UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

November 22, 2011

In response refer to:
2011/05327

Deborah Harmon
Office of Environmental Management
California Department of Transportation, District 1
1656 Union Street
Eureka, California 95501

Dear Ms. Harmon:

Thank you for your letter of August 19, 2011, requesting initiation of consultation with NOAA's National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Effective July 1, 2007, the Federal Highway Administration (FWHA) assigned, and the California Department of Transportation (Caltrans) has assumed all responsibilities for ESA consultation and approval on most highway projects in California. Therefore, Caltrans is now considered the federal action agency for ESA consultations with NMFS for federally funded projects. This letter transmits NMFS' biological opinion for Caltrans' proposed School Way Bridge Replacement Project on the West Fork Russian River in Mendocino County, California. The enclosed biological opinion describes NMFS' analysis of the effect of implementing the proposed Project on threatened Central California Coast (CCC) steelhead (*Oncorhynchus mykiss*) and California Coastal (CC) Chinook salmon (*Oncorhynchus tshawytscha)*; and designated critical habitat for CCC steelhead, CC Chinook salmon, and California Central Coast (CCC) coho salmon (*Oncorhynchus kisutch*), in accordance with section 7 of the ESA. In the enclosed biological opinion, NMFS concludes that the Project is not likely to jeopardize the continued existence of CCC steelhead and CC Chinook salmon; and not likely to adversely modify designated critical habitat for CCC steelhead, CC Chinook salmon, and CCC coho salmon. However, NMFS anticipates take of CCC steelhead as a result of the Project. An incidental take statement with non-discretionary terms and conditions is included with the enclosed biological opinion.

This letter also serves as consultation under the authority of, and in accordance with, the Essential Fish Habitat (EFH) provisions of the Magnuson Stevens Fishery Conservation and Management Act (MSA). The School Way Bridge location includes areas identified as EFH for various life stages of species managed under the Pacific Coast Salmon Fishery Management Plan. The MSA requires all Federal agencies to consult with NMFS on all actions, or proposed

actions, permitted, funded, or undertaken by the agency, that may adversely affect EFH. Only species managed under a Federal fishery management plan are covered by the Magnuson-Stevens Act. Because Chinook salmon are managed under the Pacific Coast Salmon Fishery Management Plan, NMFS has included EFH Conservation Recommendations to avoid, minimize, or otherwise offset potential adverse effects to CC Chinook salmon EFH.

Please contact Joe Heublein at (707) 575-1251 or joe.heublein@noaa.gov if you have any questions concerning this section 7 consultation, or if you require additional information.

Sincerely,

Rodney R. McInnis
Regional Administrator

Enclosures

cc: Chris Yates, NMFS, Long Beach, California
Brandon Larsen, Caltrans District 1
Park Steiner, MCDOT, Ukiah, California
Rick Macedo, CDFG, Yountville, California
Copy to File ARN: 151422SWR2011SR00498

Enclosure 1

BIOLOGICAL OPINION

ACTION AGENCY:	California Department of Transportation
ACTION:	School Way Bridge Replacement Project, Mendocino County, California.
CONSULTATION CONDUCTED BY:	National Marine Fisheries Service, Southwest Region
FILE NUMBER:	2011/05327
DATE ISSUED:	**November 22, 2011**

I. CONSULTATION HISTORY

The California Department of Transportation (Caltrans) will be acting as the Federal action agency for Endangered species Act (ESA) consultations as per the agreement with the Federal Highways Administration (FHWA) in accordance with Section 6005 (a) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (PL-109-59) to assume the FHWA Secretary's responsibilities under the National Environment Policy Act of 1969 (42 USC § 4351, *et seq.*) and all or part of the FHWA Secretary's responsibilities for environmental review, consultation, or other action required under any environmental law with respect to one or more Federally funded highway projects within the state.

A meeting between staff from Quincy Engineers, NOAA's National Marine Fisheries Service (NMFS), Caltrans, Mendocino County Department of Transportation (applicant), California Department of Fish and Game (CDFG), and North State Resources, Inc. (NSR, applicant's environmental consultant) was held on February 2, 2010. The purpose of the meeting was to discuss Project alternatives with agency personnel to select the least invasive design and begin developing appropriate avoidance and minimization measures. On August 23, 2011, NMFS received Caltrans' August 19, 2011, letter requesting initiation of formal consultation under section 7 of the ESA for the replacement of School Way Bridge. Caltrans requested formal consultation because the proposed Project was likely to adversely affect listed salmonids and critical habitat. After reviewing the Biological Assessment, NMFS found the initiation package complete and initiated formal consultation on August 26, 2011.

II. PROPOSED ACTION

Caltrans proposes to use FHWA's funds to work with the Mendocino County Department of Transportation (MCDOT) to replace the aging structurally and hydraulically deficient School Way Bridge. The bridge is located where School Way crosses the West Fork (WF) Russian

River, 1.1 miles east of Highway 101 and 1,000 feet (ft) west of East Road in Redwood Valley, Mendocino County, California. The existing bridge was constructed in 1967 and is comprised of three 35.5-ft wide by 77-ft long spans (overall bridge length of 233 ft). The new bridge will be a single-span, cast-in-place, steel reinforced box girder of the same approximate length as the existing bridge, and approximately 50 ft in width. The existing bridge will remain intact to convey through traffic while the new bridge is constructed at an adjacent upstream location. The Project will be implemented by MCDOT and will involve some use of heavy equipment (excavator, pile driver, *etc.*) to construct the new bridge foundations and superstructure, and demolish the old bridge. All work within the channel will take place in one work season, between July 15 and October 15 of 2012 or 2013. NMFS does not anticipate any interdependent or interrelated actions associated with the proposed action.

A. Description of Project Activities

Replacement of School Way Bridge will involve the following activities: 1) construction of a temporary work pad in the channel beneath the existing bridge with four 4-ft diameter temporary culverts to maintain flow and fish passage through the site; 2) construction of new bridge abutments and superstructure; 3) installation of rock slope protection (RSP) at grade along the low flow channel and two abutment faces beneath the new bridge; 4) demolition of the existing bridge; and 5) revegetation and installation of large woody debris (LWD) in temporarily disturbed riparian areas and RSP.

Dewatering will occur in the work area extending approximately 20 ft upstream and 20 ft downstream of the existing bridge to allow for the construction of a temporary work pad. Prior to dewatering activities, fish will be captured and relocated and excluded from the work area with block nets. Dewatering will be accomplished by funneling flows with clean plastic sheeting and gravel through temporary culverts; temporary culverts will remain in place during in-channel construction to maintain fish passage and bypass flows through the work area. Following fish relocation and dewatering, the dewatered area and culverts will be covered with gravels that are clean, round, and suitably sized for salmonid spawning ("fish rock"); a temporary work pad will then be constructed with geotextile fabric and angular rock on top of the fish rock.

The new bridge will have one span and two abutments. Abutments will be constructed of cast-in-place concrete founded on piles, and will be located outside of the 100-year flood channel position (Q_{100}). Abutments will be founded on approximately 80 driven steel 15-inch diameter H-piles. RSP will be installed around the two new abutments and at grade along the channel beneath the new bridge (approximately 175 ft); RSP is anticipated to extend approximately 15 ft from the front face of each abutment footing; this will allow an approximately 60-ft wide natural channel bedding for the low flow channel to form between the RSP toes. Falsework for the bridge superstructure and debris associated with demolition of the existing bridge will be contained on the work pad, and removed following construction activities. Temporarily disturbed riparian areas will be revegetated with native plants, and LWD and native plantings will also be incorporated into the RSP. Upon completion of the Project, the temporary work pad and dewatering features will be removed and the stream will be allowed to naturally reform the channel through any fish rock left in place. In-channel Project activities are expected to require one season (June 15 through October 15) to complete.

B. Description of the Action Area

The temporary work pad will cover approximately 280 linear feet of channel below the existing and future bridge. Some riparian and instream habitat will be disturbed through installation of the temporary work pad and bridge; and temporary elevations in turbidity associated with construction and removal of the temporary work pad are anticipated. For the purposes of this consultation, the action area consists of temporarily and permanently disturbed riparian and instream habitat within the existing and future bridge footprints. This area encompasses approximately 400 linear feet of the WF Russian River and the associated riparian habitat, and extends approximately 150 feet downstream and 250 upstream of existing bridge centerline.

III. ANALYTICAL FRAMEWORK

A. Jeopardy Analysis

In accordance with policy and regulation, the jeopardy analysis in this biological opinion relies on four components: (1) the Status of the Species, which evaluates each species' range-wide conditions, the factors responsible for that condition, and the species' likelihood of both survival and recovery; (2) the Environmental Baseline, which evaluates the condition of the listed species in the action area, the factors responsible for that condition, and the relationship of the action area to the likelihood of both survival and recovery of the listed species; (3) the Effects of the Action, which determines the direct and indirect effects of the proposed Federal action and the effects of any interrelated or interdependent activities on the species in the action area; and (4) Cumulative Effects, which evaluates the effects of future, non-Federal activities in the action area on the species.

The jeopardy determination is made by adding the effects of the proposed Federal action and any Cumulative Effects to the Environmental Baseline and then determining if the resulting changes in species status in the action area are likely to cause an appreciable reduction in the likelihood of both the survival and recovery of the listed species in the wild.

The jeopardy analysis in this biological opinion places an emphasis on the range-wide likelihood of both survival and recovery of the listed species and the role of the action area in the survival and recovery of the listed species. The significance of the effects of the proposed Federal action is considered in this context, taken together with cumulative effects, for purposes of making the jeopardy determination. We use a hierarchical approach that focuses first on whether or not the effects on salmonids in the action area will impact their respective populations. If the populations will be impacted, we assess whether this impact is likely to affect the ability of the populations to support the survival and recovery of the Distinct Population Segment (DPS) or Evolutionary Significant Unit (ESU).

B. Adverse Modification Determination

This Biological Opinion does not rely on the regulatory definition of destruction or adverse modification of critical habitat at 50 CFR §402.02.[1] Instead, we have relied upon the statutory provisions of the ESA to complete the following analysis with respect to critical habitat.

The adverse modification analysis in this Biological Opinion relies on four components: (1) the Status of Critical Habitat, which evaluates the range-wide and watershed-wide condition of critical habitat in terms of primary constituent elements (PCEs – sites for spawning, rearing, and migration), the factors responsible for that condition, and the resulting conservation value of the critical habitat overall; (2) the Environmental Baseline, which evaluates the condition of critical habitat in the action area, and the factors responsible for that condition; (3) the Effects of the Action, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the PCEs in the action area and how that will influence the conservation value of affected critical habitat units; and (4) Cumulative Effects, which evaluates the effects of future, non-Federal activities in the action area on the PCEs and how that will influence the conservation value of affected critical habitat units.

For purposes of the adverse modification determination, we add the effects of the proposed Federal action on critical habitat in the action area, and any Cumulative Effects, to the Environmental Baseline and then determine if the resulting changes to the conservation value of critical habitat in the action area are likely to cause an appreciable reduction in the conservation value of critical habitat range-wide. If the proposed action will negatively affect PCEs of critical habitat in the action area we then assess whether or not this reduction will impact the value of the DPS or ESU critical habitat designation as a whole.

C. Use of Best Available Scientific and Commercial Information

To conduct the assessment, NMFS examined an extensive amount of information from a variety of sources. Detailed background information on the biology and status of the listed species and critical habitat has been published in a number of documents including peer-reviewed scientific journals, primary reference materials, and governmental and non-governmental reports. Additional information regarding the effects of the Project's actions on the listed species in question, their anticipated response to these actions, and the environmental consequences of the actions as a whole was formulated from the aforementioned resources, the biological assessment for this Project, and Project meeting notes if applicable. For information that has been taken directly from published, citable documents, those citations have been referenced in the text and listed at the end of this document. A complete administrative record of this consultation is on file at the NMFS North Central Coast Office (NCCO) (Administrative Record Number 151422SWR2011SR00498).

IV. STATUS OF THE SPECIES AND CRITICAL HABITAT

This biological opinion analyzes the effects of the proposed action on the following listed salmonids and their designated critical habitat:

[1] This regulatory definition has been invalidated by Federal Courts.

California Coastal (CC) Chinook salmon, listed as threatened under the ESA (70 FR 37160; June 28, 2005);
Central California Coast (CCC) steelhead, listed as threatened under the ESA (71 FR 834; January 5, 2006);
CC Chinook critical habitat (70 FR 52488; September 2, 2005);
CCC steelhead critical habitat (70 FR 52488; September 2, 2005);
CCC coho salmon critical habitat (64 FR 24049; May 5, 1999).

The best available information on the life history, distribution, and abundance of CCC coho salmon indicate that they are not likely to rear, spawn, or migrate through the action area. Coho salmon in the Russian River are currently found only in a few tributaries of the lower Russian River watershed and are not thought by NMFS to be utilizing the Russian River in the action area vicinity or upstream. Thus, CCC coho salmon will not be affected by the proposed project and are omitted from the discussion below. However, since designated critical habitat for CCC coho salmon occurs within the Project area, effects to this critical habitat are discussed where appropriate.

A. Species Description and Life History

1. Chinook Salmon

Chinook salmon are the largest member of the *Oncorhynchus* genus, with adults weighing more than 120 pounds having been reported from North American waters (Scott and Crossman 1973; Page and Burr 1991). Chinook salmon exhibit two main life history strategies: ocean-type fish and river-type fish (Healey 1991; Myers *et al*. 1998). Ocean-type fish typically are fall or winter-run fish that enter freshwater at an advanced stage of maturity, move rapidly to their spawning areas on the mainstem or lower tributaries of rivers, and spawn within a few weeks of freshwater entry. Their offspring emigrate to estuarine or marine environments shortly after emergence from the redd (Healey 1991). River-type fish are typically spring or summer-run fish that have a protracted adult freshwater residency, sometimes spawning several months after entering freshwater. Progeny of river-type fish frequently spend one or more years in freshwater before emigrating. The low flows, high river temperatures, and sand bars that develop in smaller coastal rivers in California during the summer months favor an ocean-type life history (Kostow 1995). Therefore, Chinook salmon of the Russian River and its tributaries are of the ocean-type. With this life history, smolts typically outmigrate as subyearlings during April through July (Myers *et al*. 1998). The ocean-type Chinook salmon in California tend to use estuaries and coastal areas for rearing more extensively than river-type Chinook salmon. The brackish water areas in estuaries provide rich sources of important lipids and moderate the physiological stress that occurs during parr-smolt transitions. Given the proposed construction period – July 15 through October 15 – and the life history of Chinook salmon, only juveniles are likely to be present in the action area during construction. The remainder of this section is dedicated to that life stage.

Fry emergence begins in December and continues into mid-April (Leidy and Leidy 1984). Emergence can be hindered if the interstitial spaces in the redd are not large enough to permit

passage of the fry. In laboratory studies, Bjornn and Reiser (1991) observed that Chinook salmon and steelhead fry had difficulty emerging from gravel when fine sediments (6.4 millimeter (mm) or less) exceeded 30-40 percent by volume. After emergence, Chinook salmon fry seek out areas behind fallen trees, back eddies, undercut banks and other areas of bank cover (Everest and Chapman 1972). As they grow larger, their habitat preferences change. Juveniles move away from stream margins and begin to use deeper water areas with slightly faster water velocities, but continue to use available cover to minimize the risk of predation and reduce energy expenditure. Fish size appears to be positively correlated with water velocity and depth (Chapman and Bjornn 1969, Everest and Chapman 1972). Optimal temperatures for both Chinook salmon fry and fingerlings range from 12-14 degree Celsius (°C), with maximum growth rates at 12.8°C (Boles 1988). Chinook salmon feed on small terrestrial and aquatic insects and aquatic crustaceans. Cover, in the form of rocks, submerged aquatic vegetation, logs, riparian vegetation, and undercut banks provide food, shade, and protect juveniles from predation.

2. Steelhead

Like Chinook salmon, steelhead are anadromous fish, spending some time in both fresh- and saltwater. The older juvenile and adult life stages occur in the ocean, until the adults ascend freshwater streams to spawn. Eggs (laid in gravel nests called redds), alevins (gravel dwelling hatchlings), fry (juveniles newly emerged from stream gravels), and young juveniles all rear in freshwater until they become large enough to migrate to the ocean to finish rearing and maturing into adults. General reviews for steelhead in California document much variation in life history (Shapovalov and Taft 1954; Barnhart 1986; Busby *et al*. 1996; McEwan 2001). Although variation occurs, in coastal California, steelhead usually live in freshwater for 2 years, then spend 1 or 2 years in the ocean before returning to their natal stream to spawn. Steelhead may spawn 1 to 4 times over their life. Steelhead from the Russian River and its tributaries typically immigrate to freshwater between December and April, peaking in January and February, and migrate to the ocean from February through June, with peak emigration occurring in April and May (Fukushima and Lesh 1998). Given the proposed construction period – June 15 through October 15 – and the life history of steelhead, only juvenile steelhead are likely to be present in the action area during construction. The remainder of this section is dedicated to that life stage.

Juvenile steelhead rear in edge-water habitats, moving gradually into pools and riffles as they grow larger. Cover is an important habitat component for juvenile steelhead, both as a velocity refuge and as a means of avoiding predation (Shirvell 1990; Meehan and Bjornn 1991). Steelhead, however, tend to use riffles and other habitats not strongly associated with cover during summer rearing more than other salmonids. Young steelhead feed on a wide variety of aquatic and terrestrial insects, and emerging fry are sometimes preyed upon by older juveniles. Rearing steelhead juveniles prefer water temperatures of 7.2-14.4°C and have an upper lethal limit of 23.9°C (Barnhart 1986; Bjornn and Reiser 1991). Fluctuating diurnal water temperatures can aid salmonid survival in areas where daytime water temperatures are excessive (Busby *et al*. 1996).

B. Status of Species and Critical Habitat

In this opinion, NMFS assesses the status of each species by examining four types of information, all of which help us understand a population's ability to survive. These population viability parameters are: abundance, population growth rate, spatial structure, and diversity (McElhany *et al.* 2000). While there is insufficient information to evaluate these population viability parameters in a quantitative sense, NMFS has used existing information to determine the general condition of each population and factors responsible for the current status of each ESU or DPS.

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). For example, the first three parameters are used as surrogates for numbers, reproduction, and distribution. We relate the fourth parameter, diversity, to all three regulatory criteria. Numbers, reproduction, and distribution are all affected when genetic or life history variability is lost or constrained resulting in reduced population resilience to environmental perturbation at local or landscape-level scales.

1. CC Chinook Salmon

The CC Chinook salmon ESU was historically comprised of approximately 38 Chinook salmon populations[2] (Bjorkstedt *et al.* 2005, Spence *et al.* 2008). Many of these populations (about 21) were independent or potentially independent, meaning they had a high likelihood of surviving for 100 years absent anthropogenic impacts. The remaining populations were likely more dependent upon immigration from nearby independent populations (Bjorkstedt *et al.* 2005, Spence *et al.* 2008).

Data on CC Chinook abundance, both historical and current, are sparse and of varying quality (Bjorkstedt *et al*. 2005). Estimates of absolute abundance are not available for populations in this ESU (Myers *et al.* 1998). In 1965, CDFG (1965) estimated escapement for this ESU at over 76,000. Most were in the Eel River (55,500), with smaller populations in Redwood Creek (5,000), Mad River (5,000), Mattole River (5,000), Russian River (500) and several smaller streams in Humboldt County (Myers *et al.* 1998). Currently available data indicate abundance is far lower, suggesting an inability to sustain production adequate to maintain the ESU populations. Recent growth rates are fluctuating (depending upon the year) coastwide in California; for example, in 2007-2009, dramatic declines in Chinook salmon returns occurred throughout California. More recently, Chinook salmon numbers in the Russian River have increased and adult salmon counts by October 26, 2011 (2,204) were nearly as high as the total count for 2010 (2,414) (SCWA 2011).

Although abundance is low, California Coastal (CC) Chinook salmon populations remain widely distributed throughout much of the ESU. Notable exceptions include the area between the

[2] Population is defined by Bjorkstedt *et al.* 2005 and McElhaney *et al.* 2000 as, in brief summary, a group of fish of the same species that spawns in a particular locality at a particular season and does not interbreed substantially with fish from any other group. Such fish groups may include more than one stream. These authors use this definition as a starting point from which they define four types of populations (not all of which are mentioned here).

Navarro River and Russian River, and the area between the Mattole and Ten Mile River populations (Lost Coast area). The lack of Chinook salmon populations both north and south of the Russian River (the Russian River is at the southern end of the species' range) makes it one of the most isolated populations in the ESU. Myers *et al*. (1998) reports no viable populations of Chinook salmon south of San Francisco, California.

Because of their prized status in the sport and commercial fishing industries, CC Chinook salmon have been the subject of many artificial production efforts, including out-of-basin and out-of-ESU stock transfers (Bjorkstedt *et al.* 2005). It is, therefore, likely that CC Chinook salmon genetic diversity has been significantly adversely affected despite the relatively wide distribution of populations within the ESU. An apparent loss of the spring-run Chinook life history in the Eel River Basin and elsewhere in the ESU also indicates risks to the diversity of the ESU. Although there are few data available, recent status reviews for CC Chinook salmon conclude that population abundance levels remain depressed relative to historical levels and that this ESU is presently "likely to become endangered" (NMFS 2001, NMFS 2005, Spence *et al*. 2008). In 2005, NMFS reevaluated the listing status of CC Chinook salmon and maintained the threatened status of Chinook salmon (70 FR 37160).

2. <u>CCC steelhead</u>

Historically, approximately 70 populations of steelhead existed in the CCC steelhead DPS (Spence *et al.* 2008). Many of these populations (about 37) were independent, or potentially independent, meaning they had a high likelihood of surviving for 100 years absent anthropogenic impacts (Bjorkstedt *et al.* 2005). The remaining populations were dependent upon immigration from nearby CCC steelhead DPS populations to ensure their viability (McElhaney *et al*. 2000; Bjorkstedt *et al*. 2005).

While historical and present data on abundance is limited, CCC steelhead numbers are substantially reduced from historical levels. A total of 94,000 adult steelhead were estimated to spawn in the rivers of this DPS in the mid-1960s, including 50,000 fish in the Russian River - the largest population within the DPS (Busby *et al.* 1996). Recent estimates for the Russian River are on the order of 4,000 fish (NMFS 1997). Abundance estimates for smaller coastal streams in the DPS indicate low but stable levels with recent estimates for several streams (Lagunitas, Waddell, Scott, San Vicente, Soquel, and Aptos creeks) of individual run sizes of 500 fish or less (62 FR 43937). For more detailed information on trends in CCC steelhead abundance, see: Busby *et al*. 1996, NMFS 1997, and NMFS 2005.

Some loss of genetic diversity has been documented and attributed to previous among-basin stock transfers and local hatchery production in interior populations in the Russian River (Bjorkstedt *et al*. 2005). Reduced population size and habitat fragmentation in San Francisco streams have likely also harmed genetic diversity in these populations.

CCC steelhead have experienced serious declines in abundance, and long-term population trends suggest a negative growth rate. This indicates the DPS may not be viable in the long term. DPS populations that historically provided enough steelhead immigrants to support dependent populations may no longer be able to do so, placing dependent populations at increased risk of

extirpation. However, because CCC steelhead have maintained a wide distribution throughout the DPS, roughly approximating the known historical distribution, CCC steelhead likely possess a resilience that will likely slow their decline relative to other salmonid DPSs or ESUs in worse condition. The most recent status review concludes that steelhead in the CCC steelhead DPS remain "likely to become endangered in the foreseeable future" (NMFS 2005). On January 5, 2006, NMFS determined that the CCC steelhead DPS remained a threatened species, as previously listed (71 FR 834).

A more recent viability assessment of CCC steelhead concluded that populations in watersheds that drain to San Francisco Bay are highly unlikely to be viable, and that the limited information available did not indicate that any other CCC steelhead populations could be demonstrated to be viable (Spence *et al.* 2008). Although there were average returns (based on the last ten years) of adult CCC steelhead during 2007/08, research monitoring data from the 2008/09 adult CCC steelhead returns indicate a decline in returning adults across their range compared to the last ten years.

3. Status of Critical Habitat

The condition of CCC steelhead, CCC coho salmon, and CC Chinook salmon critical habitat, specifically its 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[3]: 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; Busby *et al.* 1996; 64 FR 24049; 70 FR 37160; 70 FR 52488). 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.

C. Additional Threats to the CCC Steelhead DPS, CC Chinook ESU Salmon ESU, their Critical Habitats, and CCC Coho Salmon Critical Habitat

Global climate change presents an additional potential threat to CCC steelhead, CC Chinook salmon, their critical habitats, and CCC coho salmon critical habitat. Modeling of climate change impacts in California suggests that average summer air temperatures are expected to increase (Lindley *et al.* 2007). Heat waves are expected to occur more often, and heat wave temperatures are likely to be higher (Hayhoe *et al.* 2004). Total precipitation in California may decline; critically dry years may increase (Lindley *et al*. 2007, Schneider 2007). The Sierra

[3] Other factors, such as over fishing and artificial propagation have also contributed to the current population status of these species. All these human induced factors have exacerbated the adverse effects of natural environmental variability from such factors as drought and poor ocean conditions.

Nevada snow pack is likely to decrease by as much as 70 to 90 percent by the end of this century under the highest emission scenarios modeled (Luers *et al.* 2006). Wildfires are expected to increase in frequency and magnitude, by as much as 55 percent under the medium emissions scenarios modeled (Luers *et al.* 2006). Vegetative cover may also change, with decreases in evergreen conifer forest and increases in grasslands and mixed evergreen forests. The likely change in amount of rainfall in Northern and Central Coastal streams under various warming scenarios is less certain, although as noted above, total rainfall across the state is expected to decline. For the California North Coast, some models show large increases (75 percent to 200 percent) in rainfall amounts while other models show decreases of 15 percent to 30 percent (Hayhoe *et al.* 2004). Many of these changes are likely to further degrade CCC steelhead habitat by, for example, reducing stream flows during the summer and raising summer water temperatures. Estuarine productivity is likely to change based on changes in freshwater flows, nutrient cycling, and sediment amounts (Scavia *et al.* 2002). In marine environments, ecosystems and habitats important to sub adult and adult salmonids are likely to experience changes in temperatures, circulation and chemistry, and food supplies (Feely *et al.* 2004, Brewer 2008, Osgood 2008, Turley 2008). The projections described above are for the mid to late 21st Century. In shorter time frames natural climate conditions are more likely to predominate (Cox and Stephenson 2007, Smith *et al.* 2007).

V. ENVIRONMENTAL BASELINE

The environmental baseline is the current status of species and critical habitat in the action area based on analysis of the effects of past and ongoing human and natural factors. 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 consultation, and the impacts of State or private actions which are contemporaneous with the consultation in process (50 CFR 402.02).

The WF Russian River is a third-order tributary located within the upper northwest corner of the Russian River watershed. The climate in the area near the Project is Mediterranean, with much of the annual rainfall falling between November and April. Summers are typically dry, and summer baseflow within the WF Russian River is usually no more than several cubic feet per second. With regard to the larger Chinook salmon ESU and steelhead DPS, the habitat within the action area represents a very small portion of the available migratory, spawning and rearing habitat. In general, rearing habitat within the action area is of poor quality (discussed in further detail below). However, available salmonid spawning habitat exists in the action area and adult steelhead and salmon migrating through the action area can access higher quality spawning and rearing habitat within upstream tributaries such as Forsythe Creek, Mill Creek, and the headwaters of the WF Russian River.

The Project Area is located in central Mendocino County on the WF Russian River approximately six miles north of the confluence of the WF and East Fork Russian Rivers. The WF Russian River curves to the east and passes through the existing School Way bridge spans at an acute southeastern angle. Beneath the existing bridge, the river is heavily incised due in-part

to position of the existing piers and RSP scour protection along the edges of the low flow channel. The predominant understory at the existing bridge is blackberry, and few mature trees are present on the over-steepened banks. Riffle and run habitat exist upstream of the bridge; and a pool exists immediately downstream of the bridge with LWD and other instream cover features. Scour protection in the form of concrete rubble, RSP, and old cars are present in the vicinity of the existing bridge. Suitable salmonid spawning gravels and rearing habitat, however, exists both upstream and downstream of the existing bridge.

A. Status of Listed Species and Habitat in the Action Area

During August of 2002 and 2003, CDFG sampled 3 sites within the WF Russian River (one below the Project location, two above) for aquatic organisms, and documented multiple age-classes of steelhead at all three sites (CDFG 2003). Additionally, M. Gorman of NSR observed adult steelhead near suitable spawning habitat in the action area in February, 2010. Although CDFG failed to find any record of Chinook salmon during the sampling episodes, the presence of juvenile steelhead indicates the habitat can support juvenile salmonid rearing (*i.e.*, low gradient with adequate flow and cover complexity). Furthermore, the fact that no Chinook salmon juveniles were found during the surveys is not strong proof the species is absent from the area, since most juvenile Chinook likely migrate from the area to the ocean during spring months and would not be expected in the action area during August.

Although habitat conditions appear suitable to support adult spawning and juvenile rearing, the low numbers of steelhead sampled during the CDFG surveys suggest the steelhead and Chinook salmon numbers in the action area are likely low. The WF Russian River is designated critical habitat for CC Chinook, CCC steelhead, and CCC coho salmon, and contains spawning, rearing and migration habitat PCE's. Rearing habitat within the action area is likely to be thermally impaired with limited residual depth (<1 ft). Reduced stream shade from poor mature riparian canopy coverage has likely elevated instream water temperatures within the reach.

B. Factors Affecting Species Environment within the Action Area

The dominant factor affecting instream habitat within the action area is river constriction and incision at the existing bridge, and the resultant lack of normal riparian recruitment and naturally-occurring fluvial processes. Riparian habitat within the action area is compromised by channel incision that has destabilized and eroded the historic streambank in the immediate vicinity of the bridge. Additionally, low summer stream flows within the action area that likely stress summer rearing fish result from diversions and groundwater pumping located further upstream within the WF Russian River sub-watershed.

C. Previous Section 7 Consultations and Section 10 Permits in the Action Area

No section 7 consultations have previously been conducted within the action area of the Project. Stream restoration actions under programmatic consultations occur in the Russian River

watershed and may take place in the action area. These programmatic consultations include the NOAA Restoration Center's (RC) restoration program and the Regional General Permit programmatic consultation with CDFG. Both of these consultations authorize a limited amount of take for juvenile salmonids during instream work conducted in the summer months.

Section 10(a)(1)(A) research and enhancement permits and section 4(d) limits or exceptions could potentially occur in the WF Russian River watershed. Salmonid monitoring approved under these programs includes carcass surveys, smolt outmigration trapping, and juvenile density surveys. In general, these activities are closely monitored and require measures to minimize take during the research activities.

VI. EFFECTS OF THE PROPOSED ACTION

The purpose of this section is to identify the direct and indirect effects of the proposed action, and any interrelated or interdependent activities, on threatened CCC steelhead and CC Chinook salmon. Data to quantitatively determine the precise effects of the proposed action are limited or not available; the assessment of effects therefore focuses mostly on qualitative identification. This approach was based on knowledge and review of the ecological literature and other relevant materials. This information was used to gauge the likely effects of the proposed Project via an exposure and response framework that focuses on what stressors (physical, chemical, or biotic), directly or indirectly caused by the proposed action, that salmonids are likely to be exposed to. Next, we evaluate the likely response of salmonids to these stressors in terms of changes to salmonid survival, growth, and reproduction, and changes to the ability of PCEs to support the value of critical habitat in the action area. PCEs include sites essential to support one or more life stages of the species. These sites for migration, spawning, and rearing in turn contain physical and biological features that are essential to the conservation of the species.

Construction activities associated with this Project are expected to affect steelhead through fish relocation, dewatering of stream reaches, and temporary increased sediment mobilization. An impact hammer will be utilized to drive piles associated with the new abutments. Due in part to the location of new piles on dry land outside of the dewatered channel, and the size of the piles, hydroacoustic levels are expected to remain well below NMFS criteria for behavioral disruption of fish. Therefore, hydroacoustic effects will not be discussed further in this opinion.

Construction is scheduled to occur between June 15 and October 15. Only juvenile steelhead and Chinook salmon are expected to be in the action areas during this construction period. Effects to CCC steelhead, CC Chinook salmon, and CCC coho salmon critical habitat in the action area include placement of hardscape materials along the new abutments and temporary loss of riparian vegetation along the disturbed streambank. The potential effects of these activities are presented in detail below.

A. Fish Relocation Activities

Fish relocation activities will occur during the summer or early fall low-flow period, after emigrating smolts have left and before adults have immigrated to the proposed Project site. Juvenile steelhead will make up the bulk of captured salmonids; as explained above, few juvenile

Chinook salmon are expected within the action area given the time of year construction is scheduled. Due to the degraded condition of the stream within the Project area, NMFS expects the number of captured steelhead and Chinook salmon will be small, with a conservative estimate of no more than 30 steelhead and 5 Chinook salmon individuals encountered within the dewatered area.

There is always the potential for injury or mortality when relocating juvenile salmonids. Fish collecting gear, whether passive (Hubert 1996) or active (Hayes *et al.* 1996) has some associated risk to fish, including stress, disease transmission, injury, or death. The amount of unintentional injury and mortality attributable to fish capture varies widely depending on the method used, the ambient conditions, and the expertise and experience of the field crew. Based on information from other relocation efforts, NMFS estimates injury and mortalities will be less than three percent of those steelhead and Chinook that are relocated *(i.e.,* no more than one steelhead and one Chinook). Data on fish relocation efforts since 2004 shows most mortality rates are below three percent for steelhead (Collins 2004; CDFG 2005, 2006, 2007, 2008, 2009, 2010). Fish that avoid capture during relocation effects may be exposed to risks described in the following section on dewatering.

Although sites selected for relocating fish should have similar water temperature as the capture site and ample habitat, in some instances relocated fish may endure short-term stress from crowding at the relocation sites. Relocated fish may also face increased competition for available resources such as food and habitat. Some of the fish released at the relocation sites may choose not to remain in these areas and may move either upstream or downstream to areas with better habitat and lower fish densities -- as each fish moves, competition remains either localized to a small area or quickly diminishes as fish disperse. NMFS cannot accurately estimate the number of fish affected by competition or crowding, but does not believe these impacts will cascade through the watershed steelhead and Chinook salmon populations based on the small area that will likely be affected and the small number of salmonids likely relocated. Sufficient habitat appears to be available in the WF Russian River downstream and upstream of the Project site to sustain fish relocated without crowding other juvenile steelhead and Chinook salmon. Thus, based on the foregoing, the fitness of steelhead and Chinook salmon at the relocation sites is unlikely to be adversely affected.

B. Dewatering

Stream flow dewatering and worksite isolation could harm individual rearing juvenile salmonids by concentrating or stranding them in residual wetted areas (Cushman 1985). Rearing salmonids could be killed or injured if crushed during dewatering activities, though direct mortality is expected to be minimal due to relocation efforts prior to installation of the diversion. Fish that avoid capture in the Project work area will likely die during dewatering activities from desiccation or thermal stress. NMFS expects that the total number of juvenile salmonids that will be killed as a result of stranding during dewatering activities will be less than those killed during relocation (*i.e.*, less than 1% of the total present at the Project site, or one fish).

Stream flow and fish passage will be maintained through culverts beneath the temporary work pad. Dewatering activities are expected to temporarily alter and reduce the volume of aquatic

habitat. Furthermore, juvenile fish will be prevented from accessing the construction area during dewatering activities. NMFS anticipates only a small section of stream channel will be dewatered for in-channel construction activities (approximately 280 linear ft), a very minor portion of habitat currently utilized by steelhead and Chinook salmon within the WF Russian River. Furthermore, instream habitat will only be dewatered during the summer rearing season (*i.e.*, June 15 to October 15).

Benthic (*i.e.*, bottom dwelling) aquatic macroinvertebrates (a salmonid prey item) within the Project site may be killed or their abundance reduced when creek habitat is dewatered (Cushman 1985). However, effects to aquatic macroinvertebrates resulting from stream flow diversions and dewatering will be temporary since construction activities will be relatively short-lived, and rapid macroinvertebrate recolonization (within one to two months) of disturbed areas is expected following rewatering (Cushman 1985; Thomas 1985; Harvey 1986). In addition, the effect of macroinvertebrate loss on juvenile salmonids is likely to be negligible because food from upstream sources (via drift) would be available within the culverts and immediately downstream of the site. Based on these considerations, NMFS does not expect dewatering activities to adversely affect steelhead and Chinook salmon food resources. Based on the foregoing, the loss of aquatic macroinvertebrates as a result of dewatering activities is not expected to adversely affect threatened CCC steelhead and CC Chinook salmon.

C. Sedimentation and Turbidity

Disturbing the streambed or bank during work pad construction and removal may temporarily increase turbidity levels within and downstream of the Project site. NMFS anticipates that short-term increases in turbidity may occur during work pad construction and removal. Likewise, streambank grading and riparian planting are unlikely to elevate instream sediment to significant levels due to the multiple erosion minimization measures proposed (*e.g.*, utilizing silt fences and straw bales, isolating soil stockpiles away from the channel, *etc.*).

Sediment may affect salmonids in several ways. High concentrations of suspended sediment can disrupt normal feeding behavior and efficiency (Cordone and Kelly 1961; Bjornn *et al.* 1977; Berg and Northcote 1985), reduce growth rates (Crouse *et al.* 1981), and increase plasma cortisol levels (Servizi and Martens 1992). High turbidity concentrations can reduce dissolved oxygen in the water column, result in reduced respiratory functions, reduce tolerance to diseases, and can also cause fish mortality (Sigler *et al.* 1984; Berg and Northcote 1985; Gregory and Northcote 1993; Velagic 1995; Waters 1995). Even small pulses of turbid water will cause salmonids to disperse from established territories (Waters 1995), which can displace fish into less suitable habitat and/or increase competition and predation, decreasing chances of survival. With regard to physical habitat condition, increased sediment deposition can fill pools and reduce the amount of cover available to fish, decreasing the survival of juveniles (Alexander and Hansen 1986).

Turbidity levels resulting from the Project are expected to be less intense than the conditions encountered in the above-mentioned studies. As noted above, a small window of elevated turbidity may arise in the WF Russian River during work pad construction and removal. NMFS expectsthe duration and intensity, as well as the spatial extent, of the turbid conditions to be very limited; based on NMFS' experience with other similar projects and the limited disturbance and

the low flows expected, ; turbidity is unlikely to occur more than 50 feet downstream of the area to be dewatered. Therefore, the response, if any, of salmonids to these short time periods of small increases in turbidity is not expected to result in adverse effects to CCC steelhead or CC Chinook salmon.

E. Effect to Critical Habitat

The WF Russian River is designated critical habitat for CCC steelhead, CC Chinook, and CCC coho salmon. Primary constituent elements (PCEs) of designated critical habitat for CCC steelhead, CC Chinook salmon and CCC coho salmon in the action area include sites for migration, spawning and rearing. The potential effects of this Project to designated critical habitat associated with construction include the temporary loss of rearing sites during dewatering and minor, short-term disturbance of the bed and banks. The temporary loss of channel and associated streambanks (beneath the temporary work pad) for a four month period during construction is not expected to permanently adversely affect essential physical or biological features associated with CCC steelhead, CC Chinook salmon, or CCC coho salmon critical habitat. As discussed above, fish within the dewatered area will be relocated and sufficient habitat exists adjacent to the work site to support these individuals and therefore will not experience the adversely affected habitat

Habitat at the Project site should benefit from a reduction in channel constriction and, potentially, channel incision. Revegetation with native plant species and incorporation of LWD on exposed streambanks will minimize future bank erosion, and provide cover from predation for juvenile and adult fish; and bank stabilization around the School Way Bridge could result in the establishment of mature riparian canopy in the area. A mature riparian corridor and potential LWD will increase allochthonous food input, and provide additional woody material and needed habitat complexity in the future. Reduction in river constriction and localized scour could also enhance gravel recruitment and habitat quality. Overall, the Project is expected to improve habitat conditions in the action area.

VII. CUMULATIVE EFFECTS

Cumulative effects are defined in 50 CFR § 402.02 as “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”. Many actions occurring in the watershed upstream may affect the action area of this proposed Project. Any future federal actions will be reviewed through separate section 7 consultation processes and not considered here.

NMFS does not anticipate any cumulative effects in the action area other than those ongoing actions already described in the Environmental Baseline above, and resulting from climate change. NMFS staff maintain regular contacts with local state agency staff, local governments and private individuals and organizations within the action area, and is unaware of any cumulative impacts expected within the action area. Furthermore, Caltrans did not provide any information on potential cumulative impacts in the action area within their consultation request.

In the long term, climate change may produce temperature and precipitation changes that may adversely affect steelhead, Chinook salmon and coho salmon habitat in the action area. Because this Project will improve habitat by increasing riparian shade over the stream channel, it may help to provide some resilience to climate change.

VIII. INTEGRATION AND SYNTHESIS

CC Chinook salmon and CCC steelhead occur within the WF Russian River, and are currently at very low abundance levels throughout their ranges as compared to historical population estimates. Human induced factors affecting coho salmon, Chinook salmon and steelhead critical habitat, such as logging, agricultural and mining activities, urbanization, stream channelization, dams, and wetland loss, have impaired migration, spawning and rearing habitat throughout their historic ranges. This Project will likely result in direct impacts to CCC steelhead and CC Chinook salmon. Juvenile steelhead and Chinook salmon movement into and out of the action area will be temporarily impacted while the construction site is isolated from the WF Russian River channel, and the capture and relocation of fish during dewatering may result in the harassment or death of a small number of captured fish. However, the impact to the steelhead and Chinook population within the WF Russian River arising from these effects will likely be low. Few rearing fish are expected to be encountered during the Project due to poor rearing habitat conditions currently in the action area, and NMFS expects that the vast majority of migrating adult and smolting steelhead and Chinook salmon will have passed the action area before the construction window. Combined mortality rates during dewatering and relocation activities are likely no more than four percent (3% mortality associated with relocation activities and less than 1% mortality associated with dewatering or desiccation), so the risk of mortality to any encountered juvenile salmonid is low. Impacts from turbidity related to construction activities are temporary and not anticipated to adversely affect salmonids.

Any salmonids present in the action area during the construction window likely make up a small proportion from the WF Russian River sub-population, or CCC steelhead DPS or CC Chinook salmon ESU. Even though overall steelhead and Chinook salmon population numbers in this watershed are low, NMFS believes it is unlikely that the small potential loss of juvenile fish resulting from the Project will impact future adult returns, due to the relatively large number of juveniles produced by each spawning pair in the better habitat conditions located elsewhere in the watershed. Thus, the Project is unlikely to appreciably reduce the likelihood of survival and recovery of CCC steelhead or CC Chinook salmon.

As described above, impacts to critical habitat are minimal, and the value of critical habitat in the action area is currently low due to degraded conditions. Therefore, NMFS expects the short-term loss of a small amount of stream bed and bank from dewatering will not appreciably diminish the long-term value of steelhead and Chinook salmon critical habitat within the action area. Localized restoration of geomorphic function and extensive riparian planting and rehabilitation will likely improve habitat condition within the next three to five years.

IX. CONCLUSION

After reviewing the best available scientific and commercial data, current status of the species, environmental baseline for the action area, effects of the proposed action, and cumulative effects within the action area, it is NMFS' biological opinion that the Project is not likely to jeopardize the continued existence of threatened CCC steelhead or CC Chinook salmon.

After reviewing the best available scientific and commercial data, the current status of the critical habitat, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is NMFS' opinion that the Project is not likely to adversely modify or destroy critical habitat for CCC steelhead, CC Chinook salmon, and CCC coho salmon.

X. INCIDENTAL TAKE STATEMENT

Section 9 of the ESA, and Federal regulation pursuant to section 4(d) of the ESA, prohibit the take of endangered and threatened species, respectively, without 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 NMFS as an act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are nondiscretionary, and must be undertaken by Caltrans and its permittee for the exemption in section 7(o)(2) to apply. Caltrans has a continuing duty to regulate the activity covered by this incidental take statement. If Caltrans: (1) fails to assume and implement the terms and conditions, or (2) fails to require any permittee to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to any permit, grant document, or contract, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, Caltrans must report the progress of the action and its impact on the species to NMFS as specified in the incidental take statement (50 CFR §402.14(i)(3)).

A. Amount or Extent of Take

The number of ESA-listed salmonids that may be incidentally taken during Project activities is expected to be very small. NMFS conservatively estimates that no more than 30 juvenile steelhead and 5 juvenile Chinook salmon may be present during dewatering activities. Any fish present during the construction window will need to be captured and relocated. Based on the low mortality rates for typical relocation efforts, NMFS anticipates no more than four percent of the juvenile salmonids present in the areas to be dewatered will be harmed or killed during

capture, relocation and dewatering efforts. Incidental take will be exceeded if more than 30 juvenile steelhead, or 5 juvenile Chinook salmon are captured for relocation, or if more than 4% of those encountered are harmed or killed.

B. Effect of the Take

In the accompanying opinion, NMFS determined that this level of anticipated take is not likely to result in jeopardy to CCC steelhead or CC Chinook salmon.

C. Reasonable and Prudent Measures

NMFS believes the following reasonable and prudent measures are necessary and appropriate to minimize take of CCC steelhead and CC Chinook salmon:

1. Undertake measures to ensure that harm and mortality to listed salmonids resulting from fish relocation and dewatering activities is low.

2. Prepare and submit a report to document effects of the dewatering and relocation activities.

D. Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, Caltrans, its permittee, and their contractors or designees must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are nondiscretionary.

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

    a. Caltrans or MCDOT shall retain a qualified biologist with expertise in the areas of anadromous salmonid biology, including handling, collecting, and relocating salmonids; salmonid/habitat relationships; and biological monitoring of salmonids. Caltrans shall ensure that all biologists working on this Project be qualified to conduct fish collections in a manner which minimizes all potential risks to CCC steelhead and CC Chinook salmon. Electrofishing, if used, shall be performed by a qualified biologist and conducted according to the *NMFS Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act*. [Available at: http://www.nwr.noaa.gov/1salmon/salmesa/ 4ddocs/final4d/electro2000.pdf]

    b. A qualified biologist shall monitor the construction site during placement and removal of channel diversions and cofferdams to ensure that any harm or loss of salmonids is minimized and documented. The biologist shall be on site during all dewatering events to ensure that all ESA-listed salmonids are captured, handled, and relocated safely. The biologist shall notify NMFS biologist Joe Heublein at (707) 575-1251 or joe.heublein@noaa.gov one week prior to capture activities in order to provide an opportunity for NMFS staff to observe the activities.

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. Captured salmonids will be relocated, as soon as possible, to a suitable instream location in which habitat conditions are present to allow for survival of transported fish and fish already present.

d. If any salmonids are found dead or injured, the biologist shall contact NMFS biologist Joe Heublein by phone immediately at (707) 575-1251 or the NMFS North Central Coast Office at (707) 575-6050. The purpose of the contact is to review the activities resulting in take and to determine if additional protective measures are required. All salmonid mortalities shall be retained, placed in an appropriately-sized sealable plastic bag, labeled with the date and location of collection, fork length measured, and be frozen as soon as possible. Frozen samples shall 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 North Central Coast Office without obtaining prior written approval from the North Central Coast Office, Supervisor of the Protected Resources Division. Any such transfer will be subject to such conditions as NMFS deems appropriate.

e. All cofferdams, pumps, pipes and sheet plastic will be removed from the stream upon Project completion; any clean native gravel used for the cofferdams will be left in the channel to augment available spawning habitat.

f. All pumps used to divert live stream flow, outside the dewatered work area, will be screened and maintained throughout the construction period to comply with NMFS' Fish Screening Criteria for Anadromous Salmonids. See: http://swr.nmfs.noaa.gov/hcd/fishscrn.pdf.

2. The following term and condition implements reasonable and prudent measure 2:

Caltrans or the MCDOT shall provide a written report to NMFS by January 15, following completion of construction. The report shall be submitted to the NMFS North Central Coast Office Attention: Supervisor of Protected Resources Division, 777 Sonoma Avenue, Room 325, Santa Rosa, California, 95404-6528. The report shall contain, at a minimum, the following information:

a. **Fish Relocation --** The report shall include a description of the location from which fish were removed and the release site including photographs; the date and time of the relocation effort; a description of the equipment and methods used to collect, hold, and transport salmonids; if an electroshocker was used for fish collection, a copy of the logbook must be included; the number of fish relocated by species; the number of fish

injured or killed by species; and a brief narrative of the circumstances surrounding ESA-listed fish injuries or mortalities.

b. **Turbidity Monitoring** -- The report shall include turbidity measures at 50 ft downstream of the bridge prior to, during, and following construction and removal of the construction pad; a description of the equipment (secchi disc, transparency tub, etc.) and methods to measure turbidity must be included; and, if any fish are present within 50 ft of the construction pad, a brief narrative of any behavioral changes observed during turbidity monitoring should also be provided.

XI. CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, or to develop information.

Caltrans should incorporate riparian planting into all bank stabilization projects they fund or undertake.Riparian planting and bio-engineered components will improve bank stability and reduce the potential for future erosion.

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. Please notify the Supervisor of Protected Resources Division, 777 Sonoma Avenue, Room 325, Santa Rosa, California, 95404-6515. Please provide the NMFS administrative record number (ARN #151422SWR09SR00511) in correspondence related to this Project.

XII. REINITIATION NOTICE

This concludes formal consultation on the proposed School Way Bridge Replacement Project. As provided in 50 CFR §402.16, reinitiation of formal consultation is required 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 take is exceeded; (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (3) the identified action is subsequently modified in a manner that causes an effect to 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 identified action. In instances where the amount or extent of incidental take is exceeded, formal consultation shall be reinitiated immediately.

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50 CFR part 402: Interagency Cooperation—Endangered Species Act of 1973, as amended; Final Rule. Federal Register 51, No 103: 19926-19963. June 3, 1986.

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71 FR 834: National Marine Fisheries Service. Final rule: Listing Determinations for 10 Distinct Population Segments of West Coast Steelhead. Federal Register 71:834-862. January 5, 2006.

Enclosure 2

ESSENTIAL FISH HABITAT CONSULTATION

ACTION AGENCY:	California Department of Transportation
ACTION:	School Way Bridge Replacement Project, Mendocino County, California
CONSULTATION CONDUCTED BY:	National Marine Fisheries Service, Southwest Region
FILE NUMBER:	2011/05327
DATE ISSUED:	**November 22, 2011**

The 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act (MSA) set forth new mandates for the NOAA's National Marine Fisheries Service (NMFS), regional fishery management councils, and Federal action agencies to identify and protect important marine and anadromous fish habitat. The Councils, with assistance from NMFS, are required to delineate essential fish habitat (EFH) in fishery management plans (FMPs) or FMP amendments for all managed species. Federal action agencies, which fund, permit, or carry out activities that may adversely impact EFH are required to consult with NMFS regarding potential adverse effects of their actions on EFH, and respond in writing to NMFS conservation recommendations. In addition, NMFS is required to comment on any state agency activities that would impact EFH. Although the concept of EFH is similar to that of Critical Habitat under the Endangered Species Act, measures recommended to protect EFH are advisory, not proscriptive. The Pacific Fisheries Management Council has delineated EFH for Pacific Coast Salmon (PFMC 1999).

I. IDENTIFICATION OF ESSENTIAL FISH HABITAT

Essential fish habitat (EFH) is defined in the MSA as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. NMFS regulations further define waters to include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; substrate to include sediment, hard bottom, structures underlying the waters, and associated biological communities; necessary to mean the habitat required to support a sustainable fishery and the managed species contribution to a healthy ecosystem; and spawning, breeding, feeding, or growth to maturity to cover a species full life cycle.

For Pacific coast salmon, the geographic extent of EFH currently being considered includes freshwater habitat. For purposes of this consultation, Pacific coast salmon EFH corresponds closely to Critical Habitat designated under the Endangered Species Act (ESA) for Central California Coast coho salmon (64 FR 24049) and Critical Habitat designated under the ESA for California Coastal Chinook salmon (70 FR 52488).

II. PROPOSED ACTION

The proposed action is described in the preceding biological opinion. In summary, the California Department of Transportation (Caltrans) proposes to fund the replacement of School Way Bridge in Mendocino County, California. The proposed design includes replacing the existing bridge with a longer free-spanning bridge, and the incorporation of plantings and large woody debris into disturbed banks and rock abutment protection. In-channel construction will occur between June 15th and October 15th of 2012 or 2013.

III. EFFECTS OF THE PROJECT ACTION

The associated biological opinion has a general description of activities that directly or cumulatively, temporarily or permanently may threaten the physical, chemical and biological properties of the habitat utilized by Pacific coast salmon and their prey within the proposed Project area. The direct result of these threats is that the function of EFH may be temporarily eliminated, diminished or disrupted.

Potential impacts to Pacific coast salmon EFH, specifically EFH designated for Central California Coast coho salmon and California Coastal Chinook salmon are described in the preceding biological opinion. Adverse effects of the proposed action on salmonid EFH may occur through dewatering and in-channel construction activities.

IV. CONCLUSION

Upon review of the anticipated effects, NMFS believes that proposed bridge construction actions are likely to cause adverse effects to Pacific coast salmon EFH.

V. EFH CONSERVATION RECOMMENDATIONS

Pursuant to Section 305(b)(4)(A) of the Magnuson-Stevens Act, NMFS recommends:

1. Caltrans limit vegetation removal. When tree removal is necessary, trees that need to be moved should be pushed over into the channel perpendicular to the banks, with the root mass remaining anchored in the ground.

2. Caltrans implement revegetation that consists of a multi-story species design with a diverse palette of native species.

VI. FEDERAL AGENCY STATUTORY REQUIREMENTS

The MSA (Section 305(b)(4)(B)) and Federal regulations (50 CFR Section 600.920(j)) to implement the EFH provisions of the MSFCMA require Federal action agencies to provide a written response to EFH Conservation Recommendations within 30 days of its receipt. The Federal action agency included in this consultation is Caltrans. A preliminary response is acceptable if final action cannot be completed within 30 days. The final response must include a description of measures proposed to avoid, mitigate, or offset the adverse impacts of the activity on delineated EFH. If the response is inconsistent with our EFH Conservation Recommendations, it must provide an explanation of the reasons for not implementing them.

VII. LITERATURE CITED

64 FR 24049: Designated Critical Habitat; Central California Coast Coho Salmon and Southern Oregon/Northern California Coasts Coho Salmon. National Marine Fisheries Service, National Oceanic and Atmospheric Administration, United States Department of Commerce. Final Rule and Correction. Federal Register, Volume 64, No. 86, May 5, 1999. Pages 24049-24062.

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