UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
777 Sonoma Avenue, Room 325
Santa Rosa, California 95404-4731

December 15, 2021 **Refer to NMFS No:** WCRO-2021-02714

Keith Pelfrey, Branch Chief
North Region of Environmental Management-R2 Branch
California Department of Transportation, District 2
1031 Butte Street, MS 30
Redding, California 96001

Re: Endangered Species Act Section 7(a)(2) Biological Opinion, and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for Caltrans' Horse Creek Bridge Replacement Project (EA 02-1H360)

Dear Mr. Pelfrey:

Thank you for your letter of October 12, 2021, requesting consultation with NOAA's National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act of 1973 (ESA) (16 U.S.C. 1531 et seq.) for the Horse Creek Bridge Replacement Project, California Department of Transportation (Caltrans[1]) reference EA 02-1H360. Thank you, also, for your request for consultation pursuant to the essential fish habitat (EFH) provisions in Section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act [16 U.S.C. 1855(b)] for this action. This letter transmits NMFS' final biological opinion and EFH response for the proposed Horse Creek Bridge Replacement Project.

The enclosed biological opinion describes NMFS' analysis of effects on threatened Southern Oregon/Northern California Coast (SONCC) coho salmon (*Oncorhynchus kisutch*) and its designated critical habitat in accordance with section 7 of the ESA. Based on the best scientific and commercial information available, NMFS concludes that the action, as proposed, is not likely to jeopardize the continued existence of the SONCC coho salmon, nor is the project likely to destroy or adversely modify designated critical habitat for this species. NMFS expects the proposed action would result in incidental take of SONCC coho salmon. An incidental take statement with terms and conditions is included with the enclosed biological opinion.

The enclosed EFH consultation was prepared pursuant to section 305(b) of the MSA. The proposed action includes areas identified as EFH for species managed under the Pacific Coast Salmon Fishery Management Plan (FMP). Based on our analysis, NMFS concludes that the

[1] Pursuant to 23 USC 327, and through a series of Memorandum of Understandings beginning June 7, 2007, the Federal Highway Administration (FHWA) assigned and Caltrans assumed responsibility for compliance with Section 7 of the federal Endangered Species Act (ESA) and the Magnuson-Stevens Fishery Conservation and Management Act (MSA) for federally-funded transportation projects in California. Therefore, Caltrans is considered the federal action agency for consultations with NMFS for federally funded projects involving FHWA. Caltrans proposes to administer federal funds for the implementation of the proposed action, and is therefore considered the federal action agency for this consultation.

project would adversely affect Pacific Coast Salmon EFH and we have provided one EFH Conservation Recommendation.

Please contact Mike Kelly at (707) 825-1622, Northern California Office, Arcata, or via email at Mike.Kelly@noaa.gov if you have any questions concerning this section 7 consultation, or if you require additional information.

Sincerely,

Alecia Van Atta
Assistant Regional Administrator
California Coastal Office

Enclosure

cc: Chelsea Tran-Wong, Caltrans, District 2, Eureka, CA
Dr. Richard Lis, California Department of Fish and Wildlife, Yreka, CA
e-file ARN 151422WCR2021AR0213

**Endangered Species Act (ESA) Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response**

Horse Creek Bridge Replacement Project
Siskiyou County, California

NMFS Consultation Number: WCRO-2021-02714
Action Agency: California Department of Transportation

Affected Species and NMFS' Determinations:

| ESA-Listed Species | Status | Is Action Likely to Adversely Affect Species or Critical Habitat? | Is Action Likely to Jeopardize the Species? | Is Action Likely to Destroy or Adversely Modify Critical Habitat? |
|---|---|---|---|---|
| Southern Oregon/North California Coast (SONCC) coho salmon (*Oncorhynchus kisutch*) | Threatened | Yes | No | No |

| **Fishery Management Plan That Identifies EFH in the Project Area** | **Does Action Have an Adverse Effect on EFH?** | **Are EFH Conservation Recommendations Provided?** |
|---|---|---|
| Pacific Coast Salmon FMP | Yes | Yes |

**Consultation Conducted By:** National Marine Fisheries Service, West Coast Region

**Issued By**:

Alecia Van Atta
Assistant Regional Administrator
California Coastal Office

**Date**: December 15, 2021

## TABLE OF CONTENTS

# 1. INTRODUCTION

This Introduction section provides information relevant to the other sections of this document and is incorporated by reference into Sections 2 and 3, below.

## 1.1. Background

NOAA's National Marine Fisheries Service (NMFS) prepared the biological opinion (opinion) and incidental take statement (ITS) portions of this document in accordance with section 7(b) of the Endangered Species Act (ESA) of 1973 (16 USC 1531 et seq.), as amended, and implementing regulations at 50 CFR part 402.

We also completed an essential fish habitat (EFH) consultation on the proposed action, in accordance with section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. 1801 et seq.) and implementing regulations at 50 CFR part 600.

We completed pre-dissemination review of this document using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (DQA) (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The document will be available within 2 weeks at the NOAA Library Institutional Repository [https://repository.library.noaa.gov/welcome]. A complete record of this consultation is on file at the California Coastal NMFS office.

## 1.2. Consultation History

On March 27, 2020, the California Department of Transportation (Caltrans) obtained an official species list.

On April 22, 2020, Caltrans began technical assistance between Caltrans biologist Chelsea Tran-Wong and NMFS biologist Mike Kelly with a request for information on fish presence and numbers in the proposed action area. Technical assistance continued on various issues throughout the consultation period.

On May 8, 2020, Caltrans provided photographs and drone video to Mike Kelly in lieu of a site visit due to COVID-19 travel restrictions.

On February 2, 2021, Chelsea Tran-Wong submitted Klamath River rotary screw trap data, which was provided by the U.S. Fish and Wildlife Service (USFWS).

On February 16, 2021, Chelsea Tran-Wong submitted a hydroacoustic assessment for pile driving, demolition, and blasting activities.

On March 19, 2021, Chelsea Tran-Wong forwarded coho salmon release records from Iron Gate Hatchery, which were provided by the California Department of Fish and Wildlife (CDFW).

On April 30, 2021, Caltrans obtained an updated official species list.

On May 1, 2021, Chelsea Tran-Wong provided a draft Biological Assessment (BA) to Mike Kelly for review.

On July 6, 2021, Mike Kelly provided comments on the draft BA via email.

On September 22, 2021, Chelsea Tran-Wong provided a second draft BA to Mike Kelly for review.

On October 1, 2021, Mike Kelly provided comments on the second draft BA via email.

On October 12, 2021, Caltrans submitted a revised BA and requested initiation of formal section 7 consultation for adverse effects to threatened Southern Oregon/Northern California Coast (SONCC) coho salmon (*Oncorhynchus kisutch*), its designated critical habitat, and Pacific Salmon Essential Fish Habitat (EFH).

On October 13, 2021, NMFS accepted the BA and notified Caltrans that we had initiated formal consultation.

On November 2, 2021, Caltrans submitted data on water velocities to NMFS engineer John Wooster and Karuk Tribe biologist Toz Soto to assess impacts to adult fish passage associated with temporary channel constriction due to in-river work pads left in over-winter. After review, parties determined that adult fish passage through the action area would not be impeded.

On November 2, 2021, Caltrans notified NMFS that the U.S. Army Corps of Engineers determined that the project does not meet thresholds for stormwater treatment; therefore, the permanent stormwater treatments described in the BA (bioswales) are no longer needed and should be disregarded.

On November 30, 2021, Caltrans confirmed that pile driving on or after October 1 would be limited to between 6:00AM and 1:00PM in a given day to minimize potential impacts to adult coho salmon that may migrate through the action area. Caltrans also confirmed that no additional vegetation removal will occur due to blasting and creation of new impervious surface. Caltrans also confirmed that the water drafting intake will be properly screened or isolated to avoid entraining fish.

### 1.3. Proposed Federal Action

Under the ESA, "action" means all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies (see 50 CFR 402.02). Under the MSA, "Federal action" means any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken by a Federal agency (see 50 CFR 600.910).

We considered, under the ESA, whether or not the proposed action would cause any other activities and determined that it would not. The proposed action will not facilitate use of the

affected roads and bridge by vehicles that cannot use the existing facilities, so we do not expect the proposed action to facilitate any new activities.

The proposed action is described in detail in Caltrans' BA (Caltrans 2021) and supplemental materials as described in the Consultation History section above. Project elements that may affect coho salmon or its designated critical habitat, and accompanying measures to minimize impacts, are summarized below, while the remaining project description is incorporated by reference to Caltrans' BA. In the following descriptions, "Caltrans" refers to Caltrans and their construction contractor(s).

Caltrans proposes to replace a dimensionally outdated and scour critical bridge on State Route (SR) 96 over the Klamath River at Post Mile 77.15 in Siskiyou County. The new bridge will be approximately 545 feet long and 44 feet wide and be placed on a new alignment just downstream of the existing bridge. The new soffit (underside of the superstructure) will be approximately 34 feet above the base flow elevation. The new bridge will be a three-span cast-in-place post-tensioned box girder bridge that ends in an 800-foot radius curve. There will be no drainage scuppers on the deck, so stormwater will flow to the ends of the bridge and likely soak in or be filtered through vegetation.

The superstructure would be supported on cantilever seat abutments and concrete piers on cast-in-drilled-hole (CIDH) concrete piles. The distance between the two piers will span the active channel. The roadway of the new bridge will have two, 12-foot-wide traffic lanes and two, eight-foot-wide shoulders. Caltrans expects the project to require three construction seasons. The new bridge alignment will require an upgrade at the intersection of Walker Road and SR 96 for safety purposes. Walker Road will be lengthened and widened at the intersection to accommodate turn movements. A detour will not be required as traffic will continue to use the current bridge until construction is complete.

The project is scheduled as a two-season project and is anticipated to take place between 2024 and 2026. Construction will last approximately 30 months and would span 360 working days. In-water work activities in the Klamath River would be conducted during two anticipated discrete periods. The first in-channel work period would last approximately 20 weeks during the first construction season. Construction activities that could be conducted during the first in-water work period include:

- Installing temporary piles,
- Constructing the temporary work platforms,
- Installing a combination of pilings and gravel work pads,
- Construction of the rock access roads,
- Installing permanent CIDH piles,
- Constructing piers for the new bridge.

The second in-channel work period would last approximately 20 weeks during the second construction season. Construction activities that could be conducted during the second in-water work period include:

- construction of the gravel work pad for Pier 2 removal;
- removing existing Pier 2;
- removing the temporary work platforms and piles from the previous season;
- removal of rock access roads from previous seasons;
- installing permanent CIDH piles;
- final demolition of old bridge.

All activities associated with the bridge replacement work will be conducted during daylight hours. Support work such as equipment fueling or repair may be conducted during hours of darkness in upland staging areas. All work within the stream channels, or that may affect fish in the streams will occur between June 15 and October 15 with the exception of blasting, which will take place between July 1 and September 30.

### 1.3.1 Construction Staging, Access, and Vegetation Removal

Potential staging and storage areas for material and equipment will be located within an existing rock quarry, which is approximately 300 feet to the east of the existing bridge.

*Access*
Temporary access roads will be required for work below the bridges. These proposed access roads will likely be constructed at the northeast and northwest corners of the existing bridge and along the riverbanks between the existing and new bridge. Most of the construction of these temporary access roads would take place within existing disturbed upland areas. Temporary access roads may require grading up to four feet deep to push out high spots or to fill in low spots. These roads would have an overall width of approximately 20 feet.

The portions of the temporary access roads located within the riparian zone and below the ordinary high-water marks (OHWM) will be constructed with at least six inches of uncrushed, rounded, natural river rock of a minimum 0.5 inches to 4 inches in diameter. The gravel will be washed to ensure it is free of oils, clay, debris, and organic matter. The gravel surface will be topped with geotextile fabric, which will then be covered by angular rock to create a stable driving surface. The fabric will separate the rounded gravel and angular rock, which will allow full removal of the angular rock.

Access to the old and new bridge locations will be required for support of falsework (new bridge forms and demolition supports/containment) and for equipment access. These access structures will consist of a trestle supported on piles, or in-water gravel work pads, or a combination of both.

*Trestle construction*
The trestle would be up to 40 feet wide and 230 feet long with anticipated spans of 40 to 50 feet between pile supports. The falsework and trestle would most likely be constructed during the first construction season. The contractor would determine the final number and size of piles, but the steel pipe piles will likely not exceed 24 inches in diameter or greater than 14 inches wide for steel H-piles. The temporary trestle deck would most likely consist of steel W-beams overlaid by timber decking.

Both steel pipe piles and steel H-piles can be impact-driven, but the steel pipe piles can also be drilled in. Because of the substantial amounts of rocky materials expected at the proposed bridge location, the method of non-displacement, pre-drilling the holes before placing the piles, may be used. However, Caltrans assumed piles will be impact driven to account for the potential of hydroacoustic impacts to fish. The depth of piles driven may vary depending on substrate composition but is assumed to be approximately 25 to 30 feet. Therefore, Caltrans anticipates that up to 1,000 strikes per pile would be needed. Regardless of which installation method is used, each pile would require approximately three hours to place. However, Caltrans estimates that up to eight piles per day could be installed. Caltrans estimates that approximately 28 piles are needed for the temporary trestle and up to 70 piles for the falsework, pile driving activities would take up to 40 days. Up to 70 piles will be installed in water, and 28 piles are expected to be installed in dry riverbed.

However, after October 1, adult coho salmon may migrate through the pile driving area and be exposed to single-strike injury thresholds. Data from the CDFW Scott River monitoring (CDFW 2014, 2015, 2016, 2017, 2018) show that adult coho migrate typically between about 1:00PM and 5:00AM. Therefore, Caltrans proposes to pile drive between 6:00AM and 1:00PM after October 1.

The contractor will prepare and submit a temporary work platform (falsework and trestle) plan for review and approval by Caltrans. Caltrans will submit the temporary work platform plan to NMFS and CDFW for review and concurrence. The plan will include, but not be limited to, location and length of the temporary work platforms, width of the trestle, type of decking for the trestle, type of support (i.e., steel pipe pile or steel H-pile), and length, number, and size of piles.

The temporary work platforms will be designed to resist the 25-year peak flow for the Klamath River. The deck of the temporary trestle will be removed during the rainy season. Caltrans will monitor any piles remaining over winter and remove any accumulated debris at least daily, or more often as necessary, to protect the temporary structure. A minimum 40-foot-wide section of the active stream shall be maintained between the piles. Caltrans estimates that the piles will occupy up to 220 square feet of riverbed.

*Gravel work pads*

The contractor may choose to construct gravel work pads in place of a portion of a trestle. Whether a work pad is installed on the east or the west side, or both sides of the river, it would extend from the river's edge into the river. Both gravel work pads would most likely be reinforced with stepped k-rail around the perimeter to prevent erosion and sloughing of material into the river. Other barrier measures may also be considered. Depending on the contractor's work schedule and timing, in-water gravel work pads would either be constructed one at a time or at the same time. If constructed one at a time, gravel removed from one pad would be used to construct the other pad in the following season. Construction of each gravel pad is anticipated to take approximately six days to complete. They may remain in the river for up to two winters and three summers if a third year of construction becomes necessary.

Additionally, an in-water gravel work pad may be required to remove Pier 2. If needed, it would likely be placed in the water, extending from the river's edge on the west to six feet past Pier 2.

Construction of this gravel pad is anticipated to take approximately 3 days to complete. It would remain in the river for one summer and would most likely be constructed in the second construction season. The in-water gravel work pads would vary in dimensions and height depending on future river morphology or hydraulic analysis.

A minimum of an 85-foot-wide section of the active stream will be maintained, or a velocity of 8 feet per second or less shall be maintained for winter-time adult fish passage. If a gravel pad is needed for Pier 2 removal, a minimum of 30-foot-wide section of the active stream shall be maintained to allow fish passage during summer flows. The gravel pads' in-water footprints will not exceed a combined total of 4,852 square feet.

When building the gravel work pads, the barriers (e.g., k-rails) will be installed first and will be slowly placed into the river from the top of the riverbanks. The gravels, which will be rounded river gravel that are sized and washed as described above, will then be placed gradually from the edge of the river out until a pad is formed. The barriers will be secure with cables or other authorized method. Caltrans will monitor the gravel work pads daily during precipitation events to check that the barriers stay intact. If the barriers come loose, Caltrans will resecure the barriers. If the barriers are displaced, Caltrans will remove the barriers from the active stream when water is receded, and then reconstruct the gravel work pad during the following in-water window. (Caltrans used this technique of securing and monitoring similar gravel work pads and a nearby bridge project on the Klamath River with no damage or displacement of the barriers.)

In the event the pads are overtopped, a contractor supplied biologist with fish relocation experience will survey the pads to ensure that no fish are present. If fish are found the biologist will relocate them and notify the Resident Engineer. The Resident Engineer is the responsible for notifying NMFS and CDFW.

When removing the gravel from the work pads, Caltrans will leave the bottom one foot in the channel to avoid impacts to the natural bed of the river. Modified or disturbed portions of the channel (i.e., streambed and streambank) will be restored as nearly as possible to natural and stable contours (i.e., elevations, profile, and gradient).

*Vegetation removal*
Construction access will require removal of the indicated acreage of vegetation at the following locations:

- temporary access roads (28,723 square feet);
- the proposed new bridge footing locations (642 square feet);
- existing stormwater culvert at Post Mile 77.67 (200 square feet).

Caltrans will replant the access road area with appropriate native vegetation, so loss of vegetation for the access roads will be temporary. Loss of vegetation at the new bridge footings and the culvert extension will be permanent; however, approximately 456 square feet of new vegetation will be planted in the location of the existing bridge footings after the bridge is removed. Therefore, the net loss of vegetation will be approximately 385 square feet.

### 1.3.2 Construction of New Bridge

The new bridge will have two cantilever seat abutments on 36-inch CIDH concrete piles. Each abutment is expected to have approximately 17 piles, and each pile would be approximately 46 feet long. The 36-inch CIDH piles will be drilled (25 feet) into bedrock to carry the load from the superstructure.

The new bridge will have two piers, each consisting of two columns and a pier cap. The pier columns would be constructed using 72-inch CIDH concrete pilings with 84-inch permanent steel casings. The concrete piling would be approximately 120 feet long. The piers would be constructed within the riparian zone. At the centerline of the new bridge, the piers would be approximately 32.2 feet and 62.9 feet from the river at summer base flow.

Once the abutments and piers are constructed, the falsework will be installed, rebar will be placed, and concrete will be poured to form the superstructure.

### 1.3.3 Old Bridge Demolition

The contractor will prepare a bridge demolition plan for approval by Caltrans. The existing bridge would likely be removed in sections from the top down. The contractor is expected to remove the existing bridge by saw-cutting the deck, removing the truss section with the use of cranes, then removing the bridge superstructure starting in the center and working outward to the abutments. Next, removal of the abutments and piers would require breaking the abutments and piers into small, manageable concrete and rebar pieces that can be removed by an excavator or other construction equipment.

Access to the existing piers would be from the banks using the temporary rock access roads. A hydraulic hoe ram mounted on an excavator will likely be used to break or split the abutments and piers. Existing CIDH piles under Pier 1 would be cut three feet below the ground surface and backfilled. The pier footings have been exposed, so minimal excavation would be required. Finally, the abutments and embankment would be removed.

The existing abutment footings are approximately six feet wide, 38 feet long and three feet deep and sit on seven steel piles. Excavation to one foot below the original ground or three feet below finished grade, whichever is lower, would be required to remove the abutment footings. The steel piles would be cut three feet below the finished grade. The use of hoe ramming to remove Pier 2 shall occur within the gravel work pad. Debris containment will be required to keep bridge debris and construction materials from falling into the river as much as practical during demolition and construction activities.

### 1.3.4 Construction of the New Road Alignment and Drainages

Approximately 1.17 miles of roadway will be realigned. The realignment includes an existing private access near the beginning of the realignment, existing private access near the new bridge, the new bridge itself, and Walker Road. The realignment would begin approximately 1,800 feet east of the new bridge and approximately 4,000 feet west of the new bridge. Soil would be borrowed from two adjacent hillsides north of SR 96 near the beginning of the realignment to

construct the roadway. Borrowing soil from adjacent hillsides may require blasting. Blasting operations will occur between July 1 and September 30 during daylight hours. Following the realignment, approximately 1.17 miles of the existing roadway will be decommissioned.

Existing culverts within the existing pavement footprint will be perpetuated to preserve the existing drainage pattern. Five culverts and end treatments (i.e., headwall, inlet, or outlet) would be extended or replaced. These culverts are for storm drainage only and are not considered stream channels under CDFW classification. Rock slope protection (RSP) would be placed at all five culvert outlets. Construction of the new roadway would result in 0.11 acre of net new impervious area.

### 1.3.5 Conservation Measures and Best Management Practices

Water pollution control scheduling and methods will be specified in the contractor's Storm Water Pollution Prevention Plan. Specific methods are indicated in Caltrans' Construction Site Best Management Practices (BMP) Manual (Caltrans 2017). Caltrans' BA provides details on specific measures. Most of these measures are standard practices that have proven efficacy and are familiar to NMFS' staff. Refer to Caltrans' BA and the above-referenced manuals for details.

### 1.3.6 Aquatic Species Relocation

Fish capture and relocation efforts will take place after the gravel pad barriers have been installed and prior to gravel being placed within the barriers. Fish capture and relocation attempts will be conducted by qualified fisheries biologists supplied by the contractor. Caltrans will prepare an Aquatic Species Relocation Plan for NMFS' review a minimum of 30 days prior to implementation. Methods may include seining gear, electrofishing gear, and dip nets. Remaining fish will then be removed from the area and released to suitable habitat. Electrofishing for salmonids will comply with Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act (NMFS 2000), and any seining or other capture and removal techniques will adhere to the California Salmonid Stream Habitat Restoration Manual (Flosi et al. 2010). A qualified biologist will be present during all phases of in-stream construction to assist with relocation efforts as they arise.

### 1.3.7 Water Drafting

Water drafting may be necessary for dust suppression or other construction activities (e.g., earthwork compaction operation or concrete curing). Water would be drafted from the Klamath River in the vicinity of the proposed new bridge on either side of the river. It is anticipated that water drafting would be intermittent and variable depending on the type of work in progress. During earthwork operations, it may be necessary to draft water up to six times daily, between approximately 6 a.m. and 7 p.m., from April through October. When concrete is poured for the new bridge, water drafting may be needed up to three times daily to help cure the concrete.

During earthwork operations, water would be drafted at a rate of approximately 75 gallons per minute (gpm) or 0.2 cubic feet per second (cfs). If needed for concrete curing, the rate would be approximately 5 gpm or 0.013 cfs. Up to 20,000 gallons per day for major earthwork compaction operations and up to 1,000 gallons per day for concrete curing operations may be required.

Concrete curing blankets would be used to keep evaporation to a minimum to help minimize the amount of water needed. Any excess curing water will be prevented from flowing off the deck by the contractor complying with Caltrans' 2018 Standard Specification Section 13-4.03E(5) *Material and Equipment Used Over Water* and Section 14-11.06 *Contractor-Generated Hazardous Waste*. These specifications require the contractor to install watertight curbs or toe boards on surfaces for containment when working over water.

#### 1.3.8 Mitigation

To comply with sections 2080.1 and 2081(b) of Fish and Game Code, Caltrans must minimize and fully mitigate the impacts of its activities and ensure adequate funding to implement mitigation including compliance and effectiveness monitoring. When determining the amount of compensatory mitigation, CDFW generally applies a mitigation ratio of mitigation acres per acre of impact on a case-by-case basis. Caltrans has begun coordination with CDFW on the proposed action and seeks to obtain a consistency determination through compliance with section 2080.1 of the Fish and Game Code. The compensation was developed in coordination with CDFW to fully mitigate the impacts of the proposed action with the goal of obtaining a California Endangered Species Act consistency determination. Proposed mitigation activities include continued development of coho salmon rearing habitat in nearby Beaver Creek. This work will undergo ESA section 7 consultation under the NOAA Restoration Center's Programmatic Biological Opinion. Caltrans will provide CDFW with written documentation that Caltrans has allocated sufficient funds, acceptable to and approved by CDFW, in the Expenditure Authorization for the project to ensure implementation of all measures to minimize and fully mitigate the incidental take of California Endangered Species Act (CESA) listed species, Coho salmon.

## 2. ENDANGERED SPECIES ACT: BIOLOGICAL OPINION AND INCIDENTAL TAKE STATEMENT

The ESA establishes a national program for conserving threatened and endangered species of fish, wildlife, plants, and the habitat upon which they depend. As required by section 7(a)(2) of the ESA, each Federal agency must ensure that its actions are not likely to jeopardize the continued existence of endangered or threatened species or to adversely modify or destroy their designated critical habitat. Per the requirements of the ESA, Federal action agencies consult with NMFS and section 7(b)(3) requires that, at the conclusion of consultation, NMFS provide an opinion stating how the agency's actions would affect listed species and their critical habitats. If incidental take is reasonably certain to occur, section 7(b)(4) requires NMFS to provide an ITS that specifies the impact of any incidental taking and includes reasonable and prudent measures (RPMs) and terms and conditions to minimize such impacts.

### 2.1. Analytical Approach

This biological opinion includes both a jeopardy analysis and an adverse modification analysis. The jeopardy analysis relies upon the regulatory definition of "jeopardize the continued existence of" a listed species, which is "to engage in an action that reasonably would be expected, directly

or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species" (50 CFR 402.02). Therefore, the jeopardy analysis considers both survival and recovery of the species.

This biological opinion also relies on the regulatory definition of "destruction or adverse modification," which "means a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species" (50 CFR 402.02).

The designation of critical habitat for SONCC coho salmon uses the term primary constituent element (PCE) or essential features. The 2016 final rule (81 FR 7414; February 11, 2016) that revised the critical habitat regulations (50 CFR 424.12) replaced this term with physical or biological features (PBFs). The shift in terminology does not change the approach used in conducting a "destruction or adverse modification" analysis, which is the same regardless of whether the original designation identified PCEs, PBFs, or essential features. In this biological opinion, we use the term PBF to mean PCE or essential feature, as appropriate for the specific critical habitat.

The ESA Section 7 implementing regulations define effects of the action using the term "consequences" (50 CFR 402.02). As explained in the preamble to the final rule revising the definition and adding this term (84 FR 44976, 44977; August 27, 2019), that revision does not change the scope of our analysis, and in this opinion we use the terms "effects" and "consequences" interchangeably.

We use the following approach to determine whether a proposed action is likely to jeopardize listed species or destroy or adversely modify critical habitat:

- Evaluate the rangewide status of the species and critical habitat expected to be adversely affected by the proposed action.
- Evaluate the environmental baseline of the species and critical habitat.
- Evaluate the effects of the proposed action on species and their critical habitat using an exposure–response approach.
- Evaluate cumulative effects.
- In the integration and synthesis, add the effects of the action and cumulative effects to the environmental baseline, and, in light of the status of the species and critical habitat, analyze whether the proposed action is likely to: (1) directly or indirectly reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species; or (2) directly or indirectly result in an alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species.
- If necessary, suggest a reasonable and prudent alternative to the proposed action.

In this opinion, we rely on known construction-related impacts to fish and habitat that result from activities such as in-water gravel pad construction and pile driving. We then consider the severity of exposure and the number of SONCC coho salmon that may be exposed. We estimate the number of fish that may be present based on physical habitat conditions and water temperature,

on trapping data provided by USFWS (2017, 2019, 2020), and on the Iron Gate Hatchery release schedule provided by CDFW (2021). Water temperature is normally the overriding factor that determines summer use of the mainstem Klamath River by juvenile coho salmon. Though we cannot reliably determine what the water temperature will be during construction, we have data on likely temperatures in the action area, and we believe that known presence as derived from trapping tracks well with expected timing and water temperature tolerance of juvenile coho salmon. Therefore, we assume that conditions at the time of construction will be the same as in the recent past.

## 2.2. Rangewide Status of the Species

This opinion examines the status of each species that is likely to be adversely affected by the proposed action. The status is determined by the level of extinction risk that the listed species face, based on parameters considered in documents such as recovery plans, status reviews, and listing decisions. This informs the description of the species' likelihood of both survival and recovery. The species status section also helps to inform the description of the species' "reproduction, numbers, or distribution" for the jeopardy analysis. The opinion also examines the condition of critical habitat throughout the designated area, evaluates the conservation value of the various watersheds and coastal and marine environments that make up the designated area, and discusses the function of the PBFs that are essential for the conservation of the species.

### 2.2.1 Species Description and General Life History

*SONCC coho salmon*: Coho salmon have a generally simple 3-year life history. The adults typically migrate from the ocean and into bays and estuaries towards their freshwater spawning grounds in late summer and fall, and spawn by mid-winter. Adults die after spawning. The eggs are buried in nests, called redds, in the rivers and streams where the adults spawn. The eggs incubate in the gravel until fish hatch and emerge from the gravel the following spring as fry. These young-of-year fish typically rear in fresh water for about 15 months before migrating to the ocean during the spring months. The juveniles go through a physiological change during the transition from fresh to salt water called smoltification. Coho salmon typically rear in the ocean for two growing seasons, returning to their natal streams as 3-year-old fish to renew the cycle.

### 2.2.2 Status of Species and Critical Habitat

In this biological opinion, NMFS assesses four population viability parameters to help us understand the status of coho salmon and their ability to survive and recover. These population viability parameters are: abundance, population productivity, spatial structure, and diversity (McElhaney et al. 2000). While there is insufficient information to evaluate these population viability parameters in a thorough quantitative sense, NMFS has used existing information, including the Recovery Plan for SONCC Coho Salmon Evolutionarily Significant Unit (ESU) (NMFS 2014) to determine the general condition of each population and factors responsible for their current status. We use these population viability parameters as surrogates for numbers, reproduction, and distribution, the criteria found within the regulatory definition of jeopardy (50 CFR 402.20).

**Status of SONCC Coho Salmon**

*SONCC Coho Salmon Abundance and Productivity*: Although long-term data on coho salmon abundance are scarce, the available evidence from short-term research and monitoring efforts indicate that spawner abundance has declined since the last status review for populations in this ESU (Williams et al. 2016). In fact, most of the 30 independent populations in the ESU are at high risk of extinction because they are below or likely below their depensation threshold, which can be thought of as the minimum number of adults needed for survival of a population.

*SONCC Coho Salmon Spatial Structure and Diversity*: The distribution of SONCC coho salmon within the ESU is reduced and fragmented, as evidenced by an increasing number of previously occupied streams from which SONCC coho salmon are now absent (NMFS 2001, Good et al. 2005, Williams et al. 2011, Williams et al. 2016). Extant populations can still be found in all major river basins within the ESU (70 FR 37160). However, extirpations, loss of brood years, and sharp declines in abundance (in some cases to zero) of SONCC coho salmon in several streams throughout the ESU indicate that the SONCC coho salmon's spatial structure is more fragmented at the population-level than at the ESU scale. The genetic and life history diversity of populations of SONCC coho salmon is likely very low and is inadequate to contribute to a viable ESU, given the significant reductions in abundance and distribution. The SONCC coho salmon ESU is currently considered likely to become endangered within the foreseeable future in all or a significant portion of its range, and there is heightened risk to the persistence of the ESU as Viable Salmonid Population (VSP) parameters continue to decline and no improvements have been noted since the previous status review (Williams et al. 2016).

**Status of Critical Habitat**

NMFS considers the action area to be designated critical habitat for SONCC coho salmon.

The condition of SONCC coho salmon critical habitat, specifically the ability to provide for their conservation, has been degraded from conditions known to support viable salmonid populations. NMFS has determined that currently depressed population conditions are, in part, the result of the following human induced factors affecting critical habitat: overfishing, artificial propagation, logging, agriculture, mining, urbanization, stream channelization, dams, wetland loss, and water withdrawals (including unscreened diversions for irrigation). Impacts of concern include altered stream bank and channel morphology, elevated water temperature, lost spawning and rearing habitat, habitat fragmentation, impaired gravel and wood recruitment from upstream sources, degraded water quality, lost riparian vegetation, and increased erosion into streams from upland areas (Weitkamp et al. 1995, 64 FR 24049, 70 FR 37160). Diversion and storage of river and stream flow has dramatically altered the natural hydrologic cycle in many of the streams within the ESU. Altered flow regimes can delay or preclude migration, dewater aquatic habitat, and strand fish in disconnected pools, while unscreened diversions can entrain juvenile fish.

### 2.2.3 Factors Responsible for Decline of Species and Degradation of Critical Habitat

The factors that caused declines include hatchery practices, ocean conditions, habitat loss due to dam building, degradation of freshwater habitats due to a variety of agricultural and forestry practices, water diversions, urbanization, over-fishing, mining, climate change, and severe flood

events exacerbated by land use practices (Good et al. 2005, Williams et al. 2016). Sedimentation and loss of spawning gravels associated with poor forestry practices and road building are particularly chronic problems that can reduce the productivity of salmonid populations. Late 1980s and early 1990s droughts and unfavorable ocean conditions were identified as further likely causes of decreased abundance of listed salmonids (Good et al. 2005). The sustained drought in California reduced stream flows and increased temperatures, further exacerbating stress and disease. Ocean conditions have been unfavorable in recent years due to the El Niño in 2015 and 2016. Reduced flows can cause increases in water temperature, resulting in increased heat stress to fish and thermal barriers to migration.

One factor affecting the range wide status and aquatic habitat at large is climate change. Information since these species were listed suggests that the Earth's climate is warming, and that this change could significantly impact ocean and freshwater habitat conditions, which affect survival of coho salmon subject to this consultation. In the coming years, climate change will influence the ability to recover these species in most or all of their watersheds. Coho salmon are particularly vulnerable to climate change due to their need for year-round cool water temperatures (Moyle 2002). Through effects on air temperatures and stream flows, climate change is expected to increase water temperatures to the detriment of these species. Climate change effects on stream temperatures within Northern California are already apparent. For example, in the Klamath River, Bartholow (2005) observed a 0.5°C per decade increase in water temperature since the early 1960's, and model simulations predict a further increase of 1-2°C over the next 50 years (Perry et al. 2011).

In coastal and estuarine ecosystems, the threats from climate change largely come in the form of sea level rise and the loss of coastal wetlands. Sea levels will likely rise exponentially over the next 100 years, with possibly a 50-80 cm rise by the end of the 21st century (IPCC 2019). This rise in sea level will alter the habitat in estuaries and either provide increased opportunity for feeding and growth or in some cases will lead to the loss of estuarine habitat and a decreased potential for estuarine rearing. Marine ecosystems face an entirely unique set of stressors related to global climate change, all of which may have deleterious impacts on growth and survival while at sea. In general, the effects of changing climate on marine ecosystems are not well understood given the high degree of complexity and the overlapping climatic shifts that are already in place (e.g., El Niño, La Niña, Pacific Decadal Oscillation) and will interact with global climate changes in unknown and unpredictable ways. Overall, climate change is believed to represent a growing threat, and will challenge the resilience of coho salmon in Northern California.

## 2.3. Action Area

"Action area" means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02).

The action area encompasses the entire construction footprint that would be subject to direct impacts from ground disturbance and vegetation clearing, including where staging and material storage may occur. This includes the SR 96 roadway and shoulders extending from Post Mile 77.15, access road areas, the hillside blasting location, impacted riverbed and riparian areas, the

downstream extent of possible turbidity discharges, and the water column extending to areas where sound pressure levels would exceed behavioral thresholds (i.e., 150 dB or greater, as described in section 2.5.3), which Caltrans estimates to be up to 550 meters up- and downstream of the existing road centerline. Caltrans' BA (Caltrans 2021) provides a map of the potential action area.

## 2.4. Environmental Baseline

The "environmental baseline" refers to the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultations, and the impact of State or private actions which are contemporaneous with the consultation in process. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are part of the environmental baseline (50 CFR 402.02).

Due to proposed removal of four upstream dams on the Klamath River, which is expected to overlap with the proposed action, the current environmental baseline may change somewhat. For example, sediment stored behind the dams will move downstream and potentially affect the riverbed in the action area. However, we believe the potential changes to the environmental baseline will not be appreciably different in ways that would affect our analyses of impacts of the proposed action.

In the action area, the threat to SONCC coho salmon from climate change is likely to include a continued increase in average summer air temperatures; more extreme heat waves; and an increased frequency of drought (Lindley et al. 2007). In future years and decades, many of these changes are likely to further degrade habitat throughout the watershed by, for example, reducing streamflow during the summer and raising summer water temperatures. Many of these impacts will likely occur in the action area via reduced flows and higher water temperatures.

### 2.4.1 Status of SONCC Coho Salmon and Critical Habitat in the Action Area

The action area lies within the SONCC coho salmon Upper Klamath River population area. The NMFS SONCC Coho Salmon Recovery Plan indicates that this population is at high risk of extinction and is likely below the depensation threshold (NMFS 2014). Additionally, SONCC coho salmon from the Shasta River population pass through the action area as migrants. The Shasta River population is also considered to be at high extinction risk and is likely below its depensation threshold (NMFS 2014).

Year-old coho salmon smolts, both naturally produced and originating from the Iron Gate Hatchery, pass through the action area on their seaward migration during approximately March through May. During the summer months, young-of-year (YOY) coho salmon in the mainstem Klamath River are confined to rearing in cool water refugia areas such as mouths and lower reaches of relatively cool streams (Soto, et al. 2010). By June, water temperatures in the

mainstem river approach and exceed coho salmon temperature tolerances, and any juvenile coho salmon in the action area are likely passing through in search of cool water, which is not present in the action area. Recent trapping conducted by the USFWS (2017, 2019, 2020) on the mainstem Klamath River near the confluence of Kinsman Creek detected YOY coho salmon in very low numbers (typically in single digits per week) after June 15, and typically detect no coho smolts. The rotary screw trap does not sample the entire river, but the frequency of detections indicates that the vast majority of juvenile coho have migrated out of the mainstem Klamath River, or into cool water refugia.

The lack of quality summer habitat that is protected from warm temperatures is one of the most likely factors limiting coho salmon productivity as described in the Mid-Klamath Subbasin Fisheries Resource Recovery Plan (Soto et al. 2008). The SONCC Coho Recovery Plan lists impaired water quality (high temperatures) as a very high stress and key limiting factor with the juvenile life stage being most limited. Water temperatures in the mainstem can approach 65°F as early as the beginning of June and remain high until early October. The daily average water temperature measured in the Klamath River mainstem near Seiad Valley peaked at 79.3°F on June 27, 2015. On August 5, 2019 and September 2, 2020, the daily average temperature peaked at 79.2°F and 75.3 °F, respectively. The highest daily average mainstem water temperature was at 81.5°F on July 4, 2015 and at 80.5°F on July 24, 2018 (Karuk Tribe 2021).

The action area does not provide rearing habitat to YOY coho salmon due to lack of thermal refugia, low velocity areas, or overhanging vegetation. Therefore, we expect that any juvenile coho salmon in the action area during the June 15 to October 15 in-water work season would simply be passing through as quickly as possible. Additionally, juvenile coho salmon typically travel at night (William Pinnix, USFWS. pers. comm. 2021), so they are less likely to be present in the action area during normal work hours.

Adult SONCC coho salmon may pass through the action area as they migrate toward spawning habitat in tributary streams, or to the Iron Gate Hatchery. Adult coho typically begin arriving at Iron Gate Hatchery at the end of October (Patrick Brock, CDFW. pers. comm. 2021); however, the hatchery is approximately 40 river miles upstream of the action area. Adult salmon monitoring (CDFW 2015, 2016, 2017, 2018, 2019) in the lower reaches of the Scott River detected the first coho salmon during the second half of October or early November. The monitoring station is approximately 18 miles upstream of the confluence of the Scott River and Klamath River, and the Scott/Klamath confluence is approximately five miles downstream of the action area. Therefore, we would expect adult coho salmon to begin passing through the action area in early to mid-October.

Adult coho salmon are not known to spawn in the action area, and are unlikely to spawn there due to lack of appropriate spawning habitat. And they are unlikely to hold because holding habitat is poor given the water depths and velocities. Additionally, the Scott River salmonid monitoring (CDFW 2015, 2016, 2017, 2018, 2019) shows that adult coho typically migrate between about 1:00PM and 5:00AM, so few, if any, adult coho salmon would be expected in the action area during normal work hours between June 15 and October 1, and Caltrans proposes to limit pile driving to the hours of 6:00AM and 1:00PM after October 1.

## 2.5. Effects of the Action

Under the ESA, "effects of the action" are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action (see 50 CFR 402.02). A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (see 50 CFR 402.17). In our analysis, which describes the effects of the proposed action, we considered the factors set forth in 50 CFR 402.17(a) and (b).

### 2.5.1 Work Pad Construction and Fish Relocation

Data on fish relocation efforts since 2004 shows most average mortality rates are below three percent for salmonids. Therefore, given the measures that would be implemented to avoid and minimize impacts to fish during relocation efforts, NMFS expects no more than three percent of all relocated fish would be subject to potential injury or mortality.

As detailed in section 1.3.1, Caltrans proposes to construct in-stream gravel work pads and/or a temporary trestle on piles. Placement of the barrier for the work pads could conceivably trap YOY coho salmon inside. Because the work pad area is in a migratory corridor, and juvenile coho salmon typically travel at night (W. Pinnix, pers. comm. 2021) few coho salmon are likely to be trapped; however, this cannot be ruled out. However, we do not expect juvenile coho to be crushed during placement of the barrier structure due to low numbers likely present, the proposed slow lowering of containment structures, and the fish's avoidance response. Caltrans proposes to leave the containment structures in the river over winter, and they propose to monitor the structures in case receding high waters strand migrating adults. However, we believe the chances of this to be miniscule, and we do not expect adult coho salmon to become trapped and require rescuing.

Therefore, NMFS conservatively estimates that no more than five juvenile coho salmon may require relocation. If we apply the three-percent mortality rate (rounded up to the nearest whole number) to the total number of juvenile coho salmon that we estimate could be captured and relocated, we would expect that no more than one juvenile SONCC coho salmon would be injured or killed during relocation.

### 2.5.2 Water Quality

Pollutants from construction operations, or from the mobilization of sediment both during and after construction, have the potential to impact water quality within the action areas.

*Turbidity and Sedimentation*

Short term increases in suspended sediment and turbidity are anticipated during construction and removal of the gravel work pads and potenially during pile intallation. Additionally, there is likely to be an increase in suspended sediment and turbidity in the action area during the first flow-producing rainfall of the season as disturbed sediments mobilize and adjust.

Increases in suspended sediment or turbidity can affect water quality, which in turn can affect fish health and behavior. Salmonids typically avoid areas of higher suspended sediment, which means they displace themselves from their preferred habitat in order to seek areas with less suspended sediment. Fish unable to avoid suspended sediment can experience negative effects from exposure.

Research has shown that length of exposure to total suspended solids (TSS) plays a more dominant role than TSS concentration (Anderson et al. 1996). Long term exposure to elevated TSS conditions may cause an endocrine stress response (elevated plasma cortisol, glucose, and hematocrits), suggesting an increased physiological burden that could influence growth, fecundity, and longevity (Redding et al. 1987). Therefore, when considering the effects of TSS on listed fish, it is important to consider the frequency and the duration of the exposure, not just the TSS concentration (Newcombe and Jensen 1996).

Construction of the stream work pads, and their removal at the end of construction, could generate turbidity. However, Caltrans proposes to use techniques and materials that are proven to minimize turbidity to minor levels and durations. Additionally, the high water velocities in the action area are expected to dissipate turbidity relatively quickly (as occurred during gravel pad construction at the Highway 263 bridge replacement project upstream of the action area). Therefore, NMFS considers the potential amounts and duration of turbidity to be unlikely to reduce the fitness of coho salmon in the action area.

The first streamflow-producing rains of the season will likely produce turbidity of short duration and low concentration, and will occur when the most vulnerable life stages are not present. Additionally, through project design and implementation of standard wet-weather BMPs, as described in detail in Caltrans' BA (Caltrans 2021) and Caltrans' Manual of Construction Site Best Management Practices (Caltrans 2017), levels of suspended sediment and turbidity during rain events are likely to be controlled sufficiently to avoid exposing coho salmon to injurious durations and concentrations. Therefore, NMFS considers the potential amounts and duration of turbidity generated during rain events to be unlikely to reduce the fitness of individual SONCC coho salmon in the action area.

*Pollutants Associated with Stormwater Runoff and Spills*

Contaminants generated by traffic, pavement materials, and airborne particles that settle may be carried by stormwater runoff into receiving waters. Stormwater runoff can introduce contaminants (e.g., copper, zinc, cadmium, lead, nickel, and other vehicle-derived chemicals) into waterways, where aquatic species can be affected. Copper and zinc are of particular concern due to their effect on salmonids at low concentrations. Dissolved copper and zinc in stormwater road runoff are difficult to remove, and have known negative effects on salmonids and other fishes (Sandahl et al. 2007). Additionally, Tian et al. (2021) found that a chemical called 6PPD-quinone, which derives from a preservative chemical used in tires, is associated with mortality of adult coho salmon when in high concentration.

The existing bridge presently allows stormwater to drain through scuppers directly into the river. The new bridge will drain stormwater to each abutment away from the river. Therefore, road

related contaminants and particles will be less likely to reach coho salmon habitat in these streams as compared to the existing condition.

The new bridge will not increase the amount of traffic on this highway, so NMFS does not expect increases of road-related contaminant deposition due to the proposed action. Existing levels of roadway-type contaminants on the highway are unknown, but are likely to be well below harm thresholds in this rural area. Additionally, any rainwater that may contain contaminants would be immediately and significantly diluted upon entrainment into the flowing river. Therefore, NMFS does not expect reductions in fitness of individual SONCC coho salmon in the action area due to toxic materials in stormwater runoff.

Accidental spills from construction equipment pose a significant risk to water quality, particularly for construction activities in or near watercourses, such as drilling for CIDH piles, and at the onset of the rainy season when the first flush could trigger the discharge of spilled materials. However, in-stream activities would be suspended and all construction areas stabilized and cleaned prior to the onset of the rainy season. Furthermore, the proposed minimization measures are expected to prevent chemical contamination during construction. Given the proven minimization measures and BMPs proposed, NMFS expects the likelihood of an accidental spill of contaminants reaching a waterway at a level that would harm SONCC coho salmon individuals to be highly improbable.

### 2.5.3 Hydroacoustics

Caltrans conducted an analysis of potential hydroacoustic impacts that may expose fish to harmful levels of sound energy during pile driving and demolition. The analysis is provided in a report as Appendix C in Caltrans' BA (Caltrans 2021). The following effects analyses are based on this report, as well as NMFS staff's personal experience with pile driving operations.

*Vibratory Pile Driving*
Caltrans may use vibratory pile driving for initial installation of piles, and for any necessary sheet piles used for shoring. Compared to impact pile driving, vibratory pile driving generally produces more continuous, lower energy sounds below the thresholds associated with injury. There are currently no established noise thresholds associated with continuous sound waves, and vibratory methods are generally considered effective measures for avoiding or minimizing the risk of injury of fish from pile driving noise. Vibratory installation may cause behavioral reactions; however, these behavioral impacts are likely to be minimal in terms of reducing an individual juvenile SONCC coho salmon's survival and fitness.

*Impact Pile Driving*
Sound energy levels above 150 dB (re: 1 μPa) can accumulate to cause barotrauma in exposed fish. This cumulative sound exposure level is abbreviated as cSEL. Based on accepted standards of the Fisheries Hydroacoustic Working Group (2008), fish under two grams may suffer barotrauma at a cSEL of 183 dB, and fish over two grams may experience barotrauma at a cSEL of 187 dB, though NMFS expects that all juvenile salmonids in the action area would be larger than two grams throughout the proposed in-water construction season, which includes the pile driving schedule. Therefore, we use the 187 dB cSEL threshold to evaluate physical impacts to

individual coho salmon. Sound energy levels above 150 dB may also induce behavioral changes such as startling. Sound energy below 150 dB is considered the "effective quiet" level and does not induce behavioral changes or accumulate toward the cSEL injury threshold. Additionally, exposure to cSEL levels do not continue to accumulate if fish are not re-exposed within 12 hours.

Caltrans evaluated potential underwater noise levels generated by proposed impact pile driving of 24-inch hollow steel piles, and determined that impact pile installation may exceed currently adopted cSEL injury thresholds fish based on five piles per day and up to 1,000 strikes per pile. Caltrans' BA (Caltrans 2021) indicates that between 2 and 8 piles may be driven in a day; however, the hydroacoustic analysis (Appendix C) only evaluates five piles per day. NMFS used the same reference data to re-calculate the injury thresholds based on eight piles/8,000 strikes per day and found that the distances to the cSEL levels do not change the original estimates based on five piles/5,000 strikes per day. Therefore, if up to eight piles are driven per day it would not change the effects determination.

However, after October 1, adult coho salmon may begin migrating through the pile driving area and be exposed to single-strike injury thresholds. Data from the Scott River monitoring program (CDFW 2015, 2016, 2017, 2018, 2019) show that adult coho migrate typically between about 1:00PM and 5:00AM. Therefore, Caltrans proposes to pile drive between 6:00AM and 1:00PM on or after October 1 to minimize the chances of an early migrant being in the single strike injury threshold zone when a pile is struck.

Caltrans proposes to use attenuation methods, if available, and may use steel H-piles, which are known to produce lower sound levels during impact pile driving (Caltrans 2020). However, we will consider the "worst case scenario" of 24-inch hollow steel piles without effective attenuation.

Therefore, we expect the single-strike injury threshold to be exceeded up to 16 meters from the pile. And we expect the cSEL injury threshold to be exceeded up to 215 meters from the pile.

However, as described in the Environmental Baseline section, we only expect juvenile and adult coho salmon to possibly transit through the action area at the beginning and end of the in-water construction season, respectively. Because adult and juvenile coho salmon are not expected to hold in the area of cSEL injury levels, we do not expect them to be exposed for long enough for the sound levels to accumulate to the injury threshold. Similarly, we think the chances are miniscule that an individual coho salmon would be in the zone of the single-strike injury level when a pile is impacted. Therefore, NMFS believes that no individual SONCC coho salmon would be exposed to physically harmful sound levels.

Additionally, coho salmon could be exposed to underwater noise levels exceeding the behavior thresholds (150 dB) without reaching the cSEL injury threshold. The hydroacoustic analysis predicts that exposure to 150 dB sound levels would occur over a radius of up to 1,585 meters from percussive activity. As explained in Caltrans' hydroacoustic analysis, transmission of sound in shallow water is limited compared to transmission is deeper open water, and this estimate is likely conservative.

Temporary behavioral changes that fish may exhibit in response to percussive noise include startling, altering behavioral displays, avoidance, displacement, and reduced feeding success.

Observations of juvenile coho and steelhead exposed to pile driving noise above the 150 dB behavioral threshold at the Mad River Bridges Highway 101 project indicate that juvenile salmonids quickly habituate to sub-injurious noise and resume normal surface-feeding behavior within a few minutes of the fist pile strikes (Mike Kelly, NMFS, personal observations 2009, 2011). Therefore, NMFS believes that periodic behavioral changes caused by sub-injurious sound exposure will not result in decreased fitness or survival of individual SONCC coho salmon.

*Demolition and Blasting*
Demolition and blasting activity could also create underwater sound levels capable of injuring fish or inducing behavioral changes. However, Caltrans' hydroacoustic analysis demonstrates that thresholds and distances produced by demolition that may affect coho salmon are much smaller than expected during pile driving. The single strike injury threshold for blasting is 37 meters from the blast location, which is greater than for demolition activity and pile driving. However, blasting will take place approximately 30 meters from the river, so the effective single strike injury distance is effectively seven meters, which is smaller than the predicted distance for pile driving. Additionally, blasting will be restricted to between July 1 and September 30, when coho salmon are not expected to be in the action area. Therefore, using the same rationale presented in the previous section, we do not expect decreased fitness or survival of individual SONCC coho salmon that may be exposed to sound generated by demolition and blasting.

### 2.5.4 Temporary Loss of In-stream Habitat

As described in Section 1.3.1 of this opinion, Caltrans will construct either a work trestle or in-water gravel work pads, and they will remain in the river for parts of two construction seasons and over one winter. Therefore, some area occupied by these structures will be unavailable to rearing juveniles or holding adult coho salmon for the period during which they are present.

However, as described in section 2.4.1, the action area serves only as a migratory corridor for adult and juvenile coho salmon. Loss of the area will not eliminate rearing habitat, and hydraulic analysis demonstrates that narrowing the channel to the proposed width with these structures will not impede upstream passage for adults, or downstream passage for juveniles. (We do not expect juveniles to migrate upstream through this reach.)

The natural stream bottom in the reach would provide habitat for juvenile coho salmon food sources such as aquatic insects. However, the action area is unlikely to support rearing coho salmon, and the covered area is only a tiny fraction of natural stream bottom in the river.

Therefore, any impacts to coho salmon habitat in the action area related to the in-water structures would not reduce the survival or fitness of individual SONCC coho salmon.

### 2.5.5 Effects to SONCC Coho Critical Habitat

*Riparian Vegetation Removal*
Willows and other small broadleaf trees will be removed within the footprint of the new bridge and access roads. An as-yet-undetermined number of larger trees, including conifers, may also be removed. NMFS considered the potential for all trees within the construction limits to be

removed, though the actual number is likely to be fewer than that. Appropriate native species will be replanted.

NMFS expects that the temporary loss of this riparian vegetation will have minimal impact on the functional values of existing riparian habitat given the small scale of the impact; therefore, no measurable increase in water temperature or reduction in the amount of terrestrial food input into the streams is anticipated. No large conifers will be removed; therefore, NMFS does not expect any appreciable changes to large woody debris recruitment to the river. NMFS believes that impacts to riparian vegetation will be inconsequential to the overall value of SONCC coho salmon habitat in the action area.

*Streambanks and Streambed*
Effects to individual coho salmon due to temporary covering of the streambed are described in section 2.5.4. NMFS does not believe that this temporary covering will create any long-term problems with benthic food resources as the area should recover quickly once the structures are removed and the reach experiences high winter flows. Impacts to the banks and riverbed will be minimized per project design and BMPs, and one instream pier will be removed thereby opening up a small area to become natural riverbed again and eliminating any existing pier-related hydraulic problems. Therefore, NMFS expects that the bed and bank habitat will maintain at least the same value as a result of the proposed action.

Additionally, the new roadway will create approximately 0.11 acre of new impervious surface. Impervious surface can create higher peak flows in receiving streams during storm events, which can alter the geometry of the bed and banks over time if the percent of impervious surface in a watershed is high enough. However, the upper Klamath River is largely rural with large areas of forest and agricultural land, and a very low percentage of artificial impervious surface. Therefore, NMFS expects that an increase of 0.11 acre will not alter the hydrograph in any measurable way.

### 2.5.6 Combined Effects

The potential exists for simultaneous construction-related impacts to have a synergistic effect that is greater or different than each stressor acting alone. Simultaneous project impacts may include visual impacts from workers and equipment working near or over the watercourses at the same time that fish may be exposed to suspended sediment, for example. Most potential project impacts would not occur simultaneously due to logistics of construction that require one phase of the project to be completed prior to starting another. Because combined effects are either unlikely or of very low intensity, NMFS does not expect any reductions in fitness of individual SONCC coho salmon from any combined effects of individual construction elements in the action area.

## 2.6. Cumulative Effects

"Cumulative effects" are those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation [50 CFR 402.02 and 402.17(a)]. Future Federal actions that are unrelated to the

proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA.

Some continuing non-Federal activities are reasonably certain to contribute to climate effects within the action area. However, it is difficult if not impossible to distinguish between the action area's future environmental conditions caused by global climate change that are properly part of the environmental baseline vs. cumulative effects. Therefore, all relevant future climate-related environmental conditions in the action area are described earlier in the discussion of environmental baseline (Section 2.4).

SONCC coho salmon in the action area are likely to be affected by future, ongoing non-federal activities, such as timber harvest, fishing activities, agriculture and rural development, and road construction. Water diversions contribute to diminished stream flows and warmer water temperatures, while agriculture may increase nutrients and degrade dissolved oxygen or water clarity.

## 2.7. Integration and Synthesis

The Integration and Synthesis section is the final step in assessing the risk that the proposed action poses to species and critical habitat. In this section, we add the effects of the action (Section 2.5) to the environmental baseline (Section 2.4) and the cumulative effects (Section 2.6), taking into account the status of the species and critical habitat (Section 2.2), to formulate the agency's biological opinion as to whether the proposed action is likely to: (1) reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing its numbers, reproduction, or distribution; or (2) appreciably diminish the value of designated or proposed critical habitat as a whole for the conservation of the species.

### 2.7.1 Summary of Baseline, Status of the Species, and Cumulative Effects

We describe habitat for SONCC coho salmon at the ESU scale as mostly degraded in section 2.2.2. Although there are exceptions, the majority of streams and rivers in the ESU have impaired habitat. Additionally, this critical habitat often lacks the ability to establish fully functioning features due to ongoing and past human activities. While habitat generally remains degraded across the ESU, restorative actions have likely improved the conservation value of habitat throughout their ranges.

While the action area lies within the geographic boundary of the SONCC coho salmon Upper Klamath River Population, SONCC coho salmon from the Shasta River Population also transit the action area. The NMFS SONCC Coho Salmon Recovery Plan (NMFS 2014) indicates that the Upper Klamath River and Shasta River populations are at high risk of extinction and are likely below their depensation thresholds.

As described in section 2.4, impaired water quality in the form of high water temperatures reduce the value of habitat to mainly serving as a migratory corridor. Additionally, the high velocity and lack of calm water and overhanging cover reduce the value of the habitat for rearing coho salmon during periods of cooler water.

The cumulative effects of those state and private activities that occur in the upper Klamath River watershed may continue to impair, but not preclude the recovery of habitat in the action area. NMFS expects that ongoing improvements in legacy effects of poor timber harvest practices and agricultural development will result in improved habitat conditions for SONCC coho salmon. Focused recovery actions as identified in the Recovery Plan (NMFS 2014), including removal of the four mainstem dams upstream of the action area, are expected to further improve habitat in the upper Klamath River. Modeling (Perry, et al. 2011) predicts that future temperature increases may be moderated downstream of the dam removal locations. Additionally, due to the negligible nature of the proposed action's long-term impacts, NMFS does not expect the proposed action to exacerbate the effects of climate change on coho salmon in the action area.

### 2.7.2 Summary of Effects to Individual SONCC Coho Salmon and Critical Habitat

NMFS anticipates miniscule effects to SONCC coho salmon and their designated critical habitat from expected levels of hydroacoustic exposure, chemical contamination, temporary loss of riparian vegetation, disturbance of streambanks and streambed, or increased sediment and turbidity during various activities. However, adverse effects are likely due to capture, handling, and relocation efforts intended to protect fish from potential exposure to in-water work activity.

NMFS predicts that up to five juvenile coho salmon could be handled during relocation when the in-stream work pads are constructed. NMFS expects that no more than one juvenile coho salmon could be injured or killed due to handling and relocation.

*Overall Individual and Critical Habitat Effects*
NMFS does not expect that the loss of one juvenile SONCC coho salmon would affect future adult returns regardless of whether the individual belonged to the Upper Klamath River Population or the Shasta River Population. This loss of a juvenile would represent a miniscule percentage of the overall number of individuals in each population. The overall number of individuals in the populations will likely provide a compensatory effect. Other areas of the Klamath River watershed are expected to continue to contribute to the populations during the time period when some juveniles in the action area may be harmed or killed as a result of this proposed project. Therefore, NMFS does not expect any appreciable effects on VSP parameters, and thus, the proposed action is not expected to reduce the survival and recovery of the SONCC coho salmon ESU, and the project is unlikely to appreciably diminish the value of designated critical habitat for the conservation of SONCC coho salmon.

## 2.8. Conclusion

After reviewing and analyzing the current status of the listed species and critical habitat, the environmental baseline within the action area, the effects of the proposed action, the effects of other activities caused by the proposed action, and the cumulative effects, it is NMFS' biological opinion that the proposed action is not likely to jeopardize the continued existence of SONCC coho salmon or adversely modify its designated critical habitat.

## 2.9. Incidental Take Statement

Section 9 of the ESA and Federal regulations pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without a special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is further defined by regulation to include significant habitat modification or degradation that actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering (50 CFR 222.102). "Harass" is further defined by interim guidance as to "create the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering." "Incidental take" is defined by regulation as takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant (50 CFR 402.02). Section 7(b)(4) and section 7(o)(2) provide that taking that is incidental to an otherwise lawful agency action is not considered to be prohibited taking under the ESA if that action is performed in compliance with the terms and conditions of this ITS.

The take exemption conferred by this incidental take statement is based upon the proposed action occurring as described in section 1.3 of this opinion and in more detail in Caltrans' BA (Caltrans 2021).

### 2.9.1. Amount or Extent of Take

In the biological opinion, NMFS determined that incidental take is reasonably certain to occur as follows:

Take of juvenile coho salmon may occur in the form of capture during fish relocation. NMFS expects that no more than one juvenile coho salmon would be injured or killed during capture and relocation to adjacent habitat, as detailed in sections 2.5.1 and 2.7.2 above.

### 2.9.2. Effect of the Take

In the biological opinion, NMFS determined that the amount or extent of anticipated take, coupled with other effects of the proposed action, is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

### 2.9.3. Reasonable and Prudent Measures

"Reasonable and prudent measures" are measures that are necessary or appropriate to minimize the impact of the amount or extent of incidental take (50 CFR 402.02).

NMFS believes the following reasonable and prudent measures are necessary and appropriate to minimize take of SONCC coho salmon:

1. Undertake measures to ensure that harm and mortality to threatened coho salmon resulting from fish relocation activities are low.
2. Ensure construction methods, minimization measures, and monitoring are properly

implemented during construction.

3. Prepare and submit a post-construction report regarding the effects of fish relocation and construction activities.

2.9.4. Terms and Conditions

Caltrans has a continuing duty to monitor the impacts of incidental take and must report the progress of the action and its impact on the species as specified in this ITS (50 CFR 402.14). If the entity to whom a term and condition is directed does not comply with the following terms and conditions, protective coverage for the proposed action would likely lapse.

1. The following terms and conditions implement reasonable and prudent measure 1:

    a. Qualified biologists with expertise in the areas of anadromous salmonid biology shall conduct fish relocation activities associated with construction. Caltrans will ensure that all biologists working on the project are qualified to conduct fish relocation in a manner which minimizes all potential risks to salmonids. The stream diversion and fish relocation plans shall include the qualifications of biologists conducting the fish relocation.
    b. Salmonids shall be handled with extreme care and kept in water to the maximum extent possible during rescue activities. All captured fish must be kept in cool, shaded, and aerated water protected from excessive noise, jostling, or overcrowding or potential predators any time they are not in the stream, and fish will not be removed from this water except when released. Captured salmonids will be relocated as soon as possible to an instream location in which suitable habitat conditions are present to allow for adequate survival for transported fish and fish already present. Fish will be distributed between multiple areas if biologists judge that overcrowding may occur in a single area.
    c. If any salmonids are found dead or injured, the biologist will contact NMFS biologist Mike Kelly by phone immediately at (707) 825-1622. The purpose of the contact is to review the activities resulting in the take and to determine if additional protective measures are required. All salmonid mortalities will be retained, placed in an appropriately-sized sealable plastic bag, labeled with the date and location, fork length, and be frozen as soon as possible. Frozen samples will be retained by the biologist until specific instructions are provided by NMFS. The biologist may not transfer biological samples to anyone other than the NMFS Northern California Office in Arcata, California without obtaining prior written approval from the South Coast Branch Chief. Any such transfer will be subject to such conditions as NMFS deems appropriate.

2. The following terms and conditions implement reasonable and prudent measure 2:

    a. Caltrans shall allow any NMFS employee(s) or any other person(s) designated by NMFS, to accompany field personnel to visit the project site during activities described in this opinion.
    b. Caltrans shall contact NMFS within 24 hours of meeting or exceeding take of listed species prior to project completion. Notify Mike Kelly by phone at 707-

825-1622 or via email to Mike.Kelly@noaa.gov. This contact acts to review the activities resulting in take and to determine if additional protective measures are required.

c. Caltrans shall make available to NMFS data from any hydroacoustic monitoring on a real-time basis (i.e., daily monitoring data should be accessible to NMFS upon request).

3. The following term and condition implements reasonable and prudent measure 3:

a. Caltrans shall provide a written report to NMFS by January 15 of the year following construction of the project. The report shall be sent to NMFS via email to Mike.Kelly@noaa.gov or via mail to Mike Kelly at 1655 Heindon Road, Arcata, CA 95521. The reports shall contain, at a minimum, the following information:

**Construction related activities --** The report will include the dates construction began and was completed; a discussion of any unanticipated effects or unanticipated levels of effects on salmonids, a description of any and all measures taken to minimize those unanticipated effects, and a statement as to whether or not any unanticipated effects had any effect on ESA-listed fish; the number of salmonids (by ESU) killed or injured during Project construction; and photographs taken before, during, and after the activity from photo reference points.

**Fish Relocation –** The report will include a description of the location from which fish were removed and the release site(s) including photographs; the date and time of the relocation effort; a description of the equipment and methods used to collect, hold, and transport salmonids; the number of fish relocated by species; the number of fish injured or killed by species and a brief narrative of the circumstances surrounding salmonid injuries or mortalities; and a description of any problems which may have arisen during the relocation activities and a statement as to whether or not the activities had any unforeseen effects.

## 2.10 Conservation Recommendations

Section 7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Specifically, "conservation recommendations" are suggestions regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or regarding the development of information (50 CFR 402.02).

NMFS recommends that any larger trees removed to facilitate construction access be conserved for instream habitat enhancement. To maximize the habitat value of these trees, they should have their root masses intact, which could be done by toppling with an excavator or other method, if feasible. Therefore, NMFS recommends that Caltrans

coordinate with the U.S. Forest Service, the Karuk Tribe Fisheries Program, or other stream restoration partners to place these trees in appropriate locations within adjacent streams.

### 2.11 Reinitiation of Consultation

This concludes formal consultation for the Horse Creek Bridge Replacement Project.

Under 50 CFR 402.16(a): "Reinitiation of consultation is required and shall be requested by the Federal agency or by the Service where discretionary Federal agency involvement or control over the action has been retained or is authorized by law and: (1) If the amount or extent of taking specified in the incidental take statement is exceeded; (2) If new information reveals effects of the agency action that may affect listed species in a manner or to an extent not previously considered; (3) If the identified action is subsequently modified in a manner that causes an effect to the listed species that was not considered in the biological opinion; or (4) If a new species is listed that may be affected by the identified action."

## 3. MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT ESSENTIAL FISH HABITAT RESPONSE

Section 305(b) of the MSA directs Federal agencies to consult with NMFS on all actions or proposed actions that may adversely affect EFH. Under the MSA, this consultation is intended to promote the conservation of EFH as necessary to support sustainable fisheries and the managed species' contribution to a healthy ecosystem. For the purposes of the MSA, EFH means "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity," and includes the physical, biological, and chemical properties that are used by fish (50 CFR 600.10). Adverse effect means any impact that reduces quality or quantity of EFH, and may include direct or indirect physical, chemical, or biological alteration of the waters or substrate and loss of (or injury to) benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality or quantity of EFH. Adverse effects on EFH may result from actions occurring within EFH or outside of it and may include site-specific or EFH-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810). Section 305(b) of the MSA also requires NMFS to recommend measures that can be taken by the action agency to conserve EFH. Such recommendations may include measures to avoid, minimize, mitigate, or otherwise offset the adverse effects of the action on EFH [CFR 600.905(b)].

This analysis is based, in part, on the EFH assessment provided by Caltrans and descriptions of EFH for Pacific Coast salmon (Pacific Fishery Management Council (PFMC) 2016) contained in the fishery management plans developed by the PFMC and approved by the Secretary of Commerce.

### 3.1 Essential Fish Habitat Affected by the Project

Essential Fish Habitat is defined as "those waters and substrate necessary to fish for spawning,

breeding, feeding, or growth to maturity" (16 U.S.C. 1802[10]). "Waters" include aquatic areas and their associated physical, chemical, and biological properties that are used by fish, and may include areas historically used by fish where appropriate; "substrate" includes sediment, hard bottom, structures underlying the waters, and associated biological communities; "necessary" means habitat required to support a sustainable fishery and a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle. The term "adverse effect" means any impacts which reduce the quality and/or quantity of EFH. Adverse effects may include direct or indirect physical, chemical, or biological alterations of the waters or substrates and loss of, or injury to, benthic organisms, prey species, and their habitats, and other ecosystem components. Adverse effects may be site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.910). The EFH consultation mandate applies to all species managed under a Fishery Management Plan (FMP) that may be present in the action area.

There is suitable migratory habitat for coho and Chinook salmon in the action area. Habitat Areas of Particular Concern (HAPC) are described as complex channel and floodplain habitat, spawning habitat, thermal refugia, estuaries, and submerged aquatic vegetation. There are no identified HAPCs in the action area.

### 3.2 Adverse Effects on Essential Fish Habitat

The potential effects to coho salmon habitat have already been described in the *Effects* section of this opinion (section 2.5), and the habitat requirements of fall-run Chinook salmon, which may use the action area outside of the summer construction schedule, are essentially the same as described for coho salmon. The adverse effects to EFH and HAPCs in the action area include:

1. Temporary reduction in available habitat due to presence of work platform structures.
2. Noise and visual disturbance during construction activities.
3. Temporary reduction in water quality caused by increase in suspended sediments and turbidity during construction, and during the first rain events following construction.
4. Permanent and temporary loss of riparian vegetation.

### 3.3 Essential Fish Habitat Conservation Recommendations

NMFS determined that the following conservation recommendation is necessary to avoid, minimize, mitigate, or otherwise offset the impact of the proposed action on EFH.

> NMFS recommends that any larger trees removed to facilitate construction access be conserved for instream habitat enhancement. To maximize the habitat value of these trees, they should have their root masses intact, which could be done by toppling with an excavator or other method, if feasible. Therefore, NMFS recommends that Caltrans coordinate with the U.S. Forest Service, the Karuk Tribe Fisheries Program, or other stream restoration partners to place these trees in appropriate locations within project streams or other adjacent streams.

### 3.4 Statutory Response Requirement

As required by section 305(b)(4)(B) of the MSA, Caltrans must provide a detailed response in writing to NMFS within 30 days after receiving an EFH Conservation Recommendation. Such a response must be provided at least 10 days prior to final approval of the action if the response is inconsistent with any of NMFS' EFH Conservation Recommendations unless NMFS and the Federal agency have agreed to use alternative time frames for the Federal agency response. The response must include a description of the measures proposed by the agency for avoiding, minimizing, mitigating, or otherwise offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the Conservation Recommendations, the Federal agency must explain its reasons for not following the recommendations, including the scientific justification for any disagreements with NMFS over the anticipated effects of the action and the measures needed to avoid, minimize, mitigate, or offset such effects [50 CFR 600.920(k)(1)].

In response to increased oversight of overall EFH program effectiveness by the Office of Management and Budget, NMFS established a quarterly reporting requirement to determine how many conservation recommendations are provided as part of each EFH consultation and how many are adopted by the action agency. Therefore, we ask that in your statutory reply to the EFH portion of this consultation, you clearly identify the number of conservation recommendations accepted.

### 3.5 Supplemental Consultation

Caltrans must reinitiate EFH consultation with NMFS if the proposed action is substantially revised in a way that may adversely affect EFH, or if new information becomes available that affects the basis for NMFS' EFH Conservation Recommendations [50 CFR 600.920(l)].

## 4. DATA QUALITY ACT DOCUMENTATION AND PRE-DISSEMINATION REVIEW

The Data Quality Act (DQA) specifies three components contributing to the quality of a document. They are utility, integrity, and objectivity. This section of the opinion addresses these DQA components, documents compliance with the DQA, and certifies that this opinion has undergone pre-dissemination review.

### 4.1 Utility

Utility principally refers to ensuring that the information contained in this consultation is helpful, serviceable, and beneficial to the intended users. The intended user of this opinion is Caltrans. Other interested users could include CDFW and the U.S. Forest Service. Individual copies of this opinion were provided to Caltrans. The document will be available within 2 weeks at the NOAA Library Institutional Repository [https://repository.library.noaa.gov/welcome]. The format and naming adhere to conventional standards for style.

### 4.2 Integrity

This consultation was completed on a computer system managed by NMFS in accordance with relevant information technology security policies and standards set out in Appendix III, 'Security

of Automated Information Resources,' Office of Management and Budget Circular A-130; the Computer Security Act; and the Government Information Security Reform Act.

### 4.3 Objectivity

Information Product Category: Natural Resource Plan

***Standards:*** This consultation and supporting documents are clear, concise, complete, and unbiased; and were developed using commonly accepted scientific research methods. They adhere to published standards including the NMFS ESA Consultation Handbook, ESA regulations, 50 CFR 402.01 et seq., and the MSA implementing regulations regarding EFH, 50 CFR part 600.

***Best Available Information:*** This consultation and supporting documents use the best available information, as referenced in the References section. The analyses in this opinion and EFH consultation contain more background on information sources and quality.

***Referencing:*** All supporting materials, information, data and analyses are properly referenced, consistent with standard scientific referencing style.

***Review Process:*** This consultation was drafted by NMFS staff with training in ESA and MSA implementation, and reviewed in accordance with West Coast Region ESA quality control and assurance processes.

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