**State of California**
**Department of Fish and Wildlife**

# M e m o r a n d u m

**Date:** February 17, 2023



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**From:** DocuSigned by: Erin Chappell B77E9A6211EE486... Ms. Erin Chappell, Regional Manager
**California Department of Fish and Wildlife-Bay Delta Region, 2825 Cordelia Road, Suite 100, Fairfield, CA 94534**

**Subject:** State Route 1 Centerline Rumble Strips Project (04-4G780), Initial Study/Negative Declaration**,** SCH No. 2023010380, Sonoma County

The California Department of Fish and Wildlife (CDFW) has received the Notice of Availability for the draft Initial Study/Negative Declaration (IS/ND) for the State Route (SR) 1 Centerline Rumble Strips Project (Project), pursuant the California Environmental Quality Act (CEQA) and CEQA Guidelines.[1] CDFW is submitting comments on the draft IS/ND as a means to inform the California Department of Transportation (Caltrans) as the Lead Agency, of our concerns regarding potentially significant impacts to biological resources associated with the proposed Project.

## CDFW ROLE

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

[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.

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 (CESA) (Fish & G. Code, § 2050 et seq.), the Project proponent may seek related take authorization as provided by the Fish and Game Code.

## PROJECT LOCATION AND DESCRIPTION

Caltrans proposes to install centerline rumble strips, wet-night visibility striping and widen shoulders at 50 locations along State Route (SR) 1 in Sonoma County. The installations will occur over a 58.58-mile stretch from the Marin County line to the Mendocino County line.

### Centerline Rumble Strips

Caltrans proposes to install incontiguous sections of ground-in centerline rumble strips on SR-1 at 50 locations as specified in Table 1-1 on page 1-2 to page 1-4 of the IS/ND. The centerline rumble strips will be discontinued where the speed limit is equal to or less than 35 miles per hour (mph). The locations include a minimum of 25 feet in advance of highway intersections, pedestrian crossings, cattle guards, commercial or town centers, and left-turn lane openings. For the installation of the ground-in centerline rumble strips a grinder truck would grind the existing striping from the centerline, and grind in the centerline rumble strip. The highway surface will be cleaned immediately after with a vacuum truck and application of new 6-inch-wide wet-night visibility striping will be completed with a striping truck, within the same closure limits.

### Shoulder Widening

The shoulder widening will increase the existing shoulder to 6 feet at 50 locations (Table 2-3) on page 2-4 to page 2-5 of the IS/ND. In areas with an existing width of shoulder that is relatively flat or on an uphill grade, extensive embankment creation, excavation, or retaining structures will not be required to construct the shoulder widening. In locations where the existing width of the shoulder is not adequate, the depth of excavation at the shoulder widening locations will be 1.8 feet. The total new impervious surface (NIS) due to the shoulder widening will impact 4.05 acres. The Project will provide sufficient shoulder width to accommodate bicyclists where off-road bicycle facilities are not feasible. The widening and paving of the 6-foot shoulders from the existing edge of travel way (ETW) will be completed separately from the rumble strip and restriping operation. Shoulder closures are anticipated during construction of the shoulder widening. A temporary barrier system will be placed along the ETW. Locations of the shoulder widening will require clearing and grubbing of vegetation.

### Drainage Systems

Drainage improvements will include new impervious areas created by the shoulder widening that will increase roadway runoff. The existing drainage facilities, such as

cross culverts and roadside ditches, have the capacity to handle this increase. Drainage locations within the widened shoulder will cause the embankment slope to encroach into the existing roadside ditch, reducing its capacity. To minimize this impact, design strategies such as reducing the proposed 3-foot choker and/or steepening the side slope to a 2:1 ratio will be employed. The choker is the area between the outside edge of the shoulder and the top of the embankment slope, and its purpose is to drain runoff away from the highway, towards the embankment. Any existing ditches or swales impacted by the Project will need to be reestablished. The Lead Agency has not determined if excavation required for the Project would impact any culverts. Concrete backfill will be required along the portion of a culvert with less than 2 feet of material above the top of the culvert. For any drainage inlets that will be impacted, the frames and grates or the inlet tops will be adjusted to grade.

## REGULATORY REQUIREMENTS

### Lake and Streambed Alteration Agreement Notification

CDFW requires an LSA Notification, pursuant to Fish and Game Code § 1600 et. seq., for 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.

### 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 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 Pub. 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 (Pub. Resources Code, §§ 21001(c), 21083, and CEQA Guidelines §§ 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, § 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**

CDFW offers the following comments and recommendations to assist the Lead Agency in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on biological resources.

**COMMENT 1: Lake and Streambed Alteration Program Notification**

**Issue:** The IS/ND does not provide adequate detail of the permanent and temporary impacts that have the potential to occur within the bed, bank, channel, and riparian habitat associated with the Project. This could have the potential for a substantial adverse effect on riparian habitat.

**Recommendation:** CDFW recommends the Lead Agency include a determination on the permanent and temporary impacts to bed, bank, channel, and upland riparian habitat necessary to widen the roadway and modify culverts. The updated IS/ND should also specify which segments of the roadway will require roadside slope increases and additional hardscape installations.

**Recommendation 1 – Seasonal Work Window:** Measure PF-BIO-1 in the IS/ND should be updated to incorporate specific seasonal work windows within aquatic features that may impact bed, bank, channel, or riparian habitat. The recommended work window is June 15 to October 15. The measure should also be updated to include language that indicates no work shall occur within 24 hours of a rain event predicated at a chance of 40% or more according to the National Weather Service.

**Recommendation 2 – Culvert Impact Inventory Report:** A culvert impact inventory should be developed that places additional columns in Table 1-1 and/or Table 2-3 of the IS/ND. The additional columns should include a column for temporary impacts, permanent impacts, and a column for fish passage status in the Fish Passage Database (Fish-PAD; Biological Information and Observation System (BIOS); DS-69). A column should also be included for terrestrial crossing potentials at each culvert location within the Project limits. A final column should be included that identifies if excavation and/or increase of the slope is necessary to install Project related components identified in the Project Description of this comment letter.

**Recommendation 3 – Geo-Textiles, Filter-Fabric and Cementitious Material:** CDFW recommends the design or re-design of any culverts within the Project does not

employ geo-textiles, filter-fabric, or cementitious material within rock slope protection fields of drainage outfalls. A granular filter design should be incorporated in coordination with CDFW Conservation Engineering Staff. The design should follow 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. In the event work is occurring within a salmonid bearing system, fish spawning gravel should be incorporated into the channel design where appropriate. Size selection should be conducted in close coordination with CDFW. Gravel should consist of clean, creek-run rock, 0.25 to 10.2 centimeters in size.

**Recommendation 4 - Restoration and Mitigation Planning:** CDFW strongly recommends 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 permitting and include that plan as part of the updated IS/ND. The mitigation concept provided in BIO-AMM-19 for restoration, enhancements or mitigation at a 1:1 ratio for permanent impacts does not appear to appropriately reduce potentially significant impacts to fish and wildlife resources below a level of significance. 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, tree trimming, tree removals, hardscape materials and geo-textile fabric within the bed, bank or channel of a stream, loss of riparian vegetation and mature trees, and expansion of existing infrastructure footprint(s). CDFW 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 5 – Culverts in High Fire Severity Zones:** Figure 3-1 of the IS/ND includes 15 High Fire Severity Zones maps that indicate the Project occurs within Moderate, High and Very High Fire Severity Zones. CDFW recommends the reliance on non-plastic-based materials in instances where culverts are modified, replaced, or reconstructed to prevent the potential for fire events to melt the material and increase micro-plastic pollution within the environment. CDFW recommends the use of corrugated metal pipe or steel pipes for permanent culvert replacement or modification applications and when employing temporary stream diversions systems in High to Very High Fire Severity Zones.

**Recommendation 6 – Design Coordination with HabCon and Conservation Engineering:** Early coordination with the CDFW Habitat Conservation Program (HabCon) and the 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. Provide the CDFW Conservation Engineering Branch 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.

**COMMENT 2: Bridge Runoff Capture Systems**

**Issue:** The IS/ND indicates 4.05 acres of impervious surface will be impacted and the roadway widening will increase the surface area of impervious surfaces throughout the Project. The Project Description also indicates that numerous culverts and drainage systems have the potential to be modified. Impervious surfaces, stormwater systems, and storm drain outfalls have the potential to significantly affect fish and wildlife resources from polluted water by altering the hydrography of natural streamflow patterns via concentrated run-off that enters streams and associated systems from the road. The IS/ND PF-BIO-5 indicates bio-filtration strips and swales will be employed to the maximum extent practicable. The Project Description wording is vague because it does not indicate if the installation of any new bio-filtration strips or swales will actually occur or where they may be placed. This could have the potential for a substantial adverse effect on sensitive species.

**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. Arsenic, cadmium, chromium, lead, mercury, nickel, and zinc have been detected in streambed sediments and Stormwater Runoff 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, that has been linked to Coho mortality (Tian, 2021).

**Recommendation 1: Bridge Capture Runoff System:** CDFW recommends the Project design incorporate specific bio-filtration strips, swales and other storm water capture run-off systems throughout the Project. The storm water capture runoff systems shall prevent direct runoff of untreated water from the roadway into creeks, drainages or swales. The stormwater runoff system shall direct runoff to a land-based bio-filtration system or a mechanical filter system to avoid, minimize and treat any discharge water**.** Reference the *Bridges Stormwater Runoff from Bridges Final Report to Joint Legislation Transportation Oversight Committee*, beginning on page 2-12 of the report for examples of an appropriate runoff capture system design.

**COMMENT 3: Tree Removal Analysis**

**Issue:** Page 3-6, Section 3.3.1 of the IS/ND indicates that trees will be trimmed or removed throughout the Project. The IS/ND does not provide a map, figure, or specific inventory of trees proposed for trimming or removal which would allow CDFW to assess the impact of the activity to fish and wildlife resources as it pertains to trees. This could have the potential for a substantial adverse effect on riparian habitat and sensitive species.

**Recommendation 1 - Tree Inventory Report:** Provide a tree inventory that includes a map or figure that identifies the location, species, diameter at breast height, estimated age, and overall health of all trees proposed for removal and trimming.

**Recommendation 2 - On-Site Preservation of Forest Trees and Riparian Trees:** Impact to trees should be avoided to the maximum extent feasible and additional designs should be incorporated to minimize impacts on mature native trees and riparian resources.

**Recommendation 3 - Restoration and Mitigation Planning:** Reference **Recommendation 4 - Restoration and Mitigation Planning** from the **COMMENT 1: Lake and Streambed Alteration Program Notification** section of this comment letter.

**COMMENT 4: Northern Spotted Owl Avoidance and Minimization**

**Issue:** Northern Spotted Owl (NSO) is federally listed as threatened under the Endangered Species Act (ESA) and is CESA listed as threatened. The potential impacts identified within the IS/ND to suitable NSO habitat may not adequately describe all the potential permanent and temporary impacts to NSO habitat. If the proposed measures are not updated as identified in the section below for NSO, the Project could have the potential for a substantial adverse effect on sensitive species.

**Evidence the Impact is Significant:** The Project occurs within potential NSO habitat according to Spotted Owl Predicted Habitat (BIOS; DS-2185) and within NSO Habitat for Connectivity Modeling (BIOS; DS-876). In addition, 200 detections occur within 5 miles of the Project, 6 of those detections occur within 0.33 to 1.07 miles as noted on page 3-17 and 3-18 of the IS/ND. The Project also proposes the removal of an unspecified number of trees and indicates impact to 0.178 acres (temporary and permanent combined) of NSO habitat. CDFW recommends additional habitat analysis is conducted as the impact footprint may be larger than initially described. NSO is typically associated with old-growth or mature forests, but NSO can utilize a wide variety of habitat types, including oak woodlands. They exhibit flexibility in their use of different forested areas for nesting, roosting, and feeding requirements. Typical habitat characteristics include a multi-storied structure and high canopy cover (Thome, 1999). Impacts from the Project would be significant if NSO nests or nesting trees were cut down or if nearby nesting NSO were exposed to elevated sound levels or human presence that would cause nest abandonment.

**Recommendation 1 – Nest Avoidance Buffer and Seasonal Work Window:** AMM BIO-6 and AMM BIO-7 should be updated as follows: To reduce impacts to less-than-significant, no Project activities shall occur within 0.25 miles of NSO nesting habitat from March 15 to August 31, unless NSO surveys have been completed by a qualified biologist following the U.S. Fish and Wildlife Service (USFWS) *Protocol for Surveying Proposed Management Activities That May Impact Northern Spotted Owls*, dated (revised) January 9, 2012 and the survey report is accepted by CDFW in writing. If breeding NSO are detected during surveys, a 0.25-mile no-disturbance buffer zone shall be implemented around the nest. NSO surveys shall be conducted for each year Project construction occurs. No Project activities shall occur within the buffer zone until the end of the breeding season, or a qualified biologist determines that the nest is no longer active, unless otherwise approved in writing by CDFW. Alternate buffer zones may be proposed by a qualified biologist after conducting an auditory and visual disturbance analysis following the USFWS guidance, *Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California*, dated October 1, 2020. Alternate buffers must be approved in writing by CDFW. Survey results shall be provided to the Spotted Owl Observations Database at https://wildlife.ca.gov/Data/CNDDB/Spotted-Owl-Info. If NSO are detected, CDFW and the USFWS shall be immediately notified.

**Recommendation 2 – California Endangered Species Act Consultation for Northern Spotted Owl:** If Project activities may result in take of NSO, the Project proponent shall apply for and obtain a CESA Incidental Take Permit from CDFW prior to beginning the Project.

**COMMENT 5: Terrestrial Wildlife Connectivity**

**Issue:** The Project has the potential to significantly impact terrestrial wildlife connectivity over a 58.58-mile linear segment of highway on SR-1 in Sonoma County. The surrounding habitat supports threatened, endangered, special-status and native species including, but not limited to, California Giant Salamander (CGS), Foothill Yellow-Legged Frog (FYLF), California Red-Legged Frog (CRLF) and Red-Bellied Newt (RBN). Page 2-5 to 2-6 of the IS/ND notes drainage system extensions, modifications and roadway widening may require an increase in the slope of the road invert to 2:1. The increase of the slope at the edge of the roadway or modification of multiple culverts may have the potential to create a series of impassable barriers over a 58.58-mile segment of SR-1 that could substantially interfere with the movement of small herpetofauna.

**Evidence the impact would be significant:** California wildlife is losing the ability to move and migrate as habitat conversion and built infrastructure disrupt species habitat and cuts off migration corridors (Senate Bill 790; SB-790; https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202120220SB790). The current baseline condition of the area proposed for construction represents a semi-permeable barrier to wildlife connectivity. Larger wildlife species may cross at their own risk of injury or mortality but smaller species such as herpetofauna would most likely not

cross the highway successfully without incurring injury or mortality. Further modification of the culverts and an increase in the slope at the edge of the roadway along the 58.58-mile segment of SR-1 has the potential to create a non-permeable barrier to terrestrial wildlife connectivity for herpetofauna, even if the construction occurs in focused segments.

Page 3-16 of the IS/ND indicates the Project occurs within the current range of CRLF and 20 California Natural Diversity Database (CNDDB) occurrences reside within 2 miles of the Project. Numerous aquatic resources (e.g., drainages, streams, creeks, and ponds) are also located within 2 miles of the Project. Page 3-17 of the IS/ND indicates FYLF occurs in several creeks in the vicinity of the Project, and suitable non-breeding FYLF habitat is present throughout the Project. There are 11 CNDDB occurrences of FYLF within 2 miles of the Project, most of which are located toward the northern end of the Project limits. Page 3-22 indicates 14 CNDDB occurrences of CGS within 2 miles of the Project. Additionally, surveyors discovered two juvenile CGS within a creek in the Caltrans right-of-way adjacent to Location 49. Page 3-22 of the IS/ND indicates three CNDDB occurrences of RBN within 2 miles of the Project. Wetlands, waters, and riparian and forested areas within the Project vicinity could provide suitable habitat for these species. The Project should incorporate a wildlife connectivity analysis and highway system facility modification designs to ensure connectivity remains and the potential for mortality is reduced for herpetofauna.

**Recommendation Mitigation Measure 1 – Wildlife Connectivity:** Terrestrial connectivity elements such as wildlife friendly culverts, under-crossings, elevated causeways and over-crossings should be programmed into the Project as design features. To inform design and placement of connectivity features, the Lead Agency shall develop a wildlife movement study. The study should occur over a minimum period of 12 months prior to the initiation of construction and preferably be incorporated into the draft IS/ND. The study shall occur within the limits of the proposed Project to develop a baseline understanding of the areas where wildlife movement and crossings are most prevalent. The study should also be utilized to inform Project design to identify areas where wildlife crossing structure(s) installation(s) would result in the largest benefit to rare, threatened, and endangered species, as well as, special-status species and non-special status species for wildlife connectivity. Analysis during the 12-month study shall be utilized to determine the type, size and number of structures that would be most beneficial to facilitate wildlife connectivity (new wildlife crossing culverts, modification of existing culverts, wildlife crossing bridges, etc.). Upon completion of the Project, the wildlife connectivity structures should be studied for an additional 12-month period, at minimum, to determine the effectiveness of structure utilization by wildlife. The protocol for the baseline survey, post-construction surveys, site selection criteria and design criteria for the development of the wildlife connectivity structures should follow the protocols outlined in; *The California Department of Transportation (Caltrans), Wildlife Crossings Design Manual* (Caltrans, 2009) and the *Federal Highway Administration Wildlife Crossing Structure Handbook – Design and Evaluation in North America, Publication No. FHWA-CFL/TD-11-003* (FHWA, 2011).

**Recommendation Mitigation Measure 2 – Wildlife Connectivity:** The Lead Agency should develop a series of heat maps for target species along the SR-1 corridor using high value resource layers including, but not limited to, species presence/absence, drainages, culverts, creeks, road-strike data, and wildlife linkage corridors for pinpointing key wildlife crossing locations with high permeability and potential for use by target species.

**Recommendation Mitigation Measure 3 – Drainage Escape Structures:** The Lead Agency should design and implement, in coordination with the natural resource agencies, escape structures for small herpetofauna when drainage systems and culverts are not conducive for crossing and entrapment within the system is likely. Escape structure can include, but not be limited to, escape ramps, floating refuge buckets and amphibian ladders (McInroy, 2015 and Schelbert, 2009).

**COMMENT 6: Fish Passage Assessment**

**Issue:** Multiple potential fish passage barriers and unassessed locations exist within the identified Project limits. Senate Bill 857 (SB-857), which amended Fish and Game Code § 5901 and added § 156 to the Streets and Highways Code states in § 156.3, “For any project using state or federal transportation funds programmed after January 1, 2006, [Caltrans] shall ensure 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 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].” The modification of unidentified culverts over 58.58 miles on SR-1 could substantially interfere with the movement of native resident or migratory fish.

**Evidence the impact would be significant:** The Project contains stream crossings within areas mapped as historic or current watersheds where anadromous fish are, or historically were found. The species include, but are not limited to, Central California Coast Coho – Critical Habitat and Range (BIOS; DS-3015 and DS-1277), California Coast Fall Chinook Salmon Range (BIOS; DS-1297) and Central California Coast Steelhead and Coastal Steelhead Trout Waters (BIOS; DS-1287 and DS-962). The decline of naturally spawning salmon and steelhead trout is primarily a result of the loss of appropriate stream habitat and the inability of fish to get access to habitat, according to reports to the Fish and Game Commission and by CDFW (CDFW, 1996). Restoration of access to historical spawning and rearing areas should be incorporated into the Project design through barrier modification, fishway installation, or other means (CDFW, 1996).

**Recommendations:** If barriers or unassessed barriers noted within the Project limits are found to be a barrier to fish passage, remediation of the problem should be

designed into the Project by the implementing agency as a Project feature in consultation with CDFW and other natural resource agencies. The fish passage section should discuss the current status of each crossing location noted within the Fish Passage Assessment Database (BIOS; DS-69) from Table 1-1 and Table 2-3 of the IS/ND. First pass and/or second pass fish assessments, as necessary, and images of the upstream and downstream ends of water conveyance structure should be included in the updated IS/ND. Presenting the information in table format with corresponding maps is also strongly recommended.

**Recommended Mitigation Measure 1: Fish Passage Assessment:** To evaluate potential impacts to native fish species and fisheries resources, Caltrans should submit the assessment to 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 CDFW. CDFW shall be engaged prior to design in early coordination and at 30% design at minimum.

**Recommended Mitigation Measure 2: Fish Passage Assessment Table:** The Lead Agency shall develop a table for incorporation into the IS/ND that notes all proposed locations of work identified in Table 1-1 and 2-3 of the IS/ND and provide a corresponding column that indicates known culverts within the location of the proposed work. The table should identify the Fish PAD ID number, barrier status and the results of any primary or secondary fish passage assessments. CDFW will need this assessment and information in order to process an LSA Agreement Notification for the proposed Project.

**Recommended Mitigation Measure 3: Fish Passage Design Coordination:** Caltrans shall engage with CDFW in early and continued coordination before design commences as specified in **Recommendation 6 – Design Coordination with HabCon and Conservation Engineering** from the **COMMENT 1: Lake and Streambed Alteration Program Notification** section of this comment letter.

**COMMENT 7: Bat Assessment and Avoidance**

**Issue:** Page 3-21 of the IS/ND indicates multiple locations have the potential to support bats or contain roosting trees or potential roosting structures and facilities. Multiple bat species are identified within the Project limits as having suitable habitat including, but not limited to; Big Brown Bat (BIOS; DS-1828); Brazilian Free-Tailed Bat (BIOS; DS-2498); Townsends Big-Eared Bat (BIOS; DS-2496) and the Hoary Bat (BIOS; DS-2493). The IS/ND does not identify the extent to which impacts may occur to bats or their habitat from modification of existing structures or the removal of trees, this could result in substantial adverse effect on sensitive species and riparian habitat.

**Recommendation:** Modify measures AMM-BIO-16 and AMM-BIO-17 of the IS/ND to the following:

**Recommended Mitigation Measure 1 – Bat Habitat Assessment:** 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 of 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). A report should be provided by the qualified biologist and incorporated into the subsequent draft IS/ND that includes a section discussing the locations of suitable bat habitat and if any bats or signs of bats (feces or staining at entry/exit points) are discovered. The surveys should occur at least two seasons in advance of Project initiation.

**Recommended Mitigation Measure 2 – Bat Habitat Monitoring:** If potentially suitable bat roosting habitat is determined to be present based on recommended mitigation measure 1 above, a qualified biologist shall conduct focused surveys at the trees, bridge(s), culverts and overpasses. Methods should include utilizing night-exit surveys, sound analyzation equipment and visual inspection within open expansion joints and portholes of the structures. Surveys should occur from March 1 to April 15 or August 31 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 August 31 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 or 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 to avoid the most sensitive stages of the bat species life cycle (maternity/pupping season).

**Recommended Mitigation Measure 3 – Bat Project Avoidance:** If active bat roosts are observed during environmental assessments or during construction, at any time, all Project activities should stop until the qualified biologist develops a bat avoidance plan to be implemented at the Project site. Once the plan is implemented, Project activities may recommence in coordination with the natural resource agencies. The bat avoidance plan should utilize seasonal avoidance, phased construction, as well as, temporary and permanent bat housing structures developed in coordination with CDFW.

**Recommended Mitigation Measure 4 – Permanent Bat Roost Design:** Permanent bat roost structures shall be incorporated into the design of modified structures and on trees within the Project to avoid potentially significant impacts from permanent habitat loss to roosting bats. The structures should be designed in coordination with CDFW and include the appropriate baffle spacing or features to accommodate multiple species of bats as specified in the *Caltrans Bat Mitigation: A Guide to Developing Feasible and Effective Solutions Manual* (H.T. Harvey, 2019).

**COMMENT 8: Light Impact Analysis and Discussion**

**Issue:** Page 3-7 of the IS/NMD indicates temporary construction lights will be employed throughout the Project but the IS/ND does not disclose if any new permanent lights or replacement of previously existing light elements with new lighting technology will occur as a result of construction. Please indicate if new permanent light or replacement light elements are proposed. This could result in substantial adverse effect on sensitive species and riparian habitat.

**Evidence the impact would be significant:** Artificial night lighting can disrupt the circadian rhythms of many wildlife species. Many species use photoperiod cues for communication (e.g., bird song; Miller, 2006), determining when to begin foraging (Stone et al., 2009), behavior thermoregulation (Beiswenger, 1977), and migration (Longcore and Rich, 2004). For nocturnally migrating birds, direct mortality as a result of collisions with anthropogenic structures due to attraction to light (Gauthreux, 2006) is another direct effect of artificial light pollution. There are also more subtle effects, such as disrupted orientation (Poot et al., 2008) and changes in habitat selection (McLaren et al., 2018). Frogs and salamanders are particularly susceptible to artificial light pollution. Light pollution may affect physiology, behavior, ecology, and evolution of frog and salamander populations (Wise, 2007). For example, artificial light levels and timing influences melatonin production in salamanders. Melatonin regulates hormones, reproductive development and behavior, skin coloration, an animal's ability to regulate body temperature, and night vision (Gern, 1986). Reduced survival at the population level can result in smaller populations or populations that disappear altogether. Due to the high potential for migratory birds, songbirds, amphibians and mammals, including nocturnally active state listed and special-status species such as California tiger salamander and American badger, to occur within the Project limits, CDFW recommends no lighting is installed as a result of Project completion to avoid these potentially significant impacts.

**Recommendation:** If new or replacement lighting elements are proposed, CDFW strongly recommends that the Project does not propose to install new artificial light sources, especially in areas where no artificial light previously existed. In areas where new or replacement artificial light sources are installed CDFW recommends incorporation of the following:

**Recommended Mitigation Measure 1 – Light Output Analysis:** The Lead Agency should submit as part of the IS/ND Isolux Diagrams that note current light levels present during Pre-Project conditions and the predicted light levels that will be created upon completion of the Project. If an increase in light output from current levels to the projected future levels is evident, additional avoidance, minimization or mitigation shall be developed in coordination with the natural resource agencies to offset indirect impacts to fish and wildlife species. Within 60 days of Project completion the Lead Agency shall conduct a ground survey that compares projected future 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 also be required in coordination with the natural resource agencies. This analysis should be conducted across all potential alternatives and compared in table and map format.

**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 2700 kelvin that results in the output of a warm white color spectrum.

**Recommended Mitigation Measure 3 – Vehicle Light Barriers:** Solid 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 privacy slats into the spacing of cyclone fencing to create light barriers for areas outside the roadway.

**Recommended Mitigation Measure 4 – Reflective Signs and Road Striping:** Retro-reflectivity of signs and road striping should be implemented throughout the Project to reduce the need for electrical lighting.

**Recommended Mitigation Measure 5 – Light Pole Modifications and Shielding:** All light poles or sources of illumination that will be new or replacement installations of existing light sources should be installed with the appropriate shielding to avoid excessive light pollution into natural landscapes or aquatic habitat within the Project corridor in coordination with CDFW. In addition, the light pole arm length and mast heights should be modified to site-specific conditions to reduce excessive light spillage into natural landscapes or aquatic habitat within the Project corridor. In areas with sensitive natural landscapes or aquatic habitat, the Lead Agency should also analyze and determine if placing the light poles at non-standard intervals has the potential to further reduce excessive light pollution by decreasing the number of light output sources in sensitive areas.

**ENVIRONMENTAL DATA**

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations (Pub. Resources Code, § 21003, subd. (e)). Accordingly, please report any special-status species and natural communities detected during Project surveys to the CNDDB. The CNDDB online field survey form and other methods for submitting data can be found at the following link: https://wildlife.ca.gov/Data/CNDDB/Submitting-Data. The types of information reported to CNDDB can be found at the following link: https://wildlife.ca.gov/Data/CNDDB/Plantsand-Animals.

## FILING FEES

CDFW anticipates the Project will have an impact on fish and/or wildlife, and assessment of filing fees is necessary (Fish and Game Code, § 711.4; Pub. Resources Code, § 21089). Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW.

## 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 #2023010380

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