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 7, 2020 **Refer to NMFS No:** WCRO-2020-01834

Morgan Robertson
Senior Environmental Planner
California Department of Transportation, District 5
50 Higuera Street
San Luis Obispo, California 93401

Re: Endangered Species Act Section 7(a)(2) Biological for US-101 Southbound Pismo Congestion Relief Project in San Luis Obispo County (EA: 05-1G680)

Dear Ms. Robertson,

On July 8, 2020, NOAA's National Marine Fisheries Service (NMFS) received the California Department of Transportation's (Caltrans) request for formal consultation under Section 7 of the U.S. Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531 et seq.). This request concerns the widening of Highway 101 over Pismo Creek and installing a sheet-pile wall as part of the Pismo Congestion Relief Project. The proposed action is within range of the threatened South Central California Coast (SCCC) Distinct Population Segment (DPS) of steelhead (*Oncorhynchus mykiss*) and designated critical habitat for the species. This consultation was conducted in accordance with the 2019 revised regulations that implement section 7 of the ESA (50 CFR 402, 84 FR 45016).

The biological opinion concludes that the proposed action is not likely to jeopardize the continued existence of the threatened SCCC DPS of steelhead or destroy or adversely modify its designated critical habitat. NMFS believes the proposed action is likely to result in incidental take of steelhead, therefore, the attached incidental take statement includes the amount and extent of anticipated incidental take with reasonable and prudent measures and non-discretionary terms and conditions to minimize and monitor incidental take of threatened steelhead.

Please contact Jess Fischer at jessica.adams@noaa.gov or (562) 533-6813 if you have a question concerning this consultation, or if you require additional information.

Sincerely,

Alecia Van Atta
Assistant Regional Administrator
California Coastal Office

Enclosure

cc: Andrew Domingos, Caltrans D5 (Andrew.domingos@dot.ca.gov)
Copy to E-File: ARN 151422WCR2020CC00147

Endangered Species Act (ESA) Section 7(a)(2) Biological Opinion

Highway 101 Southbound Pismo Congestion Relief Project

NMFS Consultation Number: WCRO-2020-01834
Action Agency: California Department of Transportation

Affected Species and NMFS' Determinations:

ESA-Listed Species	Status	Is Action Likely to Adversely Affect Species?	Is Action Likely to Jeopardize the Species?	Is Action Likely to Adversely Affect Critical Habitat?	Is Action Likely to Destroy or Adversely Modify Critical Habitat?
South-Central California Coast Steelhead (*Oncorhynchus mykiss)*	Threatened	Yes	No	Yes	No

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

Issued By:

Alecia Van Atta
Assistant Regional Administrator
California Coastal Office

Date: December 7, 2020

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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.), and implementing regulations at 50 CFR 402, as amended.

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 two weeks at the NOAA Library Institutional Repository [https://repository.library.noaa.gov/welcome]. A complete record of this consultation is on file at NMFS' California Coastal Office, Southern California Branch in Long Beach, California.

1.2 Consultation History

On July 2, 2020, NMFS received from the California Department of Transportation (Caltrans) a written request for formal consultation for the Highway 101 Congestion Relief Project at Pismo Creek (proposed action) in San Luis Obispo County. Caltrans' written request included a hydraulic report and the related biological assessment (BA) describing effects of the proposed action on threatened steelhead (*Oncorhynchus mykiss*) and designated critical habitat for the species in Pismo Creek. Following review of the consultation request and BA, NMFS determined the proposed action was incomplete and requested that Caltrans provide a complete project description in a letter dated July 16, 2020. Caltrans responded with additional information on July 28, 2020, but the project description was still lacking information essential for NMFS to develop a clear understanding of the proposed action and reasonably predict the consequences for threatened steelhead and designated critical habitat for this species. NMFS alerted Caltrans of the ongoing deficiency on August 10, 2020, and on August 24, 2020, Caltrans provided a complete project description. Formal consultation was initiated on the same day.

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 (50 CFR 402.02).

1.3.1 Overview of the Proposed Action

Caltrans proposes to widen the southbound Highway 101 bridge (#49-0015L) over Pismo Creek by one foot, three inches, remove and replace the existing concrete-slope protection with grouted rock-slope protection (RSP), and install a sheet-pile wall. This widening project is expected to alleviate traffic congestion during peak-use periods, increase channel roughness in Pismo Creek, and protect the bridge bent from ongoing scour. Construction will occur during one construction

season, with instream construction being confined to June 1 through October 31. Best management practices (BMP) are incorporated in to the proposed action and will be implemented when bridge-construction activities are undertaken.

1.3.2 Proposed Activities to Prepare the Work Area for Construction

To prepare for construction, the work area for the sheet-pile wall will be temporarily isolated with block netting and coffer dams. Any steelhead within the affected area will be relocated. The block nets will be monitored for effectiveness throughout the duration of construction.

Caltrans proposes to select relocation sites for steelhead based on habitat quality, water quality, cover, and access, though our review of the proposed action indicates those parameters are not defined. Steelhead will be captured with 0.125 inch (3.18 mm) mesh seines and dip nets. Once steelhead are removed from the block-net enclosure, the cofferdams will be installed within the enclosure. As coffer dam installation proceeds, any steelhead found will be captured and then relocated to suitable habitat downstream of the proposed project site.

The temporary coffer dam will be constructed using gravel bags wrapped in plastic sheeting, placed in the creek with approximately a 6-foot buffer around the sheet-pile area. The coffer dam will not span the entire channel, leaving one side of the creek to flow naturally, though block nets will remain in place for the duration of instream work. Up to 566 ft^2 or 82 linear feet of Pismo Creek will be isolated, but not dewatered. The coffer dam is expected to take 3 days to install and 2 days to remove.

Caltrans proposes to implement the following BMPs as part of the proposed action:

- Prior to installing the coffer dam, a biologist shall conduct an informal environmental-training program for the onsite workers. This training will include a description of steelhead and avoidance and minimization measures to be implemented during the project.
- During instream work, a biologist shall be retained with experience in steelhead biology and ecology, aquatic habitats, biological monitoring, and capturing, handling, and relocating fish species. The biologist will continuously monitor placement and removal of the coffer dam to capture and relocate stranded steelhead to suitable habitat. The biologist shall note the number of steelhead observed in the affected area, the number of steelhead relocated, and the date and time of the collection and relocation.
- The biological monitor shall monitor erosion and sediment controls to identify and correct any conditions that could adversely affect steelhead or steelhead habitat, though Caltrans does not specify what these controls will be in the description of the proposed action. The biologist will halt work activity as necessary and recommend measures to avoid and minimize adverse effects to steelhead and steelhead habitat.
- Instream work will be limited to the low-flow period between June 1 and October 31.
- All steelhead-relocation methods shall utilize a clean bucket partially filled with creek water collected within or adjacent to the capture site. Bucket water will be maintained at the same temperature the capture site and not contain turbidity greater than current

conditions in the creek. Captured steelhead shall be placed in the bucket and immediately transported and then released into the relocation site. Should the relocation of steelhead require more than 10 minutes from capture to release, the bucket containing steelhead must be placed in the creek to keep the water from heating and harming steelhead.

- Equipment will be staged at least 100 feet from the creek and where non-native vegetation has been removed.
- A spill-prevention plan will be implemented and a spill prevention kit will be located on site.

1.3.3 Proposed Construction Activities

The southbound bridge will be widened from 8 feet, 4 inches to 9 feet, 7 inches over Pismo Creek, which will result in 2,800 ft^2 of additional surface area directly above the creek. Five cast-in-drilled-hole plies will be installed in-line with existing piles to support the bridge expansion, three of which are outside the riparian area. No pile will be installed in Pismo Creek. The concrete-slope paving along the channel will be saw cut for removal to reduce the amount of debris. This concrete will then be replaced with grouted RSP, and 70 feet of sheet-pile wall will be installed at the edge of the ordinary high water mark (OHWM) to protect the bridge bent from scour. The hydraulic report provided by Caltrans indicates there will not be any change to flow conditions. The sheet-pile wall will occupy a total of 8.8 ft^2 of critical habitat and will be installed with a hydraulic push and vibratory hammer. Caltrans estimates the wall will take 10-15 days to install, with a total of 63 working days in the creek. Trucks, bulldozers, backhoes, compactors, asphalt concrete rollers, clamshells, excavators, compressors, man lifts, scrapers, pavers, water trucks will be used during construction.

1.3.4 Proposed Post-Construction Activities

Following construction of the proposed action, Caltrans will remove the coffer dam and replant disturbed areas with Arroyo willow and other native species. Caltrans has not provided details on planting mitigation ratios or plans to monitor the success of plantings. Caltrans will provide a written summary to NMFS of work performed, BMPs implemented, and supporting photographs. Documentation describing steelhead surveys and relocation efforts will include name(s) of the biologist(s), location and description of area surveyed, time and date of survey, all survey methods used, a list and tally of all steelhead observed, and a detailed discussion of capture and relocation efforts.

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

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 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 non-discretionary 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 relies on the 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(s) of critical habitat for (species) use(s) the term primary constituent element (PCE) or essential features. The 2016 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 2019 regulations define effects of the action using the term "consequences" (50 CFR 402.02). As explained in the preamble to the regulations (84 FR 44977), that definition 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 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.

2.2 Rangewide Status of the Species and Critical Habitat

This opinion examines the status of threatened steelhead that would 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" as described in 50 CFR 402.02. 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 Status of the Species

The threatened SCCC DPS of steelhead occupies rivers from the Pajaro River, Santa Cruz County, south to but not including the Santa Maria River, in Santa Barbara County. The decline of the species prompted listing of the SCCC DPS of steelhead as threatened on 18 August 1997 (62 FR 43937), which was reaffirmed on January 5, 2006 (71 FR 834). The status of the SCCC steelhead populations was assessed by NMFS' Biological Review Team (BRT) in 1996 (Busby et al.), 2005 (Good et al.), 2011 (Williams et al.), and 2016 (NMFS). Abundance of adult steelhead in the SCCC DPS declined from a historical high abundance of 25,000 returning adults, to an estimate of 4,750 adults in 1965 for five river systems (Pajaro, Salinas, Carmel, Little Sur, and Big Sur), to fewer than 500 adults currently (Boughton and Fish 2003; Good et al. 2005; Helmbrecht and Boughton 2005; Williams et al. 2011).

As part of the assessment and listing of SCCC steelhead, NMFS convened the BRT, composed of an expert panel of scientists. The BRT evaluated the viability and extinction risk of naturally spawning populations within each DPS. The BRT found high risks to abundance, productivity, and the diversity of the SCCC DPS and expressed particular concern for the DPS's connectivity and spatial structure. NMFS' latest 5-year status review for the SCCC DPS of steelhead states the following:

> "The extended drought and drying conditions associated with projected climate change has the potential to cause local extinction of *O. mykiss* populations and thus reduce the genetic diversity of fish within the South-Central California Coast Steelhead Recovery Planning Area." (p.55, NMFS 2016)

Moreover, NMFS' recent assessment of viability for steelhead provides an indication that the South Central California Coast Steelhead DPS may be currently experiencing an increased extinction risk (Williams et al. 2016).

1.1.1.1.General Life History of Steelhead

O. mykiss possesses an exceedingly complex life history. Distinctly different than other Pacific salmon, steelhead adults can survive their first spawning and return to the ocean to reside until the next year to reproduce again. For returning adults, the specific timing of spawning can vary by a month or more among rivers or streams within a region, occurring in winter and early spring. The spawning time frames depend on physical factors such as the magnitude and duration of instream flows and sand-bar breaching. Once they reach their spawning grounds, females will use their caudal fin to excavate a nest (redd) in streambed gravels where they deposit their eggs. Males will then fertilize the eggs and, afterwards, the females cover the redd with a layer of gravel, where the embryos (alevins) incubate within the gravel. Hatching time can vary from approximately three weeks to two months depending on surrounding water temperature. The young fish (fry) emerge from the redd two to six weeks after hatching. As steelhead begin to mature, juveniles or "parr" will rear in freshwater streams anywhere from 1-3 years. Juvenile steelhead can also rear in seasonal coastal lagoons or estuaries of their natal creek, providing over-summering habitat.

Juvenile steelhead emigrate to the ocean (as smolts) usually in late winter and spring and grow to reach maturity at age 2-4, but steelhead can reside in the ocean for an additional 2-3 years before returning to spawn. The timing of emigration is influenced by a variety of parameters such as photoperiod, temperature, breaching of sandbars at the river's mouth and streamflow. Extended droughts can cause juveniles to become landlocked, unable to reach the ocean (Boughton et al. 2006).

Through studying the otolith (ear stone) microchemistry of *O. mykiss*, researchers further understand the complex and intricate life history of steelhead. Specifically, resident rainbow trout can produce steelhead progeny; likewise, steelhead can yield resident rainbow trout progeny (Zimmerman and Reeves 2000). Additionally, evidence indicates that sequestered populations of steelhead (e.g., above introduced migration barriers) can exhibit traits that are the same or similar to anadromous specimens with access to the ocean. Examples include inland resident fish exhibiting smolting characteristics and river systems producing smolts with no regular access for adult steelhead. This evidence suggests the ecological importance of the resident form to the viability of steelhead and the need to reconnect populations upstream and downstream of introduced migration barriers. The loss or reduction in anadromy and migration of juvenile steelhead to the estuary or ocean is expected to reduce gene flow, which strongly influences population diversity (McElhany et al. 2000). Evidence indicates genetic diversity in populations of southern California steelhead is low (Girman and Garza 2006).

1.1.1.2.Steelhead Habitat Requirements

Habitat requirements of steelhead generally depend on the life history stage. Steelhead encounter several distinct habitats during their life cycle. Water discharge, water temperature, and water chemistry must be appropriate for adult and juvenile migration. Suitable water depth and velocity, and substrate composition are the primary requirements for spawning. Furthermore, dissolved oxygen concentration, pH, and water temperature are factors affecting survival of

incubating embryos. The presence of interspatial spaces between large substrate particle types is important for maintaining water-flow through the nest as well as dissolved oxygen levels within the nest. These spaces can become filled with fine sediment, sand, and other small particles. Additionally, juveniles need abundant food sources, including insects, crustaceans, and other small fish. Habitat must also provide places to hide from predators, such as under logs, root wads and boulders in the stream, and beneath overhanging vegetation. Steelhead also need places to seek refuge from periodic high-flow events (side channels and off channel areas), and may occasionally benefit from the availability of cold-water springs or seeps and deep pools during summer. Estuarine habitats can be utilized during the seaward migration of steelhead, as these habitats have been shown to be nurseries for steelhead. Estuarine or lagoon habitats can vary significantly in their physical characteristics from one another, but remain an important habitat requirement as physiology begins to change while juvenile steelhead become acclimated to a saltwater environment.

1.1.1.3.Influence of a Changing Climate on the Species

Climate-driven changes to stream, estuarine and marine have the potential to significantly impact steelhead populations. Coupled with naturally stressful environments at the southern limit of the species distribution, multiple stressors are likely to be amplified by ongoing increases in temperature, changes in precipitation patterns, and decreases in snowpack (Mote et al. 2003; Hayhoe et al. 2004). Research suggests that a change in climate would be expected to shift species distributions as they expand in newly favorable areas and decline in marginal habitats (Kelly and Goulden 2008). When climate interacts with other stressors such as habitat fragmentation, additional threats to natural resources will likely emerge (McCarty 2001), including threats to the viability of steelhead populations. In particular, seasonal access to perennial, cool water habitats, especially smaller streams at higher elevations, will likely become more important to listed salmonids seeking refuge from unsuitable temperature and streamflow (Crozier et al. 2008).

World-wide CO_2 levels from human activities (*e.g.*, fossil fuel use) have been steadily increasing. Climate scientists have documented increases in global temperatures and predict continued increases (IPCC 2007). This warming is affecting large-scale atmospheric circulation patterns (Dettinger and Cayan 1995), and it is impacting climate at global, regional, and local scales (Zwiers and Zhang 2003; Cayan et al. 2008). Climate change is occurring and is accelerating (Battin et al. 2007; IPCC 2007).

Environmental-monitoring data in the southwestern United States indicate changes in climatic trends that have the potential to affect steelhead life history strategy and habitat requirements. The southwest U.S. average annual temperature is projected to rise approximately 4° F to 10° F over the region by the end of the century (USGCRP 2009). Southern California is also experiencing an increasing trend in droughts, measured by the Palmer Drought Severity Index from 1958 to 2007 (USGCRP 2009). Snyder and Sloan (2005) project mean annual precipitation in central western California will decrease by about 3-percent by the end of the century. Small thermal increases in summer water temperatures have resulted in suboptimal or lethal conditions and consequent reductions in *O. mykiss* distribution and abundance in the northwestern United

States (Ebersole et al. 2001). Thus, climate variability will likely be an important factor in evaluating how the *Status of the Species* is influenced by changing climate.

Wildfire frequency, intensity, and extent are all important parameters to consider when considering a changing climate and associated impacts to steelhead and their habitat. Changes in vegetation communities for this region will likely include increases in the amount of grassland and decreases in most other major vegetation communities (*e.g.*, chaparral, riparian woodland). Based on a wildfire risk assessment in southern California, it was determined that the probability of large (>200-ha) fires ranges from a decrease of 29 to an increase of 28-percent (Westerling and Bryant 2008). The variation in range is due to the type of model used to make forecasts. Wildfires can have long-term benefits for fish habitat (such as producing influxes of spawning gravels to the stream), but in the short-term they can be catastrophic due to accumulation of fine sediment that negatively affects spawning, foraging and depth refugia (Boughton et al. 2007). Many of the foregoing climatic trends are likely to further degrade steelhead over-summering habitat in southern California by reducing stream flows and raising stream temperatures (Katz et al. 2013). Impacts to steelhead may result in increased thermal stress even though this species has shown to tolerate higher water temperatures than preferred by the species as a whole (Spina 2007). Conservation of existing steelhead populations will rely on identifying and providing unimpeded passage to the highest quality over-summering and spawning habitats which are expected to buffer habitat against changing climatic and hydrologic conditions. Habitat connectivity becomes as important as habitat quantity and quality when populations decrease and habitat is fragmented (Isaak et al. 2007).

2.2.2 Designated Critical Habitat

Critical habitat for the SCCC DPS of steelhead was designated on September 2, 2005, and consists of the stream channels listed in (70 FR 52488). Critical habitat has a lateral extent defined as the width of the channel delineated by the ordinary high-water line as defined by the Corps in 33 CFR 329.11, or by its bankfull elevation, which is the discharge level on the streambank that has a recurrence interval of approximately 2 years (70 FR 52522). PBFs are components of stream habitat that have been determined to be essential for the conservation of the SCCC DPS of steelhead, and are specific habitat components that support one or more steelhead life stages and in turn contain physical or biological features essential to steelhead survival, growth, and reproduction, and conservation. These include:

1) Freshwater spawning sites with sufficient water quantity and quality and adequate accumulations of substrate (i.e., spawning gravels of appropriate sizes) to support spawning, incubation and larval development.
2) Freshwater rearing sites with sufficient water quantity and floodplain connectivity to form and maintain physical habitat conditions and allow salmonid development and mobility; sufficient water quality and forage to support juvenile development; and natural cover such as shade, submerged and overhanging large wood, log jams, beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.
3) Freshwater migration corridors free of obstruction with water quantity and quality

conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.

4) Estuarine areas that provide uncontaminated water and substrates; food and nutrient sources to support steelhead growth and development; and connected shallow water areas and wetlands to cover and shelter juveniles.

5) Marine areas with sufficient water quality to support salmonid growth, development, and mobility; food and nutrient resources such as marine invertebrates and forage fish; and near-shore marine habitats with adequate depth, cover, and marine vegetation to provide cover and shelter.

Designated critical habitat for the SCCC DPS includes 1,249-miles of stream habitat and 3-square miles of estuary habitat within Monterey, San Benito, Santa Clara, Santa Cruz, and San Luis Obispo counties from the Pajaro River Hydrologic Sub-area south to the Estero Bay Hydrologic Unit (to but not including the Santa Maria River Hydrologic Unit). There are 30 occupied hydrologic sub-unit watersheds within the freshwater and estuarine range of the DPS. Critical habitat has a lateral extent as defined by the bankfull discharge, also known as a 2-year flood event.

1.1.1.4.Status of Designated Critical Habitat

Streams designated as critical habitat in the SCCC DPS have the above PBF attributes to varying degrees, depending on the stream location and the impacts associated with the watershed. NMFS' most recent status reviews for SCCC steelhead (NMFS 2016) identified habitat destruction and degradation as serious ongoing risk factors for this DPS. Urban development, flood control, water development, and other anthropogenic factors have adversely affected the proper functioning and condition of most spawning, rearing, and migratory habitats in streams designated as critical habitat. Urbanization has resulted in permanent impacts to steelhead critical habitat due to stream channelization, increased bank erosion, riparian damage, migration barriers, and pollution (NMFS 2016). Many streams within the DPS have dams and reservoirs that reduce the magnitude and duration of flushing stream flows, withhold or reduce water levels suitable for fish passage and rearing, physically block upstream fish passage, and retain valuable coarse sediments for spawning and rearing. In addition, some stream reaches within the DPS' designated critical habitat may be vulnerable to further perturbation resulting from poor land use and management decisions.

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 proposed action will take place in Pismo Creek which is designated critical habitat for threatened SCCC steelhead. The action area includes the linear extent (upstream and downstream) of the US-101 bridge at Pismo Creek and encompasses the riparian corridor to the top of the bank. The action area extends approximately 82 linear feet underneath the bridge, occupying 566 ft^2, and extending an additional 500 feet downstream of the diversion where temporary sedimentation effects due to

the proposed action are anticipated to cease. The approximate length of Pismo Creek in the action area is 582 feet.

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).

2.4.1 Status of Steelhead in the Action Area

Although no estimate of total steelhead abundance in Pismo Creek is available, there have been numerous sightings of steelhead within the creek. The recent presence of juvenile steelhead in the vicinity and action area have been documented (Morro Group 2001; Caltrans 2020). In May 2005, a "smolt sized steelhead" was observed in the Pismo Creek lagoon and CDFW has observed young-of-the-year, age 1+, and age 2+ steelhead throughout Pismo Creek (Becker and Reining 2008). One juvenile steelhead was relocated for Caltrans' Pismo Scour Repair project on June 20, 2019 (Caltrans 2020). In August 2001, the Morro Group surveyed Pismo Creek upstream of the project area and observed approximately 50 juvenile steelhead (Morro Group 2001). Based on survey and anecdotal observations of juvenile steelhead within the vicinity of the action area, NMFS estimates that up to 50 juvenile steelhead may be present in the work area to be isolated, depending on flow conditions and overall production within the watershed during a given year. Adult steelhead are not expected to be present with in the action area during the time of the proposed action (June 1 to October 31).

2.4.2 Status of Critical Habitat in the Action Area

Aquatic habitat within the action area of Pismo Creek consists of a trapezoidal concrete channel with a natural bottom of silt and sand. The active channel is approximately 28-feet wide and the banks underneath the bridge are lined with concrete-slope protection. Riparian vegetation within the action area include spider gum (*Eucalyptus conferruminata*), silk oak (*Grevillea robusta*), and Chilean fig (*Carpobrotus chilensis*). A small patch of native arroyo willow (*Salix lasiolepis*) with an understory of California blackberry (*Rubus ursinus*) occurs along the eastern bank of Pismo Creek downstream from the bridge. Riparian vegetation is not present around the bridge, but occurs upstream and downstream of the bridge. The stream is perennial, with flows being lowest in the summer and fall months. Water within the action area is tidally influenced and is typically brackish. Overall, while the PBFs of critical habitat for juvenile steelhead rearing (i.e., natural cover, shelter, water quality/quantity, and riparian) exist within the action area immediately downstream of the US-101 bridge, the quality and availability of habitat in the

action area has been diminished and reduced due to anthropogenic factors. In the action area, the threat to SCCC steelhead from climate change is likely to include a continued increase in summer air temperature, more extreme heat waves, and an increases frequency in drought (McClure et al. 2003). Finally, the PBFs for migration are considered suitable through the action area, as there is no obvious barrier to adult or juvenile steelhead migration.

2.4.3 Factors Affecting Species Environment in the Action Area and Vicinity

2.4.3.1 Road Encroachment and Urban Development

Highway 101 traverses the creek and residential developments exist along the creekbanks within the action area. A wastewater-treatment plant exists immediately upstream of the action area. The location of the roads and homes likely result in wet-season runoff from road surfaces entering the creek, which reduces water quality within the action area to an unknown degree. The effects on water quality from road surface runoff are most likely to occur during the winter when there is runoff during rainstorms. Runoff from road surfaces contains dirt, oils, automotive fluids, and petro chemicals that are harmful to aquatic life, including steelhead (Spence et al. 1996). Road and residential development located along the creek within the action area have contributed to the confinement of the stream channel and diminished riparian vegetation. Additionally, the input of nitrogen and phosphorus from treated wastewater immediately upstream of the action area can lead to increased eutrophication of receiving waters such as rivers and streams (Carey and Migliaccio 2009). Consequently, the proliferation of urban areas within the action area and vicinity is of concern.

2.4.3.2 Agricultural Development

Cultivated fields and open farmland dominate the Edna Valley upstream of the action area on Pismo Creek. Agricultural conversions of floodplains are recurring sources of threats to instream habitat. There is potential for increased turbidity or nutrient loading due to runoff from agriculture areas adjacent to the creek. High turbidity concentrations can cause fish mortality, reduce fish feeding efficiency, and decrease food availability (Berg and Northcote 1985; McLeay et al. 1987; Gregory and Northcote 1993; Velagic 1995). Agricultural runoff can transfer nutrients and pesticides to the creek, which can turn lower dissolved oxygen levels by increasing algae growth in streams and decreasing forage for steelhead (Spence et al. 1996).

In addition, demands on groundwater occur from upstream activities. The total estimated gross groundwater recharge for the San Luis Obispo Valley Basin is estimated to be 4,560 AFY with the total estimated range of gross water demand for the basin to be between 4,380 to 7,640 AFY (GSI Water Solutions 2017). The specific extent that agricultural water demands may affect the quantity and extent of surface water and essential features of steelhead habitat within the action area is unknown to NMFS. Lowered streamflow or stream drying could result in a significant reduction or loss of habitat and even mortality to steelhead (Spence et al. 1996). These impacts if occurring have the potential to adversely impair steelhead survival within Pismo Creek.

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. 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 50 CFR 402.17(a) and (b).

2.5.1 Effects of the Action on Critical Habitat

2.5.1.1 Temporarily Altering Aquatic Habitat

Installing the water diversion in the work area is expected to temporarily prevent a portion of Pismo Creek from serving as a freshwater migration corridor and freshwater rearing site for threatened steelhead for two to five months during the dry season (June 1 through October 31). The temporary loss of habitat is expected to have at least a few consequences, described as follows.

The temporary loss of habitat is expected to translate into temporary loss of aquatic macroinvertebrate forage within the action area. Aquatic insects provide a source of food for instream fish populations and may represent a substantial portion of food items consumed by juvenile steelhead. Effects to aquatic macroinvertebrates resulting from stream flow diversions will be temporary because construction activities will be temporary, and rapid recolonization (about one to two months) of the restored channel area by macroinvertebrates is expected following re-watering (Cushman 1985; Thomas 1985; Harvey 1986). In addition, the effect of macroinvertebrate loss as a food source is expected to be negligible because food from upstream sources would be available upstream and downstream of the isolated area via drift. Consequently, the temporary loss of aquatic macroinvertebrates as a result of isolation activities is not expected to adversely affect forage opportunities within the area over the long term.

The temporary loss of habitat due to isolating a portion of the creek represents an adverse effect to habitat for steelhead, for at least a few reasons. First, the loss of habitat translates into a loss of a freshwater rearing area, which is essential for the growth and survival of juvenile steelhead (the life stage expected to be present at the time the proposed action is implemented). Without freshwater rearing areas, the habitat cannot fulfill the intended conservation role for the species. Second, the quality and availability of habitat in the action area has already been diminished and reduced due to anthropogenic factors. Therefore, the loss of habitat due to isolation represents further loss of habitat. However, the area impacted by the diversion is relatively small compared to the amount and extent of habitat available elsewhere in Pismo Creek and, perhaps more importantly, the diversion will be removed following completion of the proposed action and the creek bed will be restored to pre-project conditions. Freshwater rearing habitats upstream and downstream of the action area will be unaffected by the proposed action and, therefore, continue providing the intended conservation role for the species. Overall, the loss of aquatic habitat associated with the water diversion will be temporary, and no long-term diminishment is

anticipated from the proposed action in the physical capacity of the habitat to serve the intended functional role for steelhead.

2.5.1.2 Disturbance to the Creekbed

Although manipulation and disturbance of the creek bed can result in changes to channel morphology and hydraulic conditions that may create impediments to steelhead migration, review of the proposed action indicates the footprint and alignment of the RSP and sheet-pile wall are not expected to result in any substantive change to channel morphology. As a result the habitat characteristics and conditions that are important to sustain steelhead migration through this reach are expected to remain the same. The sheet-pile wall will be placed at the OHWM, though it will occupy 8.8 ft^2 of critical habitat, the hydraulic report indicates no change is expected to stream flows. The RSP will be placed behind the sheet-pile wall, above the OHWM. Based on these findings, the proposed action is not anticipated to appreciably reduce the functional value of the action area as a site of freshwater migration or rearing.

2.5.1.3 Alteration of Water Quality

NMFS does not expect acute or chronic effects on aquatic habitat in Pismo Creek because substantive increases in sedimentation and turbidity levels resulting from construction activities are expected to be minimal and temporary, for a few reasons. First, the proposed action includes a number of sediment and erosion-control measures to reduce the likelihood that sediment would be introduced to the wetted area, though these measures are not specified. Second, the proposed BMPs that are intended to preclude equipment leaks from reaching the creek channel are expected to be efficient in the regard. As a result, we don't expect water-quality alterations due to equipment leaks. Although accidental spills of chemical contaminants are speculative, the proposed action incorporates measures to prevent a spill reaching the creek channel.

2.5.1.4 Disturbance to Streamside Vegetation

The proposed action has the potential to temporarily cause a discrete loss of shade and cover along Pismo Creek. This loss has the potential to translate into increased water temperatures (Mitchell 1999; Opperman and Merenlender 2004) and decreased water quality (Welsch 1991). However, the loss of vegetation as a result of the proposed action is expected to be temporary and confined to a small localized area. In addition, riparian vegetation will be replanted throughout the disturbed areas to minimize impacts from project construction. Based on NMFS' experience observing the response of riparian vegetation to human-made disturbances, the riparian zone is expected to recover from the project one to two years following the completion of construction. Notwithstanding this expectation, the proposed action does not include monitoring the replanted areas within the action area following completion of the project or other provision to notify NMFS of the performance of the proposed plantings over time.

2.5.2 Effects of the Action on Threatened Steelhead

The expected effects of the action on threatened steelhead are related to the proposed isolation of a portion of Pismo Creek within the action area. What follows is a discussion of these effects,

including discussion of the expected effects due to the proposed capture and relocation of steelhead.

2.5.2.1 Habitat Isolation Consequences for Juvenile Steelhead

Habitat isolation is expected to have two principal consequences: (1) a loss of service to juvenile steelhead through the loss of living space, and (2) stresses related to handling and crowding owing to the capture and relocation. Each of these is explained for more fully as follows.

Loss of Living Space.—The temporary loss of habitat owing to isolation could translate into an adverse effect on juvenile steelhead, chiefly through the short-term loss of a freshwater rearing area and displacement of steelhead, presuming presence of this species. This could increase densities of steelhead in neighboring reaches of the creek outside the action area. However, based on our observations of the creek upstream and downstream of the action area, and our general familiarity of steelhead abundance, we anticipate that number of steelhead experiencing a loss of service will be low. In addition, the diversion will not span the entire channel, though steelhead will still be excluded from the entire width of the isolated portion of the channel due to the placement of block nets on either end of the cofferdams. Although movement between the upstream and downstream portions of the action area will not be possible during the 63 days of instream construction, we anticipate relatively little movement of steelhead owing to the expected low abundance of the species in Pismo Creek. Overall, we anticipate the presence of the water diversion would affect only a small number of steelhead for a relatively short period of time during the dry season.

The effect of macroinvertebrate loss on juvenile steelhead is expected to be negligible because food from upstream sources would be available downstream of the isolated area via drift. The increase in shading at Pismo Creek due to the expanded bridge could translate to a decrease in primary productivity and in turn a decrease to macroinvertebrates. However, any decrease is expected to be negligible owing to macroinvertebrate abundance outside the action area.

Capture and Relocation.—Although isolating the action area has the potential to harm or kill rearing juvenile steelhead, the proposed action includes precautions to reduce the likelihood of harm and mortality. Prior to installation of the coffer dams, biologists will capture and relocate steelhead to the nearest suitable habitat downstream of the work space. Caltrans proposes that biologists will be experienced with steelhead handling, and will continuously monitor the placement of the diversion to capture and relocate stranded steelhead.

Although Caltrans will document the capture and relocation of juvenile steelhead within the isolated area, the proposed action does not include a provision to notify NMFS of the number of steelhead that may be harmed or injured as a result of the proposed action. In addition, the specific criteria that Caltrans will use to select relocation areas are not described in the proposed action, though categories for criteria are given. Based on our experience and familiarity with selection of relocation areas, the sites selected for relocating juvenile steelhead should have ample habitat.

Stress from crowding, including increased competition for food among juvenile steelhead in the relocation areas, is expected to be temporary, if experienced, because when the proposed action is finished steelhead will be able to colonize the area that had been isolated. In addition, the available information indicates abundance of juvenile steelhead in the action area is quite low and not likely to produce crowding effects.

Based on steelhead survey results and anecdotal observations of juvenile steelhead in the vicinity of the action area in Pismo Creek, NMFS expects no more than 50 juvenile steelhead will need to be relocated. NMFS expects that 5 juvenile steelhead may be injured or killed as a result of the proposed action. This estimated mortality is based on NMFS' experience and knowledge gained on similar projects in San Luis Obispo County during the last several years. Based on NMFS' general familiarity of steelhead abundance in South-Central California in general, and San Luis Obispo County streams in particular, the anticipated number of juvenile steelhead that may be injured or killed as a result of the proposed action is likely to represent a small fraction of the overall watershed-specific populations and the entire SCCC DPS of threatened steelhead. Therefore, the effects of the relocation on steelhead are not expected to give rise to population-level effects.

2.5.2.2 Consequences of Physical Habitat Alterations

The sources of physical alteration to the habitat for steelhead involve the loss of riparian habitat and installation of a sheet-pile wall. The expected consequences of the alterations for steelhead due to these activities are described as follows, and have been informed from the anticipated consequences to designated critical habitat for steelhead that we described earlier.

The loss of shade and cover along Pismo Creek is expected to have only temporary consequences for steelhead. This is because the loss of vegetation as a result of the proposed action is expected to be short lived and confined to a small localized area. In addition, riparian vegetation will be replanted throughout the disturbed areas to minimize impacts from project construction. The expected consequences to steelhead involve experiencing a reduction in overhead shade and cover, potentially increasing risk of avian predation to individual fish until the riparian vegetation recovers to pre-project condition.

The placement of the sheet-pile wall will result in a loss of 8.8 ft^2 of critical habitat along the OHWM and will not change hydraulic conditions. The PBFs for juvenile rearing (i.e., riparian, natural cover, shelter) within the action area occur just downstream of the bridge. Therefore, the discrete loss of cirtical habitat along the edge of the creek is not expected to diminish the overall functional value of rearing or migrating habitat 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 in the environmental baseline (Section 2.4).

NMFS is generally familiar with the activities in the action area and at this time is unaware of such actions that would be reasonably certain to occur. Consequently, no cumulative effects are likely, beyond the continuing effects of present land uses that are reasonably certain to occur into the future.

2.7 Integration and Synthesis

The Integration and Synthesis section is the final step in our assessment of the risk posed to species and critical habitat as a result of implementing the proposed action. 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.

Juvenile steelhead are expected to be present in the action area during the time the proposed action will be implemented and, therefore, subject to effects of the proposed action. The main risk to individual steelhead involves effects due to capture and relocation. The adverse effects include potential injury or mortality during the process of capture and relocation, but precautions are in place to minimize, if not eliminate, the risk of injury and mortality, and upstream and downstream habitats are expected to suitably harbor the relocated steelhead. The expected effects associated with the habitat alteration due to coffer dam installation will be short lived and localized.

Based on steelhead surveys and observations described in the environmental baseline section, NMFS concludes non-lethal take of no more than 50 juvenile steelhead that may be captured and relocated during the construction season as a result of isolating the action area, with a potential lethal take of no more than 5 out of the 50, thus the risk of mortality is low. Any juvenile steelhead present in the action area likely make up a small proportion of the SCCC DPS of steelhead.

Overall, the impacts to habitat are expected to be temporary and not translate into a reduction in the functional value of the habitat in the long term. The replanted areas are expected to create a functional riparian zone that provides cover for rearing steelhead within the action area of Pismo Creek. The loss of 8.8 ft^2 of critical habitat due to the placement of the sheet pile wall and impacts from disturbing the streambed are not expected to adversely affect the quality or quantity of aquatic habitat; rather, the proposed action is expected to maintain existing steelhead passage

and rearing characteristics and conditions in the localized area. Maintained passage conditions and are expected to favor the viability of the threatened SCCC DPS of steelhead.

The action area could be subject to higher average summer temperatures and lower precipitation levels in the future as a result of climate change, which would lead to higher creek temperatures and longer dry periods. Reductions in the amount of precipitation would reduce the amount and extent of flow. For this project, the above effects of climate change are unlikely to be detected by the time construction is completed. The short-term effects of the proposed action would have completely elapsed prior to these climate-change effects. The long-term changes in the channel at the bridge site due to placement of the sheet-pile wall are confined to a small area and are unlikely to significantly magnify the likely climate change impacts.

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 cumulative effects, it is NMFS' biological opinion that the proposed action is not likely to jeopardize the continued existence of the threatened SCCC DPS of steelhead and or destroy or adversely modify designated critical habitat for this species.

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). "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.

2.9.1 Amount or Extent of Take

In the biological opinion, NMFS determined that incidental take is reasonably certain to occur as follows: All steelhead within the action area, expected to be no more than 50 juveniles that are captured or harassed during project activities. No more than 5 juvenile steelhead are expected to be injured or killed as a result of relocating the species. No other incidental take is anticipated as a result of the proposed action. The accompanying biological opinion does not anticipate any form of take that is not incidental to the proposed action.

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

1. Avoid and minimize mortality of steelhead during relocation activities.
2. Minimize the amount and extent of temporary and permanent changes in the quality and quantity of riparian and instream habitat for steelhead.
3. Prepare and submit a post-construction report regarding the effects of fish relocation and construction activities.

2.9.4 Terms and Conditions

The terms and conditions described below are non-discretionary, and Caltrans or any applicant must comply with them in order to implement the RPMs (50 CFR 402.14). Caltrans or any applicant 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. Caltrans' biologist shall select relocation habitat(s) for steelhead prior to undertaking relocation activities. The biologist shall select relocation sites based on attributes such as adequate water quality (a minimum dissolved oxygen level of 5 mg/L and suitable water temperature), size or area, cover (instream and over-hanging vegetation or woody debris), number of fish already present in the site, and adequacy of the living space (e.g., water-column depth, accessible egress, and flowing water through the habitat. Multiple relocation sites may be necessary to prevent overcrowding of a single site depending on the number of steelhead captured, current number of steelhead already occupying the relocation habitat(s), and the size of the receiving habitat(s). Electrofishing is prohibited from use to capture steelhead.

    b. Steelhead will be relocated as soon as possible to the selected relocation sites, and distributed among multiple relocation sites if Caltrans' biologists determine that overcrowding would otherwise occur.

    c. Captured fish shall be handled with extreme care and kept in water to the maximum extent possible during relocation activities. All captured fish shall be

kept in cool, shaded, aerated water protected from excessive noise, jostling, or overcrowding any time they are not in the stream, and fish shall not be removed from this water except when released. To avoid predation, the biologist shall have at least two containers and segregate young-of-year fish from larger age classes and other potential aquatic predators.

d. Caltrans shall contact NMFS (Jess Fischer, 562-533-6813) immediately if one or more steelhead are found dead or injured. The purpose of the contact shall be to review the activities resulting in take and to determine if additional protective measures are required. All steelhead mortalities shall be retained, frozen as soon as practical, and placed in an appropriate-sized sealable bag that is labeled with the date and location of the collection and fork length and weight of the specimen(s). Frozen samples shall be retained by the biologist until additional instructions are provided by NMFS. Subsequent notification must also be made in writing to Jess Adams, NMFS, 501 W. Ocean Blvd., Suite 4200, Long Beach, California 90802 within five days of noting dead or injured steelhead. The written notification shall include 1) the date, time, and location of the carcass or injured specimen; 2) a color photograph of the steelhead; 3) cause of injury or death; and 4) name and affiliation of the person whom found the specimen.

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

   a. Caltrans shall develop a revegetation plan prior to initiating construction, and the plan shall include provisions to determine the success of plantings. The plan shall be sent to Jess Fischer, jessica.adams@noaa.gov, or NMFS, 501 West Ocean Boulevard, Suite 4200, Long Beach California 90802, for review prior to the start of construction.

3. The following terms and conditions implement reasonable and prudent measure 3:

   a. Caltrans shall provide a written report to NMFS by January 15 of the year following the construction season. The report shall be sent to Jess Fischer, jessica.adams@noaa.gov, or NMFS, 501 West Ocean Boulevard, Suite 4200, Long Beach, California 90802. The reports will contain, at a minimum, the following information:

      i. 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 steelhead, a description of any and all measures taken to minimize those unanticipated effects and a statement as to whether or not the unanticipated effects had any effect on steelhead; the number of steelhead killed or injured during project construction; and photographs taken before, during, and after the activity from photo reference points.

ii. Fish Relocation – The report will include (1) the number and size of all fish relocated during the proposed action; (2) the date and time of the collection and relocation; (3) a description of any problem encountered during the project or when implementing terms and conditions; and (4) any effect of the proposed action on steelhead that was not previously considered.

iii. Revegetation – The report will include a description of the locations seeded or planted, the area revegetated, proposed methods to monitor and maintain the revegetated area, criteria used to determine the success of the plantings, and pre-and post-planting color photographs of the revegetated area. Caltrans shall provide the results of the vegetation monitoring by January 15 following completion of each annual site inspection following completion of the project. Each report shall include color photographs taken of the project area during each inspection and before implementation of the proposed action.

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 critical habitat or regarding the development of information (50 CFR 402.02).

- Stormwater discharges to streams carry various pollutants that are toxic to salmonids. To aid in recovery of steelhead, Caltrans should include bioretention areas or other landscaping features adapted to treat stormwater runoff from US-101 to Pismo Creek at this construction site.
- In order for NMFS to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, NMFS requests notification of the implementation of any conservation recommendations. This notification shall be submitted to Jess Fischer, NMFS, 501 West Ocean Blvd., Suite 4200, Long Beach, California 90802.

2.11 Reinitiation of Consultation

This concludes formal consultation for the US-101 Southbound Pismo Congestion Relief Project. As 50 CFR 402.16 states, 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 if: (1) The amount or extent of incidental taking specified in the ITS is exceeded, (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion, (3) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological

opinion, or (4) a new species is listed or critical habitat designated that may be affected by the action.

3 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.

3.1 Utility

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

3.2 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.

3.3 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 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, if applicable*] 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, if applicable*], and reviewed in accordance with West Coast Region ESA quality control and assurance processes.

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