and 9. The creek bed between piers 8 and 9 will be excavated to a depth of 5.25 feet. A one-to-two-foot layer of clean river cobble will be placed in the excavation to create a new low-flow channel.

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The new low-flow channel will be 950 square feet and designed specifically to improve fish spawning habitat, including deeper pools. All work in the creek will be completed in one construction season.

Staging Area and Access Road

The staging area will be under the bridge deck, between Bent 5 and Bent 7. The bridge deck or mainline shoulder will not be used for storing equipment or materials for work in the creek. Preparation of the area will include clearing and grubbing. Gravel will then be placed on top of a filter fabric on the unpaved portions of the construction staging area. Heavy equipment, such as excavators or bobcats, will enter the staging area. Staging areas will be restored within one year. The staging area would be restored to existing conditions upon completion of the Project.

Revegetation and Channel Restoration

Tree and vegetation removal will be minimized to the maximum extent feasible. Trees and vegetation outside of clearing and grubbing limits will be protected from operations, equipment, and materials storage. In areas of temporary construction impact, appropriate replacement native vegetation will be planted within Caltrans right-of-way (ROW).

REGULATORY AUTHORITY

Lake and Streambed Alteration Agreement Notification

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 generally subject to notification requirements.

Fish and Game Code 5901

Except as otherwise provided in this code, it is unlawful to construct or maintain in any stream in Districts 1, 138, 112, 178, 2, 214, 212, 234, 3, 312, 4, 418, 412, 434, 11, 12, 13, 23, and 25, any device or contrivance that prevents, impedes, or tends to prevent or impede, the passing of fish up and down stream.

Fully Protected Species

Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take, except for collecting these species for necessary scientific research and relocation of a fully protected bird species for the protection of livestock. Take of any fully protected species is prohibited, and CDFW cannot authorize

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their take in association with a general project except under the provisions of a Natural Communities Conservation Plan (NCCP), 2081.7 or a Memorandum of Understanding for scientific research, including efforts to recover fully protected, threatened or endangered species. "Scientific Research" does not include an action taken as part of specified mitigation for a project, as defined in Section 21065 of the Public Resources Code.

California Endangered Species Act

Please be advised that a CESA Permit must be obtained if the Project has the potential to result in "take" of plants or animals listed under CESA, either during construction or over the life of the Project. Issuance of a CESA Permit is subject to CEQA documentation; the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. 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. CEQA requires a Mandatory Finding of Significance if a project is likely to substantially impact threatened or endangered species (CEQA section 21001(c), 21083, and CEQA Guidelines section 15380, 15064, 15065). Impacts must be avoided or mitigated to less-than-significant levels unless the CEQA Lead Agency makes and supports Findings of Overriding Consideration (FOC). The CEQA Lead Agency's FOC does not eliminate the Project proponent's obligation to comply with Fish and Game Code, section 2080. More information on the CESA permitting process can be found on the CDFW website at <https://www.wildlife.ca.gov/Conservation/CESA>.

COMMENTS AND RECOMMENDATIONS

COMMENT 1: Project Design Analysis and Coordination

General Recommendation: Engage in early coordination with CDFW Conservation Engineering Staff and Habitat Conservation Staff for in-channel and proposed aquatic habitat designs to ensure the Project is developed in compliance with Fish and Game Code §5901 and Streets and Highway Code §156.3 – §156.4:

Recommendation 1 – Design Coordination: Early coordination with CDFW Habitat Conservation Program and Conservation Engineering Branch is recommended to provide review and analysis of any proposed staging, access roads, structures or Project elements with the potential to impact fish and wildlife resources. CDFW Conservation Engineering Branch should be provided engineered drawings, a basis of design report and Project specifications during the initial design process, prior to design selection and re-initiating design consultation at 30% design at minimum and through the permitting process for review and comment as identified in the Interagency Agreement (Agreement Number 43A0398).

Recommendation 2 – Site-Specific Stream Analysis: LSA Notification will be needed for the Project and the hydraulic analysis as summarized within the basis of design

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report above should be submitted when Notification is provided. CDFW recommends the hydraulic analysis include field measurements using cross-section stations twenty to thirty times the overbank channel width upstream and downstream of the bridge. Each cross section should occur in at least twenty-foot intervals upstream and downstream of the Alameda Creek bridge as the center point.

Recommendation 3 – Adult and Juvenile Salmonid Fish Passage: Project design for adult and juvenile salmonid passage should meet requirements from the California Salmonid Stream Habitat Restoration Manual, Part XII - Fish Passage Design and Implementation (CDFW, 2009). Specifically, the stream simulation design approach should be evaluated for feasibility to mimic natural conditions up and downstream the Project location. A major advantage to the stream simulation design approach is hydraulic modeling for the determination of fish passage hydraulic criteria (fish passage design flows, maximum velocities, minimum depths, dissipation of turbulence, etc.) for adult and juvenile salmonids is not required. Hydraulic characteristics under the bridge structure should simulate a natural streambed and achieve the same passage conditions as the natural channel for aquatic organisms such as salmonids (CDFW, 2009).

Recommendation 4 – Fish Spawning Gravel and Gravel Filter Design: Proposed granular filter design should be coordinated closely with CDFW Conservation Engineering Staff and follows the principles outlined in the *Federal Highway Administrations' Hydraulic Engineering Circular No. 23 (HEC-23) - Bridge Scour and Stream Instability Countermeasures-Third Edition Volume 2* (Lagasse et al, 2009) and *Caltrans' Design Information Bulletin No. 87-01 – Hybrid Streambank Revetments* (Caltrans, 2014) for design guidance on granular filter designs. Fish spawning gravel size selection should also be conducted in close coordination with CDFW. Gravel should consist of clean, creek-run rock, 0.25 to 10.2 centimeters in size, but site-specific gravel size should be determined by site specific conditions in coordination with CDFW.

COMMENT 2 – Bridge Runoff and Capture Systems

Issue: The Project could increase impervious surfaces at the Project site that can cause concentrated run-off into Alameda Creek. The Project currently proposes no system to contain roadway runoff before it enters Alameda Creek. Impervious surfaces, stormwater systems, and storm drain outfalls have the potential to significantly affect fish and wildlife resources from polluted water and by altering the hydrograph of natural streamflow patterns via concentrated run-off that enters creeks and systems from the road.

Evidence the impact would be significant: Urbanization (e.g., impervious surfaces, stormwater systems, storm drain outfalls) can modify natural streamflow patterns by increasing the magnitude and frequency of high flow events and storm flows (Hollis 1975, Konrad and Booth 2005). A review by Eisler (1987) indicates elevated incidence of tumors and hyperplastic diseases, and some circumstantial evidence about cancers, in fish in areas with high sediment Polycyclic Aromatic Hydrocarbon (PAH) levels.

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Arsenic, cadmium, chromium, lead, mercury, nickel, and zinc have been detected in streambed sediments and Stormwater Runoff from Bridges in the tissue of fish, indicating bioaccumulation of these metals in the environment (MacCoy and Black, 1998). Lead concentrations in benthic insects, and nickel and cadmium levels in certain fish were found to be related to traffic density and sediment levels of these constituents (Van Hassel, 1980). Acute toxicity and mortality have also been tied to immediate road runoff from a compound occurring in tires, 6PPD-Quinnone (Tial, 2021).

Recommendation 1 – Bridge Capture Runoff System: The Project design should include a bridge capture runoff system to prevent direct runoff of untreated water on the bridge decks from entering Alameda Creek. The bridge runoff system should direct runoff to a land-based bio-filtration system or a mechanical filter system to avoid, minimize and treat any discharge water.

Recommendation 2 – Bridge Material Capture System: The Project Description should include additional details about the impacts created by the temporary scaffold to bed, bank, channel or riparian habitat and provide a detailed description of the additional avoidance and minimization measures to be employed that will prevent material from entering the Old River.

Recommended Measure – Concrete Monitoring: A concrete monitor shall be on-site during all concrete pours that have the potential for material to enter Alameda Creek. The monitor shall have the authority to halt construction if necessary to prevent pollution. No pouring of concrete shall occur at night. If curing compounds are proposed on-site, they shall be approved in advance by CDFW and follow the curing periods on the product label. A concrete pour monitoring log shall also be kept that notes the date, time, type of concrete and quantity of concrete installed. A concrete spill plan shall also be developed in advance of construction for CDFW review and approval.

COMMENT 3: Site-Specific Impact Analysis and Enhancements

Issue: The IS/MND describes Caltrans intent to off-set impacts from filling existing scour pools in Alameda Creek by “creating a new low-flow channel designed specifically to improve fish spawning habitat, including deeper pools...” CDFW is unclear what creation of deeper pools specifically means. The IS/MND describes the scour pool as low-quality breeding habitat for California red-legged frog (CRLF) and other amphibian species but does not provide a rationale for this characterization. A more detailed biological assessment of the scour pools habitat value is needed to understand potential Project impacts to instream resources. Similarly, more detailed information about the proposed mitigation is required in order for CDFW to determine if the habitat values have been enhanced or maintained. CDFW is concerned the mitigation as proposed could result in a net-loss of stream resources by reducing or changing aquatic habitat complexity, stream depths and/or velocities.

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Evidence the Impact Would be Significant: Instream pools provide different habitat function and value to aquatic resources than riffles used for fish spawning. Pools create habitat complexity that is important for common and special status amphibians and other aquatic life, particularly during low flow periods. Pools are typically the deepest instream features where water remains in stream during dry season for amphibians and other species to complete their life cycle. Although pools beneath bridge and other infrastructure may be created by scour, over-time they can become naturalized to the surrounding environment.

Recommendations: Snorkel surveys should be performed at the existing scour pool to document species diversity and abundance during spring and summer months. In addition, field measurements of the existing scour pool should be taken to determine its water volume. The IS/MND should provide the results of field surveys and measurements and also include a description of the existing pool feature history. The IS/MND should also explain in more detail what creation of deeper pools entails and if they will exceed the dimensions and habitat value of currently existing pools or if there will be a net loss of available aquatic habitat.

Recommendation for Project Impacts to Fish and Wildlife Resources 1:

Restoration and Mitigation Planning: CDFW strongly recommends that the lead agency develop a mitigation plan in coordination with CDFW for any permanent Project impacts that cannot be avoided that will be subject to LSA or CESA related permitting and include that plan as part of the updated IS/MND. The mitigation plan should include in detail any proposed on and/or off-site mitigation needs necessary to compensate for net-loss of river or stream resources including but not limited to the bed, bank, channel, upland riparian habitat and scour pools. CDFW recommends the Project incorporate large woody debris and bio-engineering concepts over rock and other hard-scape designs to the greatest extent feasible. CDFW also recommends proposed mitigation plan(s) include details such as engineered design drawings, mitigation location(s), proposed actions, monitoring, success criteria and any corrective actions.

Recommendation for Project Impacts to Fish and Wildlife Resources 2: Night-

Work Analysis: The IS/MND should identify the proposed number of nights necessary to complete work in order to adequately avoid impacts to nocturnal species such as amphibians that have the potential to occur at this site.

COMMENT 4: Bat Assessment and Avoidance

Issue: The proposed work has the potential to result in the permanent and temporary impacts to roosting bats. If there is a permanent loss of roosting area within the bridge structure that results from sealing joints and repairing the bridge this may represent a potentially significant impact to bats at this location.

Evidence the impact would be significant: Ninety three percent of the rare bats in California either use or are likely to use bridges. A total of 18 species use bridges in one

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way or another (Erickson, 2002). According to the California National Diversity Database (CNDDDB), potentially suitable habitat exists within the Project for species such as; pallid bat (*Antrozous pallidus*), Yuma myotis (*Myotis yumanensis*) and Townsends big-eared bat (*Corynorhinus townsendii*) (CNDDDB, 2022). Pallid bats and many myotis species utilize bridges as day roosts, night roosts and are commonly found on bridges (Erickson, 2002). Modification of bridges may reduce the number of, or restrict the range of bats at this site.

Recommended Mitigation Measure 1 – Bat Habitat Assessment: Investigations, analysis and focused surveys should begin a minimum of two years in advance of Project initiation. A qualified biologist should conduct a habitat assessment within the Project limits for suitable bat roosting habitat. The habitat assessment shall include a visual inspection, sound analysis survey and night roost exit survey. The surveys should focus on the bridge and features within 200 feet of the work area for potential roosting features including trees, crevices, portholes, expansion joints and hollow areas (bats need not be present). The IS/MND should also include a section that discusses the results of the suitable habitat assessment and if any bats or signs of bats (feces or staining at entry/exit points) are discovered.

Recommended Mitigation Measure 2 – Bat Habitat Monitoring: If potentially suitable bat roosting habitat is determined to be present a qualified biologist shall conduct focused surveys at the bridge utilizing night-exit survey methods, sound analyzation equipment methods and visual inspection from March 1 to April 15 or September to October 15 prior to construction activities. If the focused survey reveals the presence of roosting bats, then the appropriate exclusionary or avoidance measures will be implemented prior to construction during the period between March 1 to April 15 or September 11 to October 15. Potential avoidance methods may include temporary, exclusionary blocking, one way-doors or filling potential cavities with foam. Methods may also include visual monitoring and staging of work at different ends of the Project to avoid work during critical periods of the bat life cycle to allow roosting habitat to persist undisturbed throughout the course of construction. Exclusion netting or adhesive roll material shall not be used as exclusion methods. If presence/absence surveys indicate bat occupancy, then construction should be limited from occurring during the species maternity period.

Recommended Mitigation Measure 3 – Permanent and Temporary Bat Structures: Temporary structures should be installed at the site provide habitat for the timeframe when access to the bridge is excluded until construction is complete. If structures within the bridge utilized for roosting are permanently altered as a result of construction the lead agency should design and install permanent roost structures on the bridge in coordination with CDFW. Please reference the *Caltrans Bat Mitigation: A Guide to Developing Feasible and Effective Solutions Manual* (H.T. Harvey, 2019) for more information.

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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 resources. 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) 339-6534 or Robert.Stanley@wildlife.ca.gov; or Mr. Wesley Stokes, Senior Environmental Scientist (Supervisory), at (707) 339-6066 or Wesley.Stokes@wildlife.ca.gov.

cc: State Clearinghouse #2022100088

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