

State of California
Department of Fish and Wildlife



Memorandum

Date: July 27, 2022

Governor's Office of Planning & Research

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STATE CLEARINGHOUSE

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: Santa Cruz Route 1 Drainage Improvements Project, Mitigated Negative Declaration, SCH No. 2022060678, Monterey and Santa Cruz County

The California Department of Fish and Wildlife (CDFW) has reviewed the draft Mitigated Negative Declaration (MND) for Santa Cruz Route 1 Drainage Improvements (Project), pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.¹ CDFW is submitting comments on the draft 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 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 &

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.

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, as the lead agency proposes to improve existing drainage structures, add traffic lighting, add traffic monitoring systems, and add maintenance vehicle pullouts on State Route 1. Project activities would occur on State Route 1 between post mile 0.0 and post mile 7.94 in Santa Cruz County, and between post mile 101.5 and post mile 102.0 in Monterey County. The Project limits are between Trafton Road in Monterey County and Larkin Valley Road in Santa Cruz County.

Culvert Improvements

Culvert work will occur in Santa Cruz County between post mile 0.0 and post mile 7.94 on State Route 1. The Project will repair or replace culverts that have deteriorated due to age. The Project will not construct new culverts at new locations. There are 18 culvert segments within the Project limits at 13 different post mile locations. Some post mile locations contain multiple culvert segments. The Project will replace 11 culvert segments and repair 7 culvert segments. Culvert sizes vary from 24 inches to 36 inches in diameter, and culvert lengths vary from 15 feet to 500 feet long.

Culvert repairs involve joint repair and installation of lining inside existing pipes and other culvert repairs deemed necessary may be completed. Culvert replacement will involve a cut and cover method or trenchless method. The existing culvert location and the surrounding site conditions will determine which culvert replacement method will be implemented at each culvert location. The cut and cover method involves digging a trench with an excavator to expose the existing culvert for repair or replacement. The trench width depends on the pipe diameter, and the depth and slope are determined by the engineer. The trenchless method includes the pipe jack method, which is accomplished by placing a sending pit on one side of the culvert, and a receiving pit on the other side. Drilling equipment is then used to drill out the existing culvert while pushing a new pipe through horizontally without disturbing the surface above.

Culvert replacement and repair work will require: the use of construction equipment, temporary construction easements, temporary access routes, temporary staging sites, pavement work, temporary traffic control, vegetation clearing, and vegetation restoration. Project construction will do culvert work one location at a time to minimize traffic disruptions.

Traffic Monitoring Systems

Traffic monitoring system work will occur in Santa Cruz County between post mile 0.0 and post mile 7.94 and in Monterey County between post mile 101.5 and post mile 102.0 on State Route 1. The TMS systems are proposed to help improve collection of

information for traffic monitoring. The Project will install several new traffic detection loops. The traffic detection loops will be installed at 19 new locations. In addition, two existing traffic count stations will be relocated and placed behind existing guardrails. A new changeable message sign will also be installed to provide information to the traveling public. The new changeable message sign will be installed at post mile 101.53 in Monterey County, near Trafton Road. Installation of new traffic monitoring elements will require: the use of construction equipment, temporary staging sites, pavement work, temporary traffic control, trenching, vegetation clearing and vegetation restoration.

Electrical Work

Electrical work will occur in Santa Cruz County between post mile 0.0 and post mile 7.94 on State Route 1. The Project will install highway lighting at six new locations. The Project will remove two existing highway luminaires. It is anticipated that the proposed electrical work will occur without considerable disturbance to the traveling public. Electrical work will require: the use of construction equipment, temporary staging sites, temporary traffic control, trenching.

Maintenance Vehicle Pullouts

Six new maintenance vehicle pullouts will be installed in Santa Cruz County on State Route 1. Four of the new maintenance vehicle pullouts will be installed at each of the on-ramps and off-ramps on Airport Boulevard. Beyond-the-gore paving will also be installed at the on-ramp and off-ramp at Airport Boulevard. Two of the new maintenance vehicle pullouts will be installed at the northbound on-ramp at Mar Monte Avenue and at the southbound shoulder of State Route 1. Work on the new maintenance vehicle pullouts will occur one location at a time to minimize traffic disturbances. Completion of each new maintenance vehicle pullout will require: the use of construction equipment, temporary staging sites, and temporary traffic control.

REGULATORY AUTHORITY

Lake and Streambed Alteration Agreement

The Project has the potential to impact stream resources including mainstems, tributaries, drainages and floodplains associated with varied aquatic resource types within the Biological Study Area (BSA) including but not limited to Harkins Slough, Struve Slough, Watsonville Slough, and the Pajaro River. If work is proposed that will impact the bed, bank, channel or riparian habitat, including the trimming or removal of trees and riparian vegetation, please be advised that the proposed Project may be subject to Lake and Streambed Alteration (LSA) 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, bank or channel 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, 1^{3/8}, 1^{1/2}, 1^{7/8}, 2, 2^{1/4}, 2^{1/2}, 2^{3/4}, 3, 3^{1/2}, 4, 4^{1/8}, 4^{1/2}, 4^{3/4}, 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. Fish are defined as a wild fish, mollusk, crustacean, invertebrate, amphibian, or part, spawn, or ovum of any of those animals (Fish & G. Code § 45).

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 Guidelines §§ 21001 subd. (c), 21083, 15380, 15064 and 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>.

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 purposes. “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.

COMMENTS AND RECOMMENDATIONS

CDFW would like to thank Caltrans for preparing the draft MND. 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 reduced below a level of significance under CEQA.

COMMENT 1: Project Design Analysis and Coordination

Issue: The MND does not sufficiently disclose or analyze potentially significant impacts to some fish and wildlife resources. In addition, the MND notes that unidentified culverts may also be modified as a result of Project completion. Site specific locations are needed to ensure culverts are designed to meet the flow capacity of a given system, protect fish passage in fish bearing systems and to ensure potential barriers are remediated.

Recommendation: The updated MND should disclose all potential locations where Project work may occur.

Recommendation 1 – Design Coordination: Early coordination with CDFW Habitat Conservation staff and the CDFW Conservation Engineering Branch is recommended to provide review and analysis of any proposed structures or Project elements with the potential to impact fish and wildlife resources. CDFW Conservation Engineering Branch should be provided engineered drawings and design specification planning sheets 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).

COMMENT 2: Coastal Oak Woodlands, Heritage Oak Trees and Riparian Trees

Issue: The MND has not sufficiently disclosed or adequately analyzed the potentially significant impacts to coastal oak woodlands, individual oak trees and individual riparian trees that may be impacted by the Project. Specifically, the potential age and irreplaceable nature of old-growth and heritage trees proposed for removal within the Project limits have not been adequately described. Page 32 of the MND notes; “The project would temporarily affect approximately 2.66 acres of ruderal communities, approximately 0.32 acre of coast live oak woodland, approximately 0.51 acre of willow woodland, and approximately 0.07 acre of coastal scrub...”. In addition, the lead agency describes the acres of impacts to oak woodlands and riparian habitat but the diameter at breast height (DBH) of individual trees has not been described.

The incorporation of the currently proposed avoidance and minimization measures do not adequately address the potentially significant impacts to oak woodlands, old-growth oak trees and riparian trees because under favorable conditions, oak trees grow fairly slowly and have low crown ratios. The proposed measures to replant sapling trees to offset significant impacts to heritage trees that may exist is not sufficient. The lead agency does not propose permanent protection or long-term management of replacement trees. In addition, the proposed avoidance and minimization measures MM BIO-1: Tree Replacement, MM BIO-2: Landscape Revegetation and MM BIO-3: Invasive Species Abatement do not adequately address the potentially significant impacts to oak woodlands, heritage oak trees and riparian trees. The proposal by the

lead agency to remove 0.32 acre of coast live oak woodland trees and 0.51 acre of willow woodland of undisclosed DBH represents a potentially immitigable significant impact to heritage oak trees and large riparian trees.

Evidence the impact would be significant: Oak woodlands provide important ecosystem functions including habitat for numerous species of wildlife, reductions in soil erosion rates and preservation of water quality. The rapid and extensive land conversions in oak woodlands, and riparian areas within Santa Cruz and Monterey County, coupled with an apparent lack of regeneration of several species draws concern about the long-term survival of native oaks. Fragmentation of oak habitats reduces their ability to provide the full range of ecological benefits, including maintenance of species diversity, as well as soil and watershed protection. Coast live oak (*Quercus agrifolia*) and old-growth oak trees (native oak tree that is greater than 15 inches in diameter) are of particular importance due to increased biological values and increased temporal loss (Tyler et. al., 2002). Loss of old-growth oak trees can have potentially immitigable impacts but also can result in cumulatively significant impacts on fish and wildlife resources that rely on those habitat types to sustain their populations.

Furthermore, the loss of oaks can significantly reduce the restoration potential of a stand as a great deal of time is required to replace them (Tyler et. al., 2002). Therefore, the removal of heritage trees will result in potentially immitigable significant impacts to fish and wildlife resources if additional project avoidance measures are not incorporated into the Project as conditions of approval.

Recommendation 1: The individual DBH of each tree proposed for removal should be disclosed to the natural resource agencies and general public.

Recommendation 2: On-Site Preservation of Oak and Riparian Trees On-Site: The lead agency shall develop additional design alternatives to avoid permanent impacts and removals of large trees within the project limits to preserve on-site. Those alternatives should be incorporated into a revised MND.

COMMENT 3: Project Design Analysis and Coordination: Recommendation Mitigation Measure 1 – Design Coordination. The Project Development Team (PDT) shall incorporate principles to significantly reduce the number of trees removed and maximize protecting trees in place. Once trees are selected for preservation on-site the lead agency shall prepare a tree preservation plan that contains specific tree preservation methods. The plan shall set contractor guidelines for tree protection including; prominently marking protected areas, erecting barricades around designated trees, tree bumpers; avoidance of vehicular traffic or parking in these restricted areas; and prohibit material storage, grading, and dumping of chemicals and other materials in restricted areas. To ensure compliance, contractors should have tree preservation bonds to cover potential noncompliance issues, damage or loss of trees.

Recommendation Measure 2: Off-Site Conservation of Oak and Riparian Trees: If impacts cannot avoid or be avoided to heritage Oak and riparian trees (15 DBH or greater) the lead agency shall permanently preserve oak and riparian tree at an off-site location. The off-site location may be lands with habitats that may be rehabilitated, restored, or preserved and maintained to fully mitigate for the potentially significant impacts. The lands must be protected through fee title, transfer or conservation easement to an appropriate conservation entity to ensure long term preservation and successful implementation of the mitigation. The fish and wildlife resources or environments replaced or substituted for those impacted must be maintained in perpetuity.

Recommendation 3: Individual Tree Inventory Report: The updated MND shall include a tree inventory that includes map key information, species name, common name, diameter at breast height and overall health status for each individual tree on-site.

Recommendation 4: On-Site and Off-Site Restoration Plan: CEQA Guidelines §15126.4 (a) requires lead agencies to consider feasible mitigation measures to avoid or substantially reduce a project's significant environmental impacts. The lead agency shall develop a more in-depth restoration plan in consultation with the natural resource agencies to replace MM-BIO-29, MM-VIS-3 and be included in the MND as a condition of approval. The lead agency shall incorporate details that (1) commits itself to the mitigation, (2) adopts specific performance standards the mitigation will achieve, and (3) identifies the type(s) of potential action(s) that can feasibly achieve that performance standard. The lead agency shall specifically discuss permanent land protection in perpetuity, mitigation/restoration bank credit purchase and more specific acreage restoration areas and requirements in regard to Oak Woodlands and riparian habitat.

COMMENT 4: Santa Cruz Long-Toed Salamander

Issue: The MND states that there will be no effect to Santa Cruz long-toed salamander (*Ambystoma macrodactylum croceum*; SCLTS). The Project is located within a half mile dispersal distance of documented SCLTS occurrences and has the potential to cause impacts to the species. The Project is set to occur within the vicinity of known breeding ponds for SCLTS that include Seascape 1, Seascape 2, Seascape 3, Racehorse Lane, Calabasas, Seuss, Xantus, Olives, Buena Vista 1, and Buena Vista 1.

The Santa Cruz long-toed salamander is an endangered species under CESA (Fish & G. Code, § 2050 et seq.) and a Fully Protected species (Fish & G. Code § 5050). A fully protected species may not be taken or possessed at any time and no authorizations or permits may be issued for their take except for collecting these species for necessary scientific research, those exceptions do not apply to a linear transportation project.

Evidence the impact would be significant: Santa Cruz long-toed salamander has the potential to disperse through the area in suitable upland habitat, such as riparian woodland (U.S. Fish and Wildlife Service (USFWS) 2009). If SCLTS disperse into the

area, the Project has the potential cause direct take of SCLTS through ground excavation, use of heavy machinery, and clearing habitat.

Recommendation 1 – Protocol Survey and SCLTS Impact Assessment: CDFW recommends protocol level surveys be performed as part of the Project to help inform SCLTS avoidance. CDFW also recommends Caltrans includes a discussion on the potential for presence of SCLTS in the MND and maps of that illustrate the locations of breeding ponds and suitable upland habitat in relation to the Project site. To determine the likelihood of SCLTS presence on-site, CDFW recommends conducting a full habitat assessment by gathering information from multiple sources including aerial imagery and topographic lidar maps, historical and recent survey data, field reconnaissance, scientific literature and “positive occurrence” databases such as California Natural Diversity Database (CNDDDB). Survey and monitoring protocols and guidelines for the SCLTS are available at: <https://www.fws.gov/media/guidance-site-assessment-and-field-surveys-detect-presence-or-report-negative-finding-santa>

Recommended Measure 2 - Avoidance of Impacts: The Project shall completely avoid impacts to SCLTS and its potential suitable habitat.

COMMENT 5: Fish Passage Assessment

Issue: Multiple potential fish passage barriers and unassessed locations exist within the identified Project limits, as described in the recommendations section below. 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].”

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 Riffle Sculpin, Pacific Lamprey, Tidewater Goby, Monterey Hitch, South Central California Coast Steelhead (BIOS; DS-1353). 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 the 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 identified below 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. CDFW recommends discussing the following locations as they pertain to fish passage:

Location 1, Larkins Creek, PM 7.73; SR-1, (Latitude: 36.96125; Longitude: -121.86341; Santa Cruz County), Fish Passage Assessment Database ID# 55530, fish barrier status: unknown, requires a detailed survey per results of reconnaissance survey (First Pass).

Location 2, Unnamed tributary to Pacific Ocean, PM 7.46, SR-1, (Latitude: 36.95858; Longitude: -121.8598; Santa Cruz County), Fish Passage Assessment Database ID# 55529, fish barrier status: unknown, requires a detail survey per results of reconnaissance survey (First Pass).

Location 3, Unnamed tributary to Pacific Ocean, PM 6.9; SR-1, (Latitude: 36.95204; Longitude: -121.8524; Santa Cruz County), Fish Passage Assessment Database ID# 55527, fish barrier status: unknown, requires a detail survey per results of reconnaissance survey (First Pass).

Location 4, Unnamed tributary to the Pacific Ocean, PM 6.37; SR-1, (Latitude: 36.94647; Longitude: -121.8466; Santa Cruz County), Fish Passage Assessment Database ID# 734794, fish barrier status: unknown, requires a detail survey per results of reconnaissance survey (First Pass).

Location 5, Unnamed tributary to the Pacific Ocean, PM 5.91; SR-1, (Latitude: 36.94279; Longitude: -121.8403; Santa Cruz County), Fish Passage Assessment Database ID# 734792, fish barrier status: unknown, requires a detail survey per results of reconnaissance survey (First Pass).

Location 6, Unnamed tributary to the Harkins Slough, PM 3.6; SR-1, (Latitude: 36.92884; Longitude: -121.803; Santa Cruz County), Fish Passage Assessment Database ID# 762564, fish barrier status: unknown, requires a detail survey per results of reconnaissance survey (First Pass).

Location 7, Harkins Slough, PM 3.5; SR-1, (Latitude: 36.927504; Longitude: -121.80220; Santa Cruz County), Fish Passage Assessment Database ID# 731806, fish barrier status: unknown, requires a detail survey per results of reconnaissance survey (First Pass).

Location 8, Unnamed tributary to Harkins Slough, PM 3.4; SR-1, (Latitude: 36.9266; Longitude: -121.8007; Santa Cruz County), Fish Passage Assessment Database ID# 731966, fish barrier status: unknown, requires a detail survey per results of reconnaissance survey (First Pass).

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Location 9, Unnamed tributary to the West Branch Sluice Slough, PM 0; SR-1, (Latitude: 36.92068; Longitude: -121.78963; Santa Cruz County), Fish Passage Assessment Database ID# 731864, fish barrier status: unknown, requires a detail survey per results of reconnaissance survey (First Pass).

Location 10, Struve Slough, PM 1.59; SR-1, (Latitude: 36.90731; Longitude: -121.78242; Santa Cruz County), Fish Passage Assessment Database ID# 731729, fish barrier status: unassessed. Survey conducted on 8/31/2021 determined this crossing warrants a detailed second pass survey.

Location 11, Watsonville Slough, PM 1.34; SR-1, (Latitude: 36.9026; Longitude: -121.7792; Santa Cruz County), Fish Passage Assessment Database ID# 731624, fish barrier status: unassessed. Survey conducted on 8/31/2021 and determined this crossing warrants a second pass detailed survey.

Location 12, Unnamed tributary to the Pajaro River, PM 101.7; SR-1, (Latitude: 36.8783; Longitude: -121.7715; Monterey County), Fish Passage Assessment Database ID# 731626, fish barrier status: unknown, requires a detail survey per results of reconnaissance survey (First Pass).

The fish passage section should discuss the current status of the crossing location 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 structure. CDFW requests a fish passage discussion section is included to address this potentially significant impact through the following avoidance and minimization measures, which should be made conditions of approval by the lead agency. Additional actions should be included in the MND as conditions of approval. Examples may include installation of artificial wood rat boxes, bat boxes, essential fish habitat rearing structures and spawning gravel importation to reduce potentially significant impacts to fish and wildlife resources.

Recommended Mitigation Measure 1: Fish Passage Assessment: To evaluate potential impacts to native fish species and fisheries resources, Caltrans shall conduct fish passage assessments as described above and provide the results to CDFW and 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 shall be engaged prior to design in early coordination and at 30% design at minimum and through the permitting process for review and comment as identified in the Interagency Agreement (Agreement Number 43A0398).

COMMENT 6: Wildlife Connectivity

Issue: California wildlife is losing the ability to move and migrate as habitat conversion and built infrastructure disrupt species habitat and cut off migration corridors (Senate Bill 790; SB-790). This Project location occurs within an irreplaceable and essential connectivity corridor. The current baseline condition of the SR-1 corridor represents a semi-permeable to permeable location for terrestrial wildlife connectivity. The proposal to construct alternatives that result in highway lane expansions have the potential to create a non-permeable barrier to terrestrial wildlife connectivity. The proposed increase in the number of travel lanes, proposal for extensive median barriers, edge of pavement barriers, vehicle pullouts and access roads will all significantly expand the width and complexity of the corridor.

Recommendations: CDFW recommends the lead agency utilize terrestrial connectivity elements such as wildlife friendly culverts, directional fencing, strategically placed median barriers, under-crossings, over-crossings and elevated causeways into the Project as design features or conditions of approval. CDFW recommends the following considerations and information be incorporated into the Project MND based on CDFW's 2020 wildlife movement barrier priorities:

Wildlife Movement Barrier: Location 1: Highway 1, segment name; Hwy 1 SCLTS Rio Del Mar/Buena Vista, target species; Santa Cruz long-toed salamander, length miles; 5.214 miles, barrier ID W021.

Recommendation 1 - Wildlife Connectivity: The MND should include the results of a wildlife movement study. CDFW recommends the study occur over a period of at least 12 months prior to the development of designs so terrestrial connectivity structures can be programmed into the Project. The study should occur within the limits of the proposed Project to develop a baseline understanding of the areas where wildlife movement, crossings and mortalities are most prevalent. The study should also be utilized to develop 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 should 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, elevated causeways, etc.). Upon completion of the Project, wildlife connectivity structures and movement corridors should be studied for an additional 6 to 12 month period, at minimum, to determine the effectiveness of the designs. 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).

COMMENT 7: Special-Status Plants

Issue: State threatened, endangered or rare plant species may occur within the Project area. Without appropriate mitigation measures, the Project could significantly impact these species. Potential impacts to special-status plants include disrupting reproduction, mortality to individuals and/or populations. Unauthorized take of plant species listed as threatened, endangered, or rare pursuant to CESA or the Native Plant Protection Act is a violation of Fish and Game Code. Special-status plants are typically narrowly distributed endemic species. These species are susceptible to habitat loss and habitat fragmentation resulting from development, vehicle and foot traffic, and introduction of non-native plant species.

Recommendation 1 – Focused Plant Surveys: CNDDDB strongly encourages the use of CDFW protocols and guidelines. CDFW believes the link below to be the best available methodology for the intended purpose.

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

Recommendation 2 - Plant Avoidance and Buffers: Special-status plant species should be avoided through delineation and establishment of a no disturbance buffer of at least 50 feet from the outer edge of the plant population or specific habitat type required by special-status plant species. If State-listed plant species are identified during surveys and full avoidance of take is not feasible, take authorization through CDFW issuance of an ITP would be required.

COMMENT 8: Light Impact Analysis and Discussion

Issue: A significant portion of the proposed Project within the SR-1 corridor does not contain any overhead or artificial light sources. The Project proposes a new changeable message sign that would be installed at post mile 101.54 in Monterey County. The Project also proposes to install highway lighting at six new locations between post mile 0.0 and post mile 7.94 on State Route 1. Artificial light spillage beyond the prism of the roadway into natural areas may result in a potentially significant impacts through substantial degradation of the quality of the environment. Artificial light pollution also has the potential to significantly and adversely affect biological resources and the habitat that supports them. 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. Continuous light output for 365 days a year can also have cumulatively significant impacts on fish and wildlife populations.

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). Artificial night lighting has also been found to impact juvenile salmonid overwintering success by delaying the emergence of salmonids from benthic refugia and reducing their ability to feed during the winter (Contor and Griffith 1995). 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). There is also growing evidence that light pollution alters behavior at regional scales, with migrants occupying urban centers at higher-than-expected rates as a function of urban illumination (La Sorte et al. 2021). While artificial light pollution can act as an attractant at both regional (La Sorte et al. 2021) and local (Van Doren et al. 2017) scales, there is also evidence of migrating birds avoiding strongly lit areas when selecting critical resting sites needed to rebuild energy stores (McLaren et al. 2018).

Recommendation: Due to the high potential for songbirds, migratory birds, salmonids and nocturnally active State listed and special-status species, CDFW recommends no lighting is installed as part of or as a result of Project in order to avoid potentially significant impacts to biological resources from artificial lighting.

Recommended Measure 1 – Habitat Compensation: For Project elements that require artificial lighting, compensatory mitigation shall be provided for all areas supporting fish and wildlife affected by new or increased light output.

Recommended Measure 2 – Light Output Analysis: 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 shall be included in the MND. 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 special-status species and those measures included in the Project MND. 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 Measure 3 – 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 Measure 4 – 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.

Lara Bertaina
California Department of Transportation

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July 27, 2022

Recommended Measure 5 – 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 Measure 6 – Light Pole Modifications and Shielding: All new or replacement light poles or sources of illumination shall 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 the potential for excessive light pollution caused by decreasing the number of light output sources in sensitive areas.

COMMENT 9: Mitigation Planning for Stream Impacts

Issue: It is unclear if the Project will defer mitigation planning to a later time for Project impacts to stream resources subject to the LSA permitting process.

Recommendation 1 – Mitigation Planning: CDFW strongly recommends that the lead agency develop a mitigation plan in coordination with CDFW for any 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 plan should include in detail any proposed on and/or off-site mitigation needs necessary to compensate for net-loss of stream resources including but not limited to 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 mitigation location(s), proposed actions, monitoring, success criteria and any corrective actions.

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 Will Kanz, Environmental Scientist, at (707) 337-1187 or Will.Kanz@wildlife.ca.gov; or Wesley Stokes, Senior Environmental Scientist (Supervisory), at (707) 339-6066 or Wesley.Stokes@wildlife.ca.gov.

cc: State Clearinghouse #2022060678

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